APPENDIX G

Cultural Resources Inventory and Site Evaluation Reports

Cultural Resources Inventory and Site Evaluations in Support of the Proposed Hydrostatic Testing of Line 300, San Bernardino County, California

By:
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Courtney R. Higgins
Kimberley Carpenter

May 2018 FINAL

Submitted to:
Bureau of Land Management
California District Office
22835 Calle San Juan de los Lagos
Moreno Valley, CA 92553

On behalf of:
Pacific Gas and Electric Company
245 Market Street
San Francisco, CA 94105

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MANAGEMENT SUMMARY

Pacific Gas & Electric Company (PG&E) proposes to conduct hydrostatic strength tests for existing high pressure natural gas transmission lines denoted L-300 (including parallel Lines 300A and 300B; see ahead to Figure 1). The segments of Line 300 to be tested are in San Bernardino County, crossing lands primarily administered by the Barstow and Needles Bureau of Land Management (BLM) Field Offices.

The project areas are within or intersect lands managed by federal, state, and local agencies and thus require compliance with (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR § 800, revised 2004); and (2) the California Environmental Quality Act (Public Resources code, Section 21000 et seq., revised 2005), which mandates federal and California public agencies to consider the effects of projects on historic properties. As the Federal Lead Agency for the project, the BLM required a Class III cultural resources inventory of those portions of the project area that have not been previously examined, or which have not been examined in a manner that reflects current standards, to meet Section 106 review and compliance obligations. They also required National Register of Historic Places (National Register) evaluations of all resources which intersect the project's Area of Potential Effects (APE).

Line 300 extends west-east, roughly paralleling State Route 66 and US Highway 40 between Needles, to just east of Daggett, California. This project area is composed of 96 consolidated work locations (including bell holes, laydown areas, staging yards, and in-line [ILI] inspection locations) and roughly 103 miles of extant access roads and planned bridge bypass routes. The L-300 APE was developed in consultation with BLM to include 50-meter peripheral buffers around work locations, and 15 meters off either edge of access roads and bridge bypasses. The APE incorporates approximately 5,293 acres.

This report describes cultural resources that intersect the L-300 project APE. National Register and California Register of Historical Resources (California Register) eligibility assessments for these resources are also provided. Evaluations are based on survey-level data collected by Far Western Anthropological Research Group, Inc., (Far Western) between February 16, and March 6, 2018. Results include site record updates for 90 previously recorded sites and documentation of 99 newly recorded sites.

The 99 newly found sites, include 19 prehistoric resources, four multicomponent, and 76 dating to the historic era, were documented and assessed for eligibility during the current project. Newly recorded historic-era sites include: the Essex townsite; a foundation; four mining sites; two railroad grades; 51 refuse deposits (of which seven are associated with other historical features or prehistoric isolated artifacts); seven road segments; eight rock feature sites (mining or recreation related); a telegraph line; and a late nineteenth-century Chinese worker's camp. These variably date between the late nineteenth and mid- to late twentieth century. The historical components among multicomponent sites include foundations associated with refuse, two other refuse deposits, and a road segment.

Prehistoric sites include a complex occupation with charcoal visibly surrounding surface ground stone, eight campsites (of which two also contain fire-altered rock [FAR]), five lithic reduction stations, and five pavement quarries or single segregated reduction locations (SRLs) surrounded by diffuse debitage scatters. Among multicomponent sites, prehistoric components include two campsites, a pavement quarry, and a lithic reduction station. Temporally diagnostic prehistoric artifacts were not found with any of these prehistoric components, although the complex occupation and two campsites with FAR have the potential to yield direct dates.

Of the 189 total, 11 sites are recommended eligible or have eligible components/elements (SBR-1908/H, -2340H, -4165H, -13115H, -13116H, -13117H, -15114H, -15440/H, P-36-027752, P-36-027757, and SN-

X13); three others have been previously determined eligible or are associated with components/elements that have (SBR-2910H, -5794/13126/H, and -6693H).

In all, 135 sites are wholly ineligible, have ineligible components, or have components/elements that require further research (SBR-2084/H, -3076, -4681, -5797, -6404H, -6515, -6530H, -10637, -10650H, -11583H, -11586H, -12918H, -12999H, -13038/13040/H, -13041, -13101/H, -13103/H, -13114H, -13118H, -13119H, -13619H, -13768, 15115H, -15439, -16742H, -16759H, -16782, -16784H, -16785, -16786H, -17101H, -29795H, -29796H, -29798H, -31747H, P-36-020271, -026456, -026459, -026460, -026468, -026469, -026470, -026490, -026491, -026492, -026493, -026494, -026496, -026499, -026518, -026519, -026532, -026541, -026542, -026543, AU-X1, AU-X2, AU-X3, EG-X10, EG-X11, EG-X12, EG-X13, EG-X15, EG-X17, EG-X20, EG-X21, EG-X22, EG-X23, EG-X24, EG-X25, EG-X26, EG-X27, EG-X28, EG-X29, EG-X31, EM-X16, EM-X17, EM-X18, EM-X19, EM-X20, EM-X21, EM-X22, EM-X23, EM-X26, EM-X27, EM-X28, EM-X29, EM-X32, EM-X33, EM-X34, EM-X35, EM-X36, EM-X38, EM-X39, EM-X40, EM-X41, EM-X42, EM-X43, EM-X44, EM-X46, EM-X47, EM-X48, EM-X49, EM-X50, EM-X53, EM-X55, EM-X56, EM-X57, EM-X58, KR-X1, MM-X1, NS-X1, NS-X2, RB-X10, RB-X12, RB-X13, SN-X14, SN-X15, SN-X16, SN-X17, SN-X19, SN-X20, SN-X22, SN-X23, SN-X24, SN-X27, SN-X29, SR-X6, SR-X7, SR-X8, SR-X10, SR-X11, SR-X12, SR-X13, and SR-X14).

A total of 32 sites require further research to make eligibility determination (SBR-2328/H, -3276H, -3277H, -3278H, -3284H, -8920H, -13449/H, -15443/H, -15857H, -16773, -16787H, P-36-026486, -026495, -027530, EG-X7, EG-X8, EG-X9, EG-X14, EG-X16, EG-X18, EG-X19, EG-X30, EM-X24, EM-X25, EM-X30, EM-X31, EM-X37, EM-X45, RB-X2, RB-X6, RB-X11, and SR-X15). Eight prehistoric sites could not be re-located, are presumed destroyed and no further management is necessary (SBR-1804, -5798, -5799, -5800, -5801, -5807, -5808, and -10649). Included among these 32 is SBR-3284H (i.e., Amboy), for which a previous portion and the current APE are considered ineligible or non-contributing portions, although, the site, as a whole, remains unevaluated and requires further research to assess listing potential.

No further management is recommended for all previously recorded/updated and newly recorded sites, or for those segments of extensive linears that intersect the project APE recommended ineligible for listing. No further management is also required for the eight sites which could not be relocated. No further management is also recommended for the 215 isolates newly found during the current study.

Temporary construction fencing is recommended for portions of all sites intersecting the current project APE that are recommended/determined eligible or for which further research is necessary to assess eligibility. For those sites requiring further research intersected by proposed access roads, the road margin should be fenced for protection beginning 100 feet before the site boundary and ending 100 feet after the site boundary. Otherwise, temporary construction fencing should be placed around the APE-intersected boundaries of eligible sites, site components/elements, and those requiring further research to mitigate potential effects from proposed project work.

The buried site sensitivity assessment indicates that work areas modeled to have high to moderate sensitivity are all in the far western portions of L-300 and include, from west to east: (1) all of Location T-1225 N/T-1229 N; (2) the southern third of Location T-1225 Q/T-1229 M; (3) the first roughly one-kilometer start of the access road west of Location T-1225 L/T-1229 K; (4) a sliver of the northwestern portion of T-1225 L/T-1229 K; and (5) the southern on-third of Location T-1225 K. Excavations in these work areas should be monitored by a qualified archaeologist. As detailed in Chapter 7, two previously recorded campsites were newly recorded in Location T-1225 N/T-1229 N (i.e., EG-X7 and EG-X8); a previously recorded lithic reduction station is within the first roughly 1-kilometer start of the access road west of Location T-1225 L/T-1229 K (i.e., P-36-026488 [no trinomial assigned]); a new campsite (RB-X2) was found outside of the APE of the northwestern portion of T-1225 L/T-1229 K. PG&E has already taken steps to avoid effects to EG-X7 and EG-X8 by shrinking the area of Location T-1225 N/T-1229 N to within >10 meters of the boundaries of each site. The margins of the APE will be fenced to avoid inadvertent effects to these resources.

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CHAPTER 1. INTRODUCTION

Pacific Gas & Electric Company (PG&E) proposes to conduct hydrostatic strength tests for existing high pressure natural gas transmission lines denoted L-300 (including parallel Lines 300A and 300B; Figure 1). The project is located in San Bernardino County, crossing lands primarily administered by the Barstow and Needles Bureau of Land Management (BLM) Field Offices.

Project areas are within or intersect lands managed by federal, state, and local agencies and thus require compliance with (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR § 800, revised 2004); and (2) the California Environmental Quality Act (Public Resources code, Section 21000 et seq., revised 2005), which mandates federal and California public agencies to consider the effects of projects on historic properties. As the Federal Lead Agency for the project, the BLM required a Class III cultural resources inventory of those portions of the project area that have not been previously examined, or which have not been examined in a manner that reflects current standards, to meet Section 106 review and compliance obligations. They also required National Register of Historic Places (National Register) evaluations of all resources which intersect the project's Area of Potential Effects (APE).

This report details for the cultural resources that intersect the L-300 project APE. National Register and California Register of Historical Resources (California Register) eligibility assessments for these resources are also provided. Evaluations are based on survey level data collected by Far Western Anthropological Research Group, Inc., (Far Western) between February 16, and March 6, 2018. Preliminary findings were supplied to BLM on March 23, 2018 (Byerly and Carpenter 2018), and to the PG&E cultural lead, Starla Lane, on March 27, 2018, with BLM approval.

Three to four crews of four to five personnel each, supervised by Far Western crew leads Eric Gingerich, Erik Martin, Steven Neidig, and Sarah Rice completed all fieldwork, overseen by Principal Investigator Ryan M. Byerly. Crew members included Tya Ates. Eric Hall, Dave Ingbar, Michele Maybee, Dave Mike, Ed Mike, Gene Romanski, Kyle Ross, Nick Smith, Mark Strother, Abigail Tirabassi, and Alexa Uberseder. Kimberley Carpenter served as Project Manager.

AREA OF POTENTIAL EFFECTS

The proposed strength test projects are described in detail in the Plan of Development documents submitted to the BLM by PG&E (CH2M 2017a, 2017b). In general, strength test activities will include excavations to access the pipe and test the equipment. Testing the equipment involves cleaning the pipes, filling them with water, pressurizing the pipe to detect leaks, and dewatering the pipes. Testing may also be accomplished by pressurizing with gas. Completing this work will entail the use of access roads, bypasses designed to avoid existing bridges, and work locations. Activities proposed for each work location include material/laydown, temporary excavations, and staging of equipment and supplies. Most of this work will occur within existing PG&E right-of-way where soils may have been previously disturbed. Some of the work may require temporary use of public and private land outside of the permanent PG&E right-of-way.

Use of work areas and maintenance of access roads has the potential to affect historic properties that meet California Register or National Register criteria for significance. The APE therefore considers all project elements that could cause surface and subsurface disturbances within and outside of the existing rights-of-way that could affect any Historic Property that may be present within or immediately adjacent to the APE. The project's APE was designed in consultation with BLM to include a 50-meter buffer around the perimeters of each work location and a 15-meter buffer from either edge of access and bridge bypass roads.

L-300 Project Area

Line-300 extends west-east, roughly paralleling State Route 66 and US Highway 40 between Needles, to just east of Daggett, California. This project area was composed of 96 consolidated work locations (including bell holes, laydown areas, staging yards, and in-line [ILI] inspection locations) and roughly 103 miles of extant access roads and planned bridge bypass routes prior to survey (Table 1; Confidential Appendix A). Post-survey, some locations were shifted, altered, or removed to avoid potential effects to documented eligible resources and those requiring further research (Table 2). The L-300 APE was developed in consultation with BLM to include 50-meter peripheral buffers around work locations, and 15 meters off either edge of access roads and bridge bypasses. The final APE incorporates around 5,293 acres. As detailed in Table 2 and the *Methods* chapter, approximately 2,499 acres of the L-300 APE were inventoried for the current project. The remainder constitutes pipeline corridor surveyed by Far Western in 2013 (Higgins et al. 2013).

REPORT STRUCTURE

This report is divided into eight chapters, not including the forefront Management Summary. Chapter 1 introduces the project, and Chapter 2 presents an overview of the environmental context of the Mojave Desert, including a discussion of past and present conditions. Within that overview is a discussion of the potential of the project area to contain buried prehistoric archaeological deposits based on GIS modeling. Chapter 3 is an overview of the prehistory of the Mojave Desert as it is currently understood, a discussion of the ethnohistory of Native Peoples in the project area, and a summary of major historical (Euro-American) developments. In Chapter 4 we provide site definitions, records search and literature results, and expectations of resources to be found during the inventory, based on those results. Chapter 5 presents the eligibility criteria for the National Register and research designs for evaluation of prehistoric and historic-era resources. This is followed by a discussion of field methods (Chapter 6) and results (Chapter 7). The results chapter provides brief descriptions of each site and recommendations for National Register eligibility of those sites. Chapter 8 briefly summarizes eligibility recommendations for new and previously recorded sites. The report is followed by appendices containing detailed project and results maps, site and isolate resource summaries and locations, new site records, and site record updates.

Table 1. L-300 Project Work Locations.

List No.	Location	Type	Acres	Comments
1	I-125B-126B-293A-294A_PLS1	ILI Location	4.13	-
2	I-125C_DripT_10_83A_And_V_10_85A	ILI Location	1.39	-
3	I-125E_MP 30.79	ILI Location	1.10	-
4	I-126C_MP10_47_And_MP10_50	ILI Location	0.86	-
5	I-126E_MP 30.40	ILI Location	0.69	-
6	I-202A-293B_PLS2A	ILI Location	6.05	Overlaps Laydown T-1224 Location J by 2.29 acres
7	I-202B_MP 106.8A-Elbow	ILI Location	1.15	-
8	I-218A-294B_PLS2B	ILI Location	6.75	Overlaps Laydown T-1228 Location N by 2.62 acres
9	I-218B_MP 107.1A-Elbow	ILI Location	1.38	-
10	I-294C_RCV71_98A_And_RCV71_96B	ILI Location	1.74	Overlaps Laydown T-1223 Location B; T-1227 Location B by 1.67 acres
11	MP 106.6A-Elbow	ILI Location	1.16	-
12	MP 81 Yard	Staging	34.40	-
13	MP21_23A_And_MP20_84B	ILI Location	4.89	-
14	Newberry Springs Yard	Staging	70.58	-
15	T-1222 Location A; T-1226 Location A	Excavation & Laydown	20.12	-

Table 1. L-300 Project Work Locations *continued*.

LIST NO.	LOCATION	TYPE	ACRES	COMMENTS
16	T-1222 Location B; T-1226 Location B	Excavation & Laydown	11.61	-
17	T-1222 Location C; T-1226 Location C	Excavation & Laydown	2.30	-
18	T-1222 Location D; T-1226 Location D	Excavation & Laydown	4.55	-
19	T-1222 Location E	Excavation & Laydown	3.41	-
20	T-1222 Location F; T-1226 Location G	Excavation & Laydown	9.14	-
21	T-1222 Location G	Excavation & Laydown	3.10	-
22	T-1222 Location H; T-1226 Location H	Excavation & Laydown	2.95	-
23	T-1222 Location I	Excavation & Laydown	0.32	-
24	T-1222 Location J; T-1226 Location I	Excavation & Laydown	1.29	-
25	T-1222 Location K	Excavation & Laydown	0.38	-
26	T-1222 Location L; T-1226 Location J	Excavation & Laydown	3.90	-
27	T-1222 Location M	Excavation & Laydown	0.66	-
28	T-1223 Location A	Excavation & Laydown	2.59	-
29	T-1223 Location B; T-1227 Location B	Excavation & Laydown	4.02	Overlaps ILI Location I-294C_ RCV71_98A_And_RCV71_96B by 1.67 acres
30	T-1223 Location E	Excavation & Laydown	0.40	-
31	T-1223 Location F; T-1227 Location D	Excavation & Laydown	1.99	-
32	T-1223 Location H; T-1227 Location F	Excavation & Laydown	3.08	-
33	T-1223 Location I; T-1227 Location G	Excavation & Laydown	17.18	-
34	T-1223 Location J	Excavation & Laydown	0.17	-
35	T-1223 Location K	Excavation & Laydown	2.40	-
36	T-1223 Location L	Excavation & Laydown	4.55	-
37	T-1223 Location M; T-1224 Location A	Excavation & Laydown	3.73	-
38	T-1224 Location B	Excavation & Laydown	3.16	-
39	T-1224 Location C	Excavation & Laydown	2.21	-
40	T-1224 Location D	Excavation & Laydown	2.92	-
41	T-1224 Location E	Excavation & Laydown	2.35	-
42	T-1224 Location F	Excavation & Laydown	2.27	-
43	T-1224 Location G	Excavation & Laydown	3.78	-
44	T-1224 Location H	Excavation & Laydown	2.90	-
45	T-1224 Location I	Excavation & Laydown	2.62	-
46	T-1224 Location J	Excavation & Laydown	2.96	Overlaps ILI Location I-202A-293B_PLS2A by 2.29 acres
47	T-1224 Location K	Excavation & Laydown	0.40	-
48	T-1224 Location L	Excavation & Laydown	3.04	-
49	T-1224 Location M; T-1228 Location Q	Excavation & Laydown	6.61	-
50	T-1224 Location N; T-1225 Location A	Excavation & Laydown	2.97	-
51	T-1225 Location B; T-1229 Location B	Excavation & Laydown	9.64	-
52	T-1225 Location C; T-1229 Location C	Excavation & Laydown	2.92	-
53	T-1225 Location D	Excavation & Laydown	2.21	-
54	T-1225 Location E	Excavation & Laydown	1.36	-
55	T-1225 Location F; T-1229 Location E	Excavation & Laydown	1.93	-
56	T-1225 Location G; T-1229 Location G	Excavation & Laydown	1.66	-
57	T-1225 Location H	Excavation & Laydown	2.64	-
58	T-1225 Location I	Excavation & Laydown	2.55	-
59	T-1225 Location J	Excavation & Laydown	1.77	-
60	T-1225 Location K	Excavation & Laydown	1.79	-
61	T-1225 Location L; T-1229 Location K	Excavation & Laydown	38.27	-
62	T-1225 Location N; T-1229 Location N	Excavation & Laydown	11.35	-
63	T-1225 Location O	Excavation & Laydown	0.14	-
64	T-1225 Location P	Excavation & Laydown	0.18	-
65	T-1225 Location Q; T-1229 Location M	Excavation & Laydown	0.46	-
66	T-1226 Location E	Excavation & Laydown	1.20	-
67	T-1226 Location F	Excavation & Laydown	4.23	-

Table 1. L-300 Project Work Locations *continued*.

List No.	Location	Type	Acres	Comments
68	T-1226 Location K	Excavation & Laydown	0.46	-
69	T-1226 Location L; T-1227 Location A	Excavation & Laydown	3.08	-
70	T-1227 Location E	Excavation & Laydown	2.34	-
71	T-1227 Location H	Excavation & Laydown	2.68	-
72	T-1227 Location I	Excavation & Laydown	3.63	-
73	T-1227 Location J	Excavation & Laydown	1.62	-
74	T-1227 Location K; T-1228 Location A	Excavation & Laydown	2.07	-
75	T-1228 Location B	Excavation & Laydown	1.38	-
76	T-1228 Location C	Excavation & Laydown	1.33	-
77	T-1228 Location D	Excavation & Laydown	1.22	-
78	T-1228 Location E	Excavation & Laydown	0.32	-
79	T-1228 Location F	Excavation & Laydown	1.36	-
80	T-1228 Location G	Excavation & Laydown	1.28	-
81	T-1228 Location H	Excavation & Laydown	1.74	-
82	T-1228 Location I	Excavation & Laydown	1.06	-
83	T-1228 Location J	Excavation & Laydown	2.21	-
84	T-1228 Location K	Excavation & Laydown	1.01	-
85	T-1228 Location L	Excavation & Laydown	0.64	-
86	T-1228 Location M	Excavation & Laydown	0.73	-
87	T-1228 Location N	Excavation & Laydown	2.96	Overlaps ILI Location I-218A-294B_PLS2B by 2.62 acres
88	T-1228 Location O	Excavation & Laydown	3.67	-
89	T-1228 Location P	Excavation & Laydown	2.64	-
90	T-1228 Location R	Excavation & Laydown	1.53	-
91	T-1228 Location S; T-1229 Location A	Excavation & Laydown	3.79	-
92	T-1229 Location D	Excavation & Laydown	4.71	-
93	T-1229 Location F	Excavation & Laydown	2.29	-
94	T-1229 Location H	Excavation & Laydown	2.77	-
95	T-1229 Location I	Excavation & Laydown	1.33	-
96	T-1229 Location J	Excavation & Laydown	1.90	-

Note: These acreages reflect the areas of work locations and do not incorporate associated buffers.

Table 2. L-300 Area of Potential Effects Acreage Breakdown.

Land Owner	Pre-survey APE	Surveyed for Current Project	Removed from Project Post-survey	Final APE
Bureau of Land Management	4,254.75	1,867.91	1.19	4,253.56
Private/Unknown	1,044.25	630.86	5.22	1,039.03
Total	**5,299.00**	**2,498.77**	**6.41**	**5,292.59**

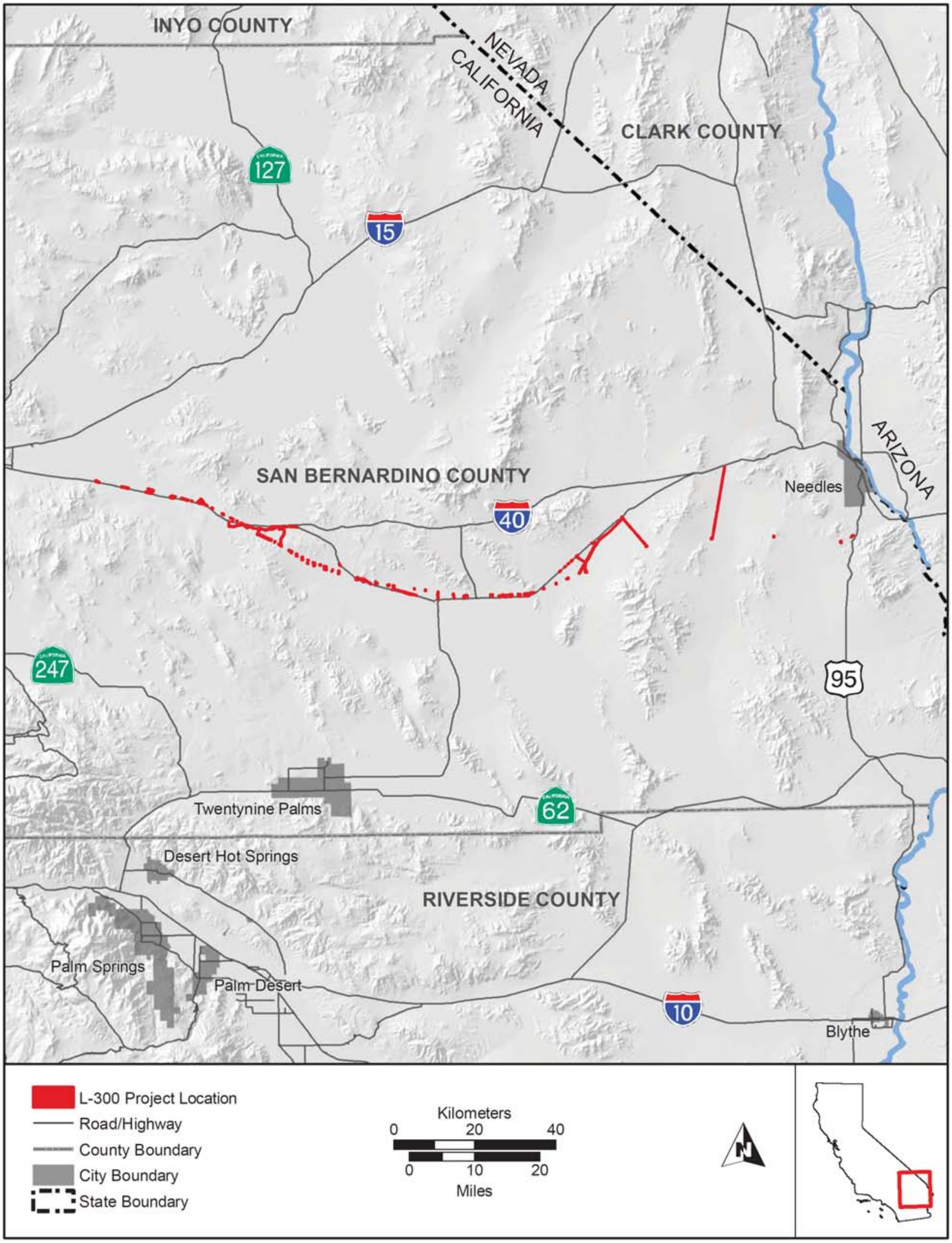

Figure 1. L-300 Project Extent.

CHAPTER 2. ENVIRONMENTAL SETTING

MOJAVE DESERT ENVIRONMENT

The Mojave Desert lies between the Great Basin and Sonoran Desert sections of the Basin and Range Province and is characterized by internally drained basins situated between generally northwest-trending mountain ranges that follow fault lines (MacMahon 1997). The climate is arid, with average winter and summer temperatures ranging between 7 and 25 °C (45 and 77 °F), and average precipitation ranging between 76 and 203 millimeters (three and eight inches) per year, most of which (65–95%) falls during the autumn and winter. The remainder falls in short, intense summer monsoonal thunderstorms (MacMahon 1997; Miles and Goudey 1997; Rhode 2001).

Typical Mojave Desert fauna include bighorn sheep (*Ovis canadensis*); desert kit fox (*Vulpes velox*); coyote (*Canis latrans*); spotted skunk (*Spilogale gracilis*); spotted bat (*Euderma maculatum*); black-tailed jackrabbit (*Lepus californicus*); desert cottontail (*Sylvilagus audubonii*); pocket gopher (*Thomomys bottae*); antelope squirrel (*Ammospermophilus leucurus*); ground squirrel (*Spermophilus mohavensis*); kangaroo rat (*Dipodomys deserti*); desert woodrat (*Neotoma lepida*); little pocket mouse (*Perognathus longimembris*); white-footed mouse (*Peromyscus leucopus*); various birds of prey and owls, quail, roadrunner (*Geococcyx californianus*); desert tortoise (*Gopherus agassizii*); several varieties of rattlesnake; desert iguana (*Dipsosaurus dorsalis*); and chuckawalla lizard (*Sauromalus obesus*; Miles and Goudey 1997). Southern desert horned lizards (*Phrynosoma platyrhinos calidiarum*) are also present.

Common plants include creosote (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), Mormon tea (*Ephedra*), saltbush (*Atriplex*), brittlebush (*Encelia*), wolfberry (*Lycium andersonii*), goldenbush (*Ericameria*), range ratany (*Krameria erecta*), and bladdersage (*Scutellaria mexicana*), with blackbrush (*Coleogyne ramosissima*) and Joshua tree (*Yucca brevifolia*) at higher elevations (Rhode 2001:4). Saltbush and mesquite (*Prosopis glandulosa* var. *torreyana*) are present around playas and in proximate dunes, while catclaw acacia (*Senegalia greggii*), smoke tree (*Psorothamnus spinosus*), bladderpod (*Peritoma arborea*), jimson weed (*Datura wrightii*), and cheesebush (*Ambrosia salsola*) are prevalent in ephemeral washes (Rhode 2001:4).

MOJAVE DESERT PALEOENVIRONMENT

The Late Pleistocene mid-elevation zones of the Mojave Desert were cooler and wetter than present, dominated by single-leaf pinyon (*Pinus monophylla*) south of 36°N latitude until approximately 13,300 cal BP, when they were replaced by woodlands consisting of Utah juniper (*Juniperus osteosperma*), Joshua tree, and Mexican cliffrose (*Purshia mexicana*). These species persisted until 11,300 cal BP (Koehler et al. 2005). South of this latitude, pinyon woodland was more common at higher elevations. The Late Pleistocene/Early Holocene transition marked the gradual aridification of the Mojave and northward migration of desert thermophiles, prompting the steady departure of pinyon, followed by juniper. These were replaced by mesquite (*Prosopis juliflora*) communities including peach thorn (*Lycium cooperi*), Mojave sage (*Salvia mohavensis*), and cottontop cactus (*Echinocactus polycephalus*) at lower elevations (1,000 feet [305 meters] above sea level) around 9800–9400 cal BP (Koehler et al. 2005), although at least two periods of increased effective moisture between 12,400 and 11,400 cal BP and 11,300 and 8700 cal BP, coincident with periods of enhanced summer monsoons (Miller et al. 2010), may have hindered the spread of these species in some areas (Koehler et al. 2005; Spaulding 1990).

Sediment core data from Dry Lake in the San Bernardino Mountains (i.e., the southern geographic boundary of the Mojave Desert) point to sustained alluvial deposition between 9000 and 7500 cal BP fostered by generally wet, stormy conditions caused by an enhanced North American monsoon cycle that was strengthened by increased summer insolation (Bird and Kirby 2006:188). These data, including depressed total organic matter levels, elevated magnetic susceptibility profiles, and increased sand content, also indicate a 300-year "cold snap" between 8400 and 8100 cal BP within this enhanced monsoon cycle that is coincident with the widely recognized "8.2 ka event" (Bird and Kirby 2006:189–190). This climatic episode was characterized by cooler summer temperatures and increased winter precipitation caused by a sustained southerly jet stream that would have promoted persistent snow accumulation, glacial resurgence, and increased erosion in the San Bernardino Mountains (Bird and Kirby 2006:189; Owen et al. 2003). These conditions would have also encouraged highstands in desert playas.

After 7500 cal BP, proxies identify decreased summer precipitation, which would have conversely promoted desiccation of desert playas, as indeed demonstrated at Emerson Lake (Bird and Kirby 2006; Kuehn 2002). The last sustained highstand at Owens Lake, for example, occurred at approximately 8800 cal BP followed thereafter by nearly 5,000 years of drought and near desiccation of the lake (Bacon et al. 2006). Sediment core data subsequently gathered at Silver Lake (Kirby et al. 2015) build on Bird and Kirby's (2006) high elevation paleoclimatic data from Dry Lake. Similar suites of paleolimnological markers identify a pronounced early Holocene wet period extending between roughly 11,700 and 7500 cal BP characterized by the presence of perennial lakes in the Central Mojave Desert followed by a prolonged mid-Holocene arid period extending between roughly 7500 and 4000 cal BP.

Creosote proliferates regionally around 7700 cal BP, but its dominance within Mojave Desert vegetation communities was not established until approximately 5400 cal BP (Koehler et al. 2005). However, Rhode (2001) documents this plant in packrat middens in the eastern areas of the Combat Center by 11,700 cal BP, and its persistence in other middens until the Late Holocene. The presence of "King Clone" in Johnson Valley (south of the L-300 project area), which is estimated to represent upwards of 11,000 years of growth, also speaks to an earlier local presence of creosote (Vasek 1980). High elevation settings (>1,200 meters above sea level) were dominated by juniper-scrub woodland including Utah agave (*Agave utahensis*) by 5500–4800 cal BP, with the regional absence of pinyon during this time pointing to increased summer temperatures and precipitation (Koehler et al. 2005). This is also reflected by amplified alluvial fan aggradation across the Mojave Desert between roughly 6000 and 3000 cal BP (Miller et al. 2010). Shadscale (*Atriplex confertifolia*) replaced Utah agave at high elevations around 5100 cal BP, and Mojave sage likewise disappeared between 3700 and 2700 cal BP, stemming from regional surges in effective moisture at all elevations (Koehler et al. 2005). Modern vegetation communities were established by 650 cal BP.

Late Holocene Mojave Desert environments suffered periods of prolonged drought stemming from depressed sea surface temperatures, high insolation, and low volcanic aerosol concentrations, particularly during the Medieval Climatic Anomaly (MCA) between approximately 950 and 750 cal BP (AD 1000–1200; MacDonald et al. 2008; Mann et al. 2005). Over the last 2,000 years, for example, reconstructed Palmer Drought Severity Indices indicate significantly more dry years in the Mojave Desert during the tenth and thirteenth centuries, with significantly greater periods of extreme and severe drought during the tenth century (Cook et al. 2004).

The proceeding 300 years were characterized by increasingly wetter climates, with significantly more wet years between the seventeenth and eighteenth centuries, corresponding to a well-recognized period of cooler temperatures (1–2 °C) and enhanced precipitation labeled the Little Ice Age (ca. 700–100 cal BP; AD 1250–1850). Available data point to particularly increased river flow and sustained lake levels across the Mojave Desert during the mid-seventeenth century due to these conditions (Miller et al. 2010), which probably attracted human and animal populations to regional oases.

BURIED PREHISTORIC SITE POTENTIAL (with Jack Meyer)

Archaeological sites must be identified to be avoided, sampled, or otherwise managed in accordance with regulatory requirements. This can be an especially difficult where archaeological sites have been buried by sediments, disturbed or destroyed by artificial cutting (e.g., agriculture, canals, ditches), or covered by artificial fill deposits (e.g., levees). It is also a practical problem for agencies and resource managers who are responsible for seeing that reasonable efforts are made to identify archaeological deposits in keeping with the regulatory requirements that govern the treatment of cultural resources and historic properties. Early detection of such sites can also help alleviate or prevent costly delays that often occur when unknown resources are discovered after earth moving has begun and late discovery protocols are necessary, particularly if human remains are present. For large or complex projects, early site identification can help minimize project costs and potential scheduling delays that often result when sites are "unexpectedly" discovered during construction.

As such, it is crucial that appropriate discovery and identification methods are used to help insure that late archaeological discoveries do not inadvertently affect project budgets or schedules (critical path), especially in any sensitive areas where the proposed earth-disturbances may be deep, extensive, or both. If an informed and integrated "good faith" approach is implemented and properly conducted, the issue of archaeological site identification can be effectively and efficiently managed to comply with existing regulatory frameworks and mandates. Thus, the need to locate unknown archaeological sites that may exist in the project area is a primary goal of the work plan proposed in the final section.

The following sections present: a brief outline of the geoarchaeological perspective, describes the factors that affect archaeological sensitivity, and the methods used to develop a refined archaeological sensitivity model for the current Project Areas.

Geoarchaeological Perspective

According to Waters (1992:7–11), modern geoarchaeological research has three main objectives: (1) place archaeological deposits in their temporal and stratigraphic context; (2) understand natural site formation processes; and (3) reconstruct the paleolandscape. Understanding the age of different landforms is first-order geochronology (Waters 1992), a fundamental step in discerning where the archaeological record is likely to be buried, and where cultural remains deposited over the entire span of human occupation may be preserved on or just below the modern ground surface.

A working premise of this perspective is that the archaeological record is inherently biased due to the processes responsible for landscape evolution. Older archaeological deposits are frequently under-represented at the surface of the modern landscape due to cyclical periods of erosion and deposition during the Holocene (<11,500 cal BP). These geomorphic processes are well expressed in the region where sediments from the uplands were transported to the valley lowlands, where they formed alluvial fan, floodplain, and wetland deposits.

Prehistoric Site Sensitivity

This section describes the rationale used to estimate the potential for buried archaeological resources in the project area. At a general level, it is relatively easy to predict that buried archaeological sites will be found in Holocene-age depositional landforms or below artificial fill deposits. Predicting exactly where they are located, however, can be a more difficult task. For archaeologists to rigorously investigate prehistoric site distributions, reconstruct how prehistoric populations adapted to a changing landscape, and model the decision-making processes that underlay settlement and subsistence choices, it is necessary to reconstruct paleogeography and paleoecology. Such a reconstruction then provides a solid basis for refining predictive models of where sites are most likely to be located (a key factor in buried-site potential modeling), and it also provides insights into diachronic changes in settlement patterns and subsistence strategies.

Studies throughout central and southern California demonstrate that repeated cycles of erosion, deposition, and landscape stability occurred across this broad region during the Latest Pleistocene and Holocene (e.g., Meyer 1996; Meyer and Rosenthal 1997, 2008; Meyer et al. 2010; Rosenthal and Meyer 2004a, 2004b). Due to the episodic nature and timing of these processes, the modern ground surface is often composed of a variety of different landforms that range from almost modern to tens of thousands of years in age. Because the existing geologic maps of the project area place these landforms into broad or poorly defined temporal groups, it was necessary to assess the age and refine the extent of the surface deposits so that landforms without the potential for buried archaeological deposits are clearly distinguished from those that possess the potential to contain them.

As the primary goal of the sensitivity modeling is to identify those portions of the landscape with a potential to contain buried archaeological sites—i.e., deposits that cannot be recognized through traditional pedestrian survey—it is necessary to identify segments of the landscape that developed during the span of human occupation in North America, roughly the last 15,000 years (e.g., Goebel et al. 2008). Segments of the surface landscape that developed prior to human colonization of North America obviously cannot contain buried archaeological deposits (Rosenthal and Meyer 2004a, 2004b). With this basic understanding, the potential for buried archaeological deposits can be narrowed to Holocene landform segments, allowing older portions of the landscape to be confidently excluded from further consideration.

Landform Age and Site Potential

To assess the potential for buried sites, it is first necessary to have a relatively accurate map of the age of deposits and landforms that make up the modern ground surface. To do this, we analyzed existing geologic and soils data, along with radiocarbon evidence, to improve the spatial and temporal resolution of surface landforms mapped in the project area. Refined age assignments were based on relative soil development, landscape position, cross-cutting relationships, and radiocarbon dates associated with the same soil types, where available. Similar soil types were then combined into specific age groups, based on major climatic periods, to create a surface landform-age map (this will be presented with the Draft Technical Report).

The main working assumptions underlying this model are: (1) archaeological sites are not buried within landforms that developed prior to human colonization of the region around 13,500 cal BP (Rosenthal and Meyer 2004a, 2004b); (2) the potential for buried archaeological sites generally increases as the age of the surface landform decreases; and (3) the density of human populations increased over time, as did the potential number of archaeological sites on the landscape. Stated differently, the potential for older landforms to contain buried sites is lower than it is for younger landforms because the amount of time for human occupation was shorter for older landforms compared to the younger ones. As such, formerly stable land surfaces buried late in time have a higher probability of containing archaeological material than those buried earlier in time. With these assumptions in mind, the age differences between younger depositional landforms can be used as a relative measure of the potential (i.e., probability) for buried archaeological sites.

Site Location and Distribution Patterns

Prehistoric archaeological sites are not distributed randomly throughout the landscape but tend to occur in specific geo-environmental settings (Foster et al. 2005:4; Hansen et al. 2004:5; Pilgram 1987; Rosenthal and Meyer 2004a). For example, the precise location of prehistoric settlements is often dependent on a variety of environmental characteristics, such as proximity to water, topographic setting, and past distributions of important plant and animal foods, which made some locations more attractive or unfavorable for past human use or occupation. Thus, the potential for buried sites can be greatly over-estimated in some areas and underestimated in others without reasoned consideration of how the environment influence human settlement decisions in the past.

It is well known for instance, that prehistoric occupation sites are most often associated with relatively level landforms that occur near perennial streams, especially those located at or near the confluence of two or more channels (Pilgram 1987:44–47), and near water sources such as lakes, creeks, sloughs, and wetlands where plant and animal populations are generally more diverse and concentrated.

Distance-to-Water Factor

Due to the strong correspondence between the location of water and archaeological sites in the region, the position of the natural stream channels that appear in the 1930 air photos were plotted in GIS and used to model the "distance-to-water" as an archaeological sensitivity factor within the Project Areas. Basically, areas located 150 meters or less from a stream or lake are considered to have the Highest sensitivity. From there, sensitivity declines for areas that lie at progressively greater distances away from water up to 1,200 meters, at which point the sensitivity is modeled as Lowest. The distance-to-water factor was calculated in GIS and integrated with the surface landform-age to refine the buried site potential model across the Project Areas.

L-300 Buried Prehistoric Site Sensitivity

Modeled prehistoric site sensitivity relative to L-300 project areas are reflected in the maps series presented in Confidential Appendix B. Table 3 outlines the APE acreages encompassing the various qualitative levels of sensitivity. Nearly all (ca. 98%) of the L-300 APE intersects areas modeled to have the lowest or low potentials to preserve buried prehistoric archaeological material. Those work areas modeled to have high to moderate sensitivity are all in the far western portions of L-300 and include, from west to east: (1) all of Location T-1225 N/T-1229 N; (2) the southern third of Location T-1225 Q/T-1229 M; (3) the first roughly 1-kilometer start of the access road west of Location T-1225 L/T-1229 K; (4) a sliver of the northwestern portion of T-1225 L/T-1229 K; and (5) the southern on-third of Location T-1225 K. As detailed in Chapter 7, two previously recorded campsites were newly recorded in Location T-1225 N/T-1229 N (i.e., EG-X7 and EG-X8); a previously recorded lithic reduction station is within the first roughly 1-kilometer start of the access road west of Location T-1225 L/T-1229 K (i.e., P-36-026488 [no trinomial assigned]); and a new campsite was found outside of the APE of the northwestern portion of T-1225 L/T-1229 K.

Table 3. L-300 Buried Prehistoric Site Sensitivity.

Sensitivity Level	Acres	%Total
Highest	18.17	0.34
High	20.44	0.39
Moderate	27.29	0.52
Low	519.42	9.81
Lowest	4,707.26	88.94

DESERT PAVEMENTS AND MOJAVE DESERT ARCHAEOLOGY (with Sarah Rice)

Desert pavements are among the most ancient geomorphic features on earth but remain an actively changing part of the modern landscape (Dickerson 2012; Fuchs et al. 2015; Pelletier et al. 2007; Seong et al. 2016). During pavement genesis, deflation and sheetwash winnow fine sediment and concentrate clasts at the surface (Bull 1991). Water moves windblown dust into spaces between clasts and slowly deposits sediment into tiny pores in the soil beneath them. Wet-dry cycling slowly and continuously creates a porous, weak soil which heaves clasts up and forces them together at the surface (McFadden et al. 1987).

Gradually, clasts are worked into an interlocking network, creating an armor one-to-two courses thick above a developing soil horizon (Buol et al. 2003; Ritter et al. 2011), and often an underlying carbonate duripan in exceptionally old fans.

Toolstone quality cryptocrystalline silicate (CCS) or quartz (i.e., jasper and chalcedony; see Flenniken 2000; Flenniken et al. 2001), fine-grained volcanic, silicified tuffs and felsite nodules often comprise clasts in these interlocking matrices, which represent secondary float sources that were widely exploited by prehistoric hunter-gatherers across the Mojave Desert. Indeed, such toolstone is so replete throughout the region that it likely never represented a limiting resource for regional hunter-gatherers (Bamforth 1990). The most common prehistoric sites encountered atop pavements are pavement quarries, which reflect *in situ* prospecting of these nodules, manifest as groups of segregated reduction locations (SRLs).

The long-term geomorphic processes that many desert pavements require to form limit the possibility of finding significantly buried archaeological deposits within them. Overlying loam may contain artifacts if they were present at the time of early pavement development, as they would have been subject to vertical and horizontal displacement due to clast heaving and pedogenesis, but it is unlikely that burial depths would be significant. Indeed, the many test excavations of SRLs that have been conducted aboard MCAGCC have shown that when found subsurface, associated small waste debris is confined to near-surface contexts (typically within 10 centimeters), directly correlates in density with that observed on the surface, and adds little to no research value to tested sites (e.g., Basgall 2013; Glover et al. 2014).

Moreover, survey and evaluation data have also demonstrated that the morphologies and characteristics of pavement quarry SRLs are qualitatively and quantitatively equable, and rarely, if ever are they associated with temporally diagnostic artifacts (e.g., Byerly 2017), lending little in the way of significant data to be gleaned from these overwhelmingly redundant resources. Similar resources at Fort Irwin, however, have been found in association with temporally diagnostic artifacts, rock features (including intaglios and rings), and habitational debris (Byrd et al. 2005; Byrd and Berg 2007).

CHAPTER 3. CULTURAL CONTEXT

MOJAVE DESERT PREHISTORY

The following is based on the prehistoric chronologies presented in Warren (1984) and Warren and Crabtree (1986), but incorporates the broader epochal divisions cited in Sutton et al. (2007). It draws heavily from work at China Lake, Fort Irwin, aboard the Marine Corps Air Ground Combat Center (MCAGCC), and in the Mojave National Preserve (Basgall 2000; Byrd et al. 2011; McGuire et al. 2015; Ruby et al. 2010); it was adapted directly from Byerly and Byrd (2018), with minor modification, and includes excerpts from McGuire et al. (2015). Geologic era divisions are based largely on Walker et al. (2012), who draw their chronology from well-supported global climatic events.

As stressed by Byrd et al. (2011), among others (Basgall 2000), Mojave Desert cultural chronologies (Figure 2) are highly varied due to the paucity of reliable dates, and the insecure temporal and typological affiliation of many projectile points. In fact, most Mojave Desert technologies seem to have extensive temporal ranges that significantly overlap one another. The chronological references herein (Sutton et al. 2007:235) should thus be considered tenuous and applied only very generally.

Late Pleistocene (>11,700 cal BP)

The earliest widespread archaeological complex in North America is Clovis. Although debate wages regarding the antecedent(s) of Clovis lithic technology (e.g., Goebel et al. 2008; Stanford and Bradley 2012), increasing numbers of sites that pre-date the Clovis timeframe (Waters et al. 2011:1602) suggests that these hunter-gatherers were not the first inhabitants of the continent. Indeed, sites like Monte Verde (Chile), the Schaefer and Hebior sites (Wisconsin), Meadowcroft Shelter (Pennsylvania), Page-Ladson (Florida), and the Debra L. Friedkin Site (Texas), there is now convincing evidence for occupation of the Americas between about 16,000 and 14,000 cal BP, about 2,000–3,000 years earlier than Clovis (e.g., Gilbert et al. 2008; Goebel et al. 2008; Waters et al. 2011). Pre-Clovis sites have been reported in the Mojave Desert, but none has withstood thorough scientific review (Erlandson et al. 2007). Better evidence seems to exist in the northern Great Basin, where assays on an arguably human coprolite from Paisley Cave (ca. 14,200 cal BP; cf. Sistiaga et al. 2014) pre-date the earliest Clovis dates by nearly 1,000 years (Gilbert et al. 2008; Jenkins et al. 2012).

Clovis

Clovis projectiles are lanceolate and concave-based, with distinctive bifacial basal fluting. They date to between 13,350 and 12,700 cal BP in the Great Plains and Southwest, although Waters and Stafford (2007) substantially, and controversially (Haynes et al. 2007), trim this range to between 12,900 and 12,700 cal BP. Prasciunas and Surovell (2015:33) further question this tighter range, noting that their demographic models indicate that the small sample of sites used by Waters and Stafford (2007) is not sufficient to accurately account for the true duration of a Clovis colonization, let alone the age range of Clovis technology.

Whatever the precise temporal span of the Clovis complex, it is thought to signal the Late Pleistocene presence of small groups of highly mobile hunter-gatherers in North America that preyed upon a few now mostly extinct megafaunas, although ideas regarding their actual dietary range, among most other aspects of their lifeways, remain highly contentious. This is particularly so in the Great Basin and Mojave Desert where Clovis and other fluted projectiles are uncommon and most often found as isolated artifacts (Basgall 1993, 2000; Byerly and Roberson 2015; Goebel et al. 2011; Grayson 2011; Rondeau et al. 2007; Tetra Tech and Far Western 1999). Those from the Sunshine Locality are, for example, smaller and thinner than "classic" Great Plains and Southwest Clovis forms, date younger, and are indeed more Folsom-like in character (Beck and Jones 2009, 2010).

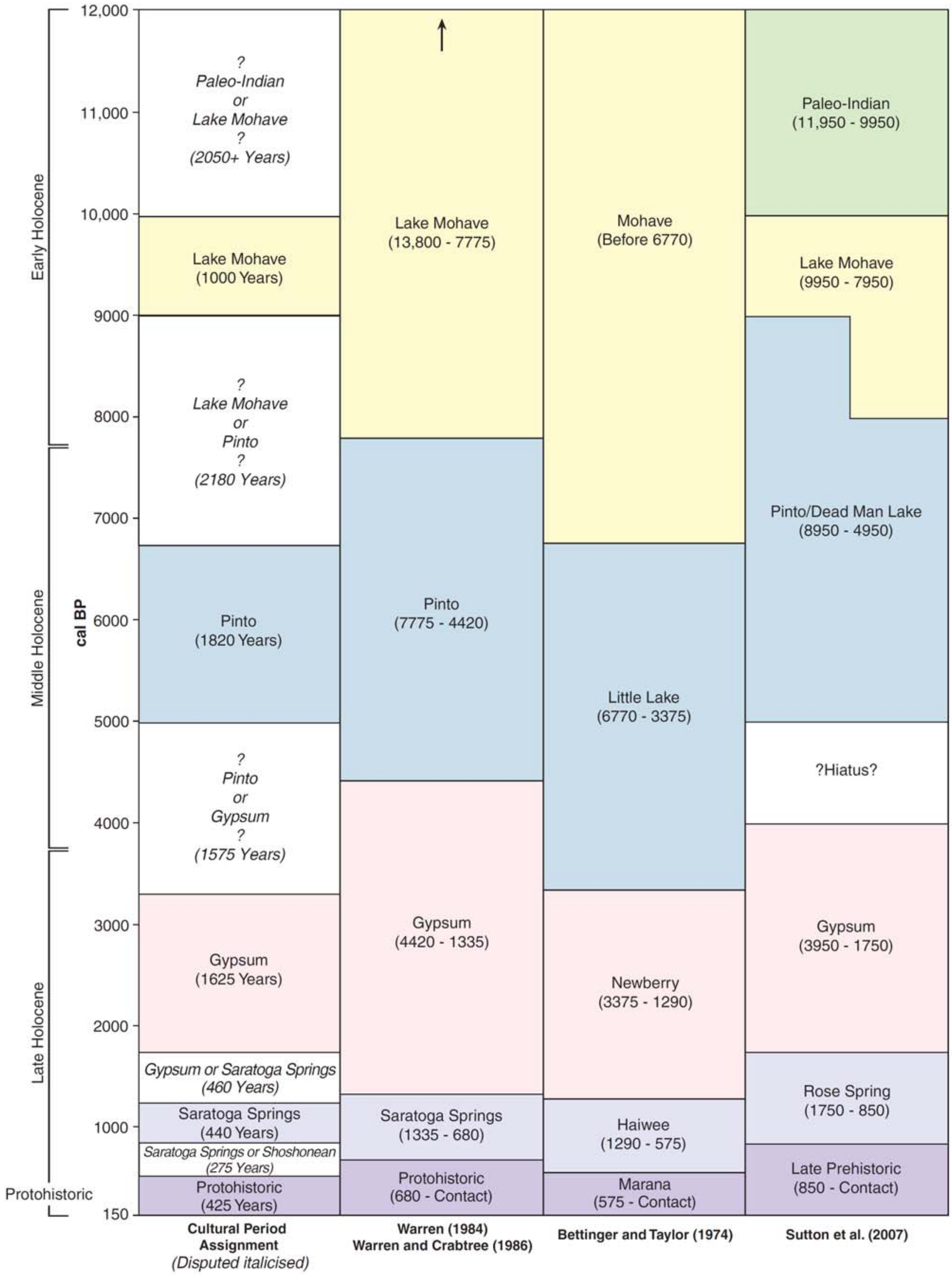

Figure 2. Prehistoric Cultural Chronologies for the Mojave Desert (from Byrd et al. 2011:46).

Fluted point concentrations have been found in California but dated Clovis-aged components containing fluted projectiles are currently unknown in the state (Rondeau et al. 2007; cf. Rondeau 2015 regarding other aspects of Clovis technology in western North America), or elsewhere in the Mojave Desert and southern Great Basin. Basally thinned and edge-ground concave-base points (cf. Great Basin Concave Base, Komodo Concave Base, Black Rock Concave Base) are more common at early sites near China Lake, but their temporal and cultural relationship to Clovis points remains unknown. Notably, China Lake Basin is one of the few localities in the Mojave Desert to regularly produce both early fluted and non-fluted concave-base points (e.g., Basgall 2007a, 2007b; Byrd 2006, 2007; Davis 1978; Giambastiani and Sprengeler 2010; Rosenthal et al. 2001; Tetra Tech and Far Western 1999).

Basgall and Hall (1991; see also Basgall 1988, 2007a) have shown that concave-base and stemmed points pattern differently across the landscape and are typically made of different materials, suggesting they are, indeed, part of separate chronological or cultural traditions. In contrast, Beck and Jones (2010) have argued that western stemmed and concave-base points are related culturally and chronologically based on a broad assessment of early site assemblages in the northern and eastern Great Basin. Regardless, most available data seem to point to the more prolific stemmed point tradition(s) as the earliest enduring cultural presence in the Great Basin and Mojave Desert (Basgall 1993; Beck and Jones 2010; Erlandson and Braje 2011, 2012; Jenkins et al. 2012; Sutton et al. 2007; cf. Goebel and Keene 2014).

Early Holocene (ca. 11,700–8200 cal BP)

Research in the Channel Islands suggests that Early Holocene stemmed point traditions may have ties to Late Pleistocene lithic technologies in Asia (Erlandson and Braje 2012; Erlandson et al. 2011; cf. Jenkins et al. 2012). Specifically, stemmed and tanged/barbed projectiles, associated with bifacial crescents that are commonly found with stemmed points in Early Holocene sites throughout the Great Basin and Mojave Desert, are reminiscent of Jomon projectiles from coastal Japan dated to around 14,500 cal BP. Assays from these Channel Islands localities, in concert with early dates from the Great Basin, point to at least a Younger Dryas (ca. 12,920–11,600 cal BP) timeframe for the presence of stemmed point technologies in western North America (Goebel and Keene 2014; Goebel et al. 2011).

Conversely, Jenkins et al. (2012) view stemmed point traditions as, much like some view Clovis (Waters et al. 2011; cf., Stanford and Bradley 2012), an independent North American technological development with no clear ties to known Old World flaked stone traditions. In this vein, the "Western Stemmed Tradition" developed in far western North America just prior to or in sync with Clovis, the latter of which arose in the Great Plains or perhaps Southeast. Available dates from Paisley Cave securely place the earliest stemmed points in strata dating between roughly 13,200 and 12,900 cal BP (Jenkins et al. 2012:224), predating the Channel Islands assays by up to 1,000 years (cf. Goebel and Keene 2014).

Goebel and Keene (2014), who conducted a rigorous review of Great Basin stemmed point and radiocarbon date associations, alternatively argue that stemmed point traditions consistently post-date "classic" Clovis-aged sites, except for components at Smith Creek Cave, Nevada, Paisley Cave, Oregon, and Bonneville Estates Rockshelter, Utah, where ranges are co-eval. Additional comparative analyses by Reid et al. (2015) also found no evidence for the contemporaneity of Western Stemmed and Clovis points among early sites in eastern Washington and southern Idaho, but rather consistent chronological priority of Clovis over Western Stemmed forms. As noted, however, Clovis point/radiocarbon date associations are unknown in the southern Great Basin, much less in the Mojave Desert, frustrating the placement of regional Clovis presence within the broader known Clovis timeframe, and certainly doing the same regarding its association with stemmed point technology, or lack thereof (e.g., Goebel and Keene 2014).

Stemmed point morphologies vary regionally across western North America, although it is unclear how much of this variability is related to simple re-working (Beck and Jones 2009). The named stemmed forms most often found in the Mojave Desert include Lake Mojave and Silver Lake types.

Lake Mojave and Silver Lake

Lake Mojave projectiles are lanceolate and possess long contracting stems and narrow shoulders, while Silver Lake points are typically smaller, have more pronounced shoulders, and exhibit distinctive convex bases (Warren and Crabtree 1986). The great majority of Lake Mojave-era sites are surface manifestations, confounding efforts to develop a radiocarbon chronology. Beck and Jones (1997, 2010; see also Willig and Aikens 1988) have compiled radiocarbon dates from Early Holocene stemmed-point sites in the northern and central Great Basin, demonstrating that most of these assemblages predate about 9500 cal BP and may be as much as 13,200 years old (cal BP); partially overlapping in time with the Clovis complex. Dates range between 11,670 and 9450 cal BP in the few assayed contexts at Fort Irwin and China Lake (Sutton et al. 2007:235) and may extend to as late as 7400 cal BP, overlapping dates for the Pinto technological complex (Basgall 2000). Stemmed projectiles are frequently associated with leaf-shaped bifaces, bifacial crescents, distinctive well-formed unifaces, and a variety of simple flake tools and larger core/cobble tools often made from non-local toolstones. These points also often exhibit intensive wear and re-sharpening (Basgall 2000; Warren and Crabtree 1986).

Although a growing body of research has identified Lake Mojave sites in a wide range of habitats in the Mojave Desert (Basgall 1993; Basgall and Hall 1994; Basgall et al. 1988; Rosenthal et al. 2001; Sutton et al. 2007), these sites continue to be most concentrated in pluvial lake basins, near fossil springs, and along major river channels. The few, and notably sparse, Lake Mojave and Silver Lake archaeofaunal assemblages are dominated by small mammals and reptiles, although larger mammals (e.g., deer, sheep) are sometimes represented, or indeed more common (e.g., Basgall 1993). The presence of sparse milling gear at some sites also implies diets incorporating plant foods (Basgall 2000), but the extent to which plant foods were relied upon during the earliest time periods remains of interest (Elston et al. 2014).

Warren (1984), citing a preponderance of stemmed point assemblages on near-playa landforms, fosters the idea of a Western Pluvial Lakes Tradition, wherein Early Holocene hunter-gatherers are primarily thought to have resided around wetland environments adjacent to lake systems, and there dedicated much of their subsistence focus on artiodactyls. Basgall (2000) conversely hypothesizes that this spatial relationship is more a factor of landscape formation processes, such that exposure of ancient surfaces, and thus also the presence of ancient assemblages, is most probable in geomorphologically active contexts like those near now desiccated but still ephemeral lakes. Basgall (2000) does not reject the idea that Early Holocene hunter-gatherers inhabited basin wetlands, but rather posits that lake edges were among a variety of resource patches preferentially utilized over short intervals throughout successive generations, and perhaps over hundreds or thousands of years, resulting in palimpsest deposits.

Along these lines, Sutton et al. (2007) maintain that the unpredictable nature of Early Holocene environments prompted high residential mobility among Mojave Desert hunter-gatherers. Following this model, foragers needed to continuously monitor resource productivity among the diverse resource patches created by such instability to take optimal advantage on a patch-by-patch basis (Byrd et al. 2009:137). Goebel et al. (2011) likewise see evidence of high residential mobility among Early Holocene hunter-gatherers in the Great Basin, albeit based on data from only a few dated rockshelter components. This perspective does not, however, fully account for the vast numbers of undated stemmed point localities that may hint at a substantial local residential pattern in parts of the Great Basin (Duke 2011).

Basgall (2000) argues that stemmed point technology was largely curated. The diversity of raw materials incorporated into some Lake Mojave and Silver Lake assemblages, other than those in the Coso

Basin (Eerkens et al. 2007), certainly points to long distance travel or exchange, but it is equally apparent that Early Holocene hunter-gatherers often procured fine-grained volcanic (FGV) material from vein and pavement quarries for local uses (Byerly 2013; Byrd et al. 2009:128; Giambastiani 2010).

Middle Holocene (ca. 8200–4200 cal BP)

Pinto is the hallmark of Middle Holocene human occupation of the Mojave Desert and southern Great Basin, although the tradition clearly has its origins in the Early Holocene (Sutton et al. 2007). Recently, however, another Middle Holocene complex, Deadman Lake, was proposed by Sutton et al. (2007). This tradition is currently only recognized in certain parts of MCAGCC (i.e., the Emerson and Deadman lake basins) and is otherwise unknown in other parts of the Mojave Desert.

Pinto

The Pinto complex includes short, stemmed, indented-base, and split-stem projectiles. Dated components at Fort Irwin and MCAGCC range between 11,110 and 6030 cal BP, although assays most often fall between 9850 and 7750 cal BP (Byrd et al. 2009). Sparse other data imply that this complex may also extend to as late as 4500 cal BP (Byrd et al. 2009; Sutton et al. 2007:235). Obsidian hydration assays on projectiles from Fort Irwin and China Lake indicate temporal overlap with both Lake Mojave and Gypsum points, but mean micron ranges generally fall between these complexes (Byrd et al. 2011:53).

Pinto assemblages are characterized by somewhat reduced toolstone diversity and higher frequencies of milling gear (Byrd et al. 2009) than those from Lake Mojave and Silver Lake sites, perhaps reflecting more concentrated foraging ranges and implying greater exploitation of plant resources (Basgall 2000; Basgall and Hall 2000; Sutton et al. 2007). Basgall (2000) views regional Pinto settlement and resource exploitation patterns like those of Early Holocene hunter-gatherers (i.e., stable but seasonally mobile), interpreting the preponderance of expansive, multi-loci Pinto sites at Fort Irwin as evidence of persistent re-occupation of certain preferred plant resource patches in lowland basins. This contrasts with Warren's (1984) hypothesis that Pinto groups retreated to upland habitats and abandoned basin environments due to climatically induced resource restraints. Data from China Lake (Hildebrandt and Ruby 2003) that demonstrate Pinto dominance over other projectile forms (particularly Lake Mojave) in higher elevation settings support Warren's (1984) contention in that region. Whatever settlement-use systems best characterize Pinto patterns, it is probable that throughout the Middle Holocene, human diet breadth expanded to include more vegetal resources (e.g., seed grasses), perhaps in response to wide-scale, although certainly variable, aridification (Grayson 2011).

Nonetheless, recognizing components dating to this period in the Mojave Desert poses a challenge because few one-to-one correspondences between Pinto time markers and directly datable components exist. Indeed, Pinto series points are often shoehorned into this period but, as any number of researchers have pointed out, they regularly co-occur with older-dating stemmed series points throughout the Mojave Desert (Basgall 2000:130; Schroth 1994; Vaughn and Warren 1987). One site test excavated aboard MCAGCC on the southwestern margin of the Amboy Crater lava flow (i.e., CA-SBR-9415), for example, produced both Pinto and Stemmed points alongside a Lake Mojave-era radiocarbon date, while another (SBR-9421) also yielded Pinto and Stemmed points with obsidian bearing Pinto-era hydration rims (Basgall et al. 2002; Roberson and Byerly 2015). However, two others (SBR-9418 and SBR-9422) were found to have only Pinto projectile points with Pinto-era obsidian.

Late Holocene (ca. 4200 cal BP–Modern)

Higher degrees of effective moisture took hold over large portions of the Great Basin at the beginning of the Late Holocene (Wigand and Rhode 2002). This period is seen by many researchers working in California and the Great Basin as having been a cultural florescence with the first regular occupation of semi-sedentary villages and the development of settlement hierarchies, the rise of specialized obsidian production for inter-regional exchange, and a proliferation in the creation of rock art, especially in the Coso Range where the frequency of representational elements reached densities far greater than anywhere else in North America. Many residential deposits dating to the early Late Holocene contain more robust signatures of habitation than was the case earlier in time, including substantial midden development, house floors, human interments, and subsistence remains indicative of multiseason occupations (e.g., Rogers and Yohe 2014; Whitley et al. 1988; Yohe 1992).

The Late Holocene record of the Mojave Desert is often broken into three cultural periods, including Gypsum, Saratoga Springs, and Shoshonean (Warren 1984), although Sutton et al. (2007) prefer the labels Gypsum (ca. 3950–1750 cal BP), Rose Spring (ca. 1750–850 cal BP), and Late Prehistoric (ca. 850 cal BP-colonialization). Within this framework, Gypsum assemblages are associated with Gypsum, Elko, and/or Humboldt variant dart points; Saratoga Springs sites are marked by Rose Spring, Saratoga Spring, and Eastgate arrow points and pottery from or reminiscent of that from the Colorado River area; and Shoshonean assemblages include Desert Side-notched and Cottonwood arrow points as well as an array of locally and non-locally produced brownware pottery (Sutton et al. 2007; also see Schaefer and Daniels 2010).

Gypsum, Humboldt, and Elko

The Gypsum complex includes Gypsum, Humboldt, and Elko projectile points, and generally dates between approximately 4500 and 1400 cal BP (Byrd et al. 2009), although Humboldt and Elko forms have loose inter-regional temporal bounds that extend beyond this timeframe. This diversified Late Holocene complex represents a major shift in lithic technology. Whereas earlier traditions utilized a diversity of toolstones, including fine-grained volcanic, for projectile manufacture, Gypsum assemblages are dominated by cryptocrystalline silicates or quartzes (Byrd et al. 2009). Large pavement quarries at Fort Irwin, for example, were exploited to manufacture thin, transportable bifaces, and most off-quarry sites include high frequencies of almost exclusively biface-reduction and thinning debris. Although ground stone is occasionally included in these lithic scatters, little other activity is evidenced, fostering the idea among some researchers (e.g., Basgall 2000; Basgall and McGuire 1988) that Gypsum settlement-use systems were characterized by high residential mobility.

Byrd et al. (2009) alternatively argue that available lithic tool data from Fort Irwin point to high residential stability, with shifting emphasis on landscape use. They see this area as a hinterland in hunter-gatherer resource acquisition ranges that was only visited during long-distance forays (presumably to hunt artiodactyls) from larger residential bases to procure material and manufacture transportable bifaces for weapon production and/or trade. From this perspective, these areas were not otherwise extensively capitalized for other resources as intensively as earlier and later in the record. Inherent in this hunting model is male-centered show-off behavior for prestige, with food gathering at larger residential bases near resource-rich water sources (e.g., the Mojave River) off-setting the costs of this high-risk enterprise (Byrd et al. 2009; Hildebrandt and McGuire 2002; McGuire and Hildebrandt 2005).

Gypsum projectile points are well-shouldered and possess a contracting stem. Humboldt bifaces are lanceolate and un-shouldered and display a spectrum of basal morphologies ranging from slight indentations to deep concavities (Garfinkel and Yohe 2002). Ambiguities exist regarding the temporal span of the Humboldt form and its use, owing largely to a paucity of securely dated contexts. Among obsidian Humboldt bifaces from the Mono Basin, Owens and Rose valleys, and those sourced to the Coso Range, narrow-based (i.e., < 24 millimeters) forms appear to have been used primarily as dart points between approximately 5950 and 2450 cal BP. Basally wider varieties (i.e., 2 24 millimeters) are conversely thought to have been multi-purpose hunting and butchering tools, and tend to be in younger contexts (ca. 2450–1150 cal BP), although evidence for their continued use as projectiles (e.g., impact fractures) also exists (Garfinkel and Yohe 2002).

Elko projectiles found in the Mojave Desert typically include near-straight, slightly concave, and sometimes convex-based Elko Corner-notched forms, as well as distinctive Elko-Eared varieties, possessing concave bases with laterally flared basal projections. These points have been variably confined to between 3750 and 1250 cal BP (Bettinger and Taylor 1974) and 3500 and 1200 cal BP (Thomas 1981), although more recent obsidian hydration studies in Owens Valley and the Coso Basin suggest a greater antiquity.

Gilreath and Hildebrandt (1997) found distinctive temporal patterns associated with Elko projectile thickness at Coso. Those fewer than 6.5 millimeters in maximum thickness dated to between 3400 and 1600 cal BP, consistent with earlier estimates, while those with maximum thickness greater than or equal to 6.5 millimeters displayed wider hydration rim ranges overlapping with Pinto and Lake Mojave assays (Gilreath and Hildebrandt 1997). Larson (2009) likewise discovered wide micron ranges among the Elko projectiles collected from his work along the Owens River. These dated between 7500 and 3500 cal BP, averaging around 6100 cal BP, regardless of thickness (Larson 2009).

Saratoga Springs and Shoshonean

Small corner-notched Rose Spring and Eastgate-series points mark the Rose Spring or Saratoga Springs Period (ca. 1325–680 cal BP). These projectiles are thought to signal the incorporation of bow-and-arrow technology, attendant with shifts in hunter-gatherer adaptations coincident with changing climates (e.g., the MCA).

The first appearance of bow-and-arrow technology in the region is a topic of ongoing interest and debate (Yohe 1998). Age estimates, largely based on arrow fragments from a few variably well-dated rockshelter and cave deposits, range between roughly 5150 and 1230 cal BP (Yohe 1998). Yohe (1998) posits that bow-and-arrow technology was firmly rooted in the adaptive milieus of Mojave Desert hunter-gatherers by approximately 1480 cal BP, citing evidence from debitage analysis and obsidian hydration dating of artifacts from the Rose Spring type site. However, these data also indicate that large multi-purpose bifacial knives and thrusting implements (i.e., Humboldt bifaces) continued to be utilized until around 1350 cal BP. Yohe (1998) further maintains that atlatl technology may have likewise persisted until 450 cal BP, though other researchers do not subscribe to that position.

Madsen (1986) has argued that this innovation increased hunting efficiency, resulting in a depletion of large game within upland areas triggering a shift to pinyon exploitation, and indeed declines of bighorn sheep and other large game are observed at this time in regional faunal assemblages (Hildebrandt and McGuire 2002:238; McGuire et al. 2007:360). This potential over-exploitation of large game, particularly bighorn sheep, co-occurs with declines in Coso-style rock art occur at around 900 cal BP. More recently, Bettinger (2015) has identified the shift to bow-and-arrow as having a cascading effect that led to an increased reliance on pinyon, and ultimately to the privatization and storage of food, particularly pinyon and small seeds in the Owens Valley region. Bettinger demonstrates how the bow-and-arrow increased overall hunting efficiency and argues that the bow-and-arrow allowed hunters to individually acquire and distribute a shared public resource (meat) which, in turn, discouraged claims to the pinenut stores their wives had accumulated for private use. In this sense, a shift in hunting technology is intimately linked to the rise of intensive pinyon exploitation.

Ideas vary regarding how much of an impact Late Holocene drought had on the short- and long-term desert adaptations of hunter-gatherers in western North America, particularly during the MCA (Jones et al. 1999; cf. Basgall 1999; Bettinger 1999). Jones et al. (1999; also see Jones and Schwitalla 2008) argue that long-term and frequent drought episodes between roughly AD 600 and 1500 had dramatic effects on hunter-gatherer lifeways from coastal California to the Colorado Plateau. In the Mojave Desert, these effects included depressed utilization of local environments due to destabilization of biotic communities; forced congregation of hunter-gatherer populations around more stable, or at least climate resistant, water sources (e.g., Lake Cahuilla); and attendant competition for food resources (Jones et al. 1999). They, among others (Moratto 2012) see these shifts as critical factors in the apparent collapse of trans-Sierran obsidian conveyance systems after 675 cal BP (AD 1275). Basgall (1999), and to some degree Bettinger (1999), conversely think that MCA climatic fluctuations had little noticeable effect on the day-to-day operations of Late Holocene hunter-gatherers, and that apparent strategy shifts were related more to population growth and economic intensification (Jones and Schwitalla 2008).

It is nonetheless widely accepted that, whatever the root cause, the Saratoga Springs Period is characterized by resource intensification (Byrd et al. 2011), much of which was directed toward seed-processing. Regionally, milling gear is most prolific at sites post-dating 1300 cal BP, peaking after 650 cal BP, when it is assumed that artiodactyl population densities decreased enough due to overhunting and/or drought (e.g., Janetski 1997) to warrant a primary focus on plant resources (e.g., green-cone pinyon) and smaller game (Garfinkel 2007; Gilreath and Hildebrandt 1997). This intensification of subsistence economies may have included the incorporation of domesticates (e.g., corns, beans, and squash) and maintained wild species. However, these were likely confined to areas directly proximate to the Colorado or Mojave Rivers, and it is more probable that local intensification took the form of mesquite, pinyon, agave, tortoise, and lagomorph procurement and processing (Byrd et al. 2011).

After approximately 950 cal BP multiple groups, including Ancestral Puebloans from the Virgin and Muddy River areas in the east, Numic speakers from the western Mojave, and Patayan from the Colorado River variously occupied the Mojave Desert to exploit and trade its resources, including obsidian and turquoise, as well as shell beads acquired through exchange from the West Coast and Sea of Cortez (Byrd et al. 2011; Sutton et al. 2007). Diagnostic artifacts include small side- and sometimes basally notched projectiles labeled Desert Side-notched points, small un-notched triangular-shaped projectiles identified as Cottonwood points, and a variety of ceramics.

The nature of inter-group interaction is debated (Sutton et al. 2007:242), but it is clear that particular landscape features, such as springs, were preferentially utilized and incorporated into the traditional landscapes of multiple groups. Regional ceramics are typical of Patayan II-Patayan III phase (AD 1000 to >1900; ca. 950 cal BP–Contact) wares (e.g., Waters 1982) and reflect the various centers of production straddled by the southern Mojave Desert. Patayan wares are generally divided into two broad categories, Tizon Brownware and Lower Colorado Buffware, based primarily on differences in their compositional material. The former are dominant in the Peninsular ranges of southern California and in northwestern Arizona, and are manufactured with residual clays with high iron content. The latter are typical in the lower Colorado River area, Imperial and Coachella valleys, and along the old Lake Cahuilla shoreline where alluvial clays with low iron content are available (Hildebrand et al. 2002; Schaefer and Daniels 2010). Several intermediate variants or “hybrids” of brown/buffwares are also known and do not fit into established Patayan ceramic classification schemes due to considerable overlap in geographical occurrence, rim forms, intermediary clays, temper, inclusions, and surface treatment (see discussions in Hildebrand et al. 2002; Schaefer and Laylander 2007). Unfortunately, analysis of such wares often obscures, rather than clarifies, the typology by adding new categories, reusing names, and mixing typological layers such that the hierarchy of wares, series, and types is muddled (Griset 2013:5–7). However, while undecorated ceramics can be difficult to place within a temporal and spatial typology, petrographic and chemical analyses have proven to be viable alternative criteria to classify ceramics (e.g., Hildebrand et al. 2002; Schaefer and Daniels 2010). For example, although experimental studies indicate that clays from Emerson and Deadman lakes at MCAGCC are suitable to produce pottery of similar quality to Parker and Topoc Buffwares, the local clays lacked orthoclase feldspar, a mineral present in the Topoc Buff, Intermountain Brown, and Parker Buff sherds (Schaefer and Daniels 2010).

ETHNOHISTORY

This brief overview details basic ethnographic and ethnohistoric information for three southern California Native American groups (i.e., the Chemehuevi, Mojave, and Serrano,), the traditional territories of which (as delineated by Heizer 1978 and Ortiz 1983) are intersected by work areas related to L-300.

The L-300 project area crosses through desert habitat which formed the traditional homeland of the Serrano and Chemehuevi. It also comes into the very western edge of Mojave territory. For all three groups, primary habitation sites seem to be outside of the L-300 project area; however, the corridor passes through a variety of places that were likely used to obtain subsistence resources (e.g., springs, stands of rice grass, topographic features conducive for rabbit drives). The redundant use of these locations could create archaeological signatures and signal the importance of these places to Native Americans using the local area. Of greater importance may be the ceremonial areas such as the Old Woman Mountains, the crossing of the Salt Song Trail songscape between the Providence Mountains and Twentynine Palms, Amboy Crater, and other places or trails which may not be articulated in the ethnographic literature or historical maps.

Early Mojave Desert ethnographic records (i.e., those between 1776 and 1870) of indigenous cultures come from explorers, pioneers, and trappers who wrote historical accounts and early ethnographies of native cultures and lifeways (e.g., Francisco Garcés, John C. Fremont, and John Wesley Powell). Anthropologically oriented ethnography was mainly of the salvage kind undertaken by the University of California Berkeley and other academic anthropologists in the very late nineteenth and early twentieth centuries. These eventually resulted in several ethnographies (e.g., Benedict 1924, 1926; Kelly 1934; Laird 1976; Merriam 1968; Nelson 1891; Steward 1933). While somewhat systematic and the source of most of the available ethnographic information, this type of research has been criticized for the limited amount of time ethnographers spent in the field (in many cases only a few weeks), for its ethnocentric or at least etic bias, and for some of the errors this research has been found to contain. Many of these researchers also failed to publish the bulk of their findings; their notes comprise complementary sources to published research (e.g., Harrington 1986). For these reasons, the nature of Native American occupation of the central Mojave just before and after European contact is difficult to reconstruct (Park et al. 1938). Nonetheless, some more recent summaries are available, such as Sutton and Earle's (2017) overview of the Serrano.

Chemehuevi

The Chemehuevi and Southern Paiute people are linguistically and culturally related (Kelly and Fowler 1986; Kroeber 1925). The traditional territories of the Southern Paiutes extended across southern Utah and Nevada, northern Arizona, and down along the western side of the Colorado River to present-day Blythe, California (Figure 3). Kelly and Fowler (1986) listed at least 16 Southern Paiute groups or bands, which each had their own territories within these lands. Martineau (1992) recorded the names of 29 bands, many of which no longer exist. The Inter-Tribal Council of Nevada (ITCN 1976) listed 19 bands. According to Kelly (1934), the Las Vegas Band of Southern Paiute lived in a relatively large region bounded on the east by the Mojave Desert and Amargosa River in California and on the west by the Colorado River.

Prior to the early 1800s, the Chemehuevi lived in the area around Mt. Charleston, Nevada (Alley 1977; Coues 1900; Desert Research Institute 1996; Ives 1861; Stoffle and Dobyns 1983) and are also noted to have ranged among the Ivanpah, Providence, New York, Old Woman mountains of southeastern California and the deserts between (Earle 2005). After the 1820s some Chemehuevi would move west along the Mojave River, and eventually settle along the Colorado River. Kelly (1936:129) stated that the Chemehuevi considered themselves "a nineteenth-century offshoot of the Las Vegas (Nevada) band of Paiute," and

George Laird, a Chemehuevi elder, recognized social or cultural differences among those Chemehuevi that settled along the river and deserts and those that inhabited the uplands (Earle 2005).

Like other Numic tribes of the pre-colonial era, the Southern Paiutes were mobile hunters and gatherers and generally migrated on a seasonal basis within band territories. These annual cycles differed among bands based on environmental conditions (Kelly and Fowler 1986; Tom and Holt 2000). Some preferred to spend the winter at high elevations; others at the base of hills or in protected canyons. Some chose to live in caves; others lived in conical brush shelters called wickiups. In the summertime, many Southern Paiute families lived among the trees, under brush shades (Kelly and Fowler 1986). The favored semi-permanent campsites were at the bases of scarps or lower slopes near water sources and juniper stands (Kelly 1964). Southern Paiute house-types consisted of the wickiup, a dome-shaped structure made of posts and covered with grass and bark; a circular enclosure made of brush (*nuvipi*), and a rectangular shade consisting of a flat roof on posts (*avagan*). They also constructed sweat lodges (*nasa-kan*) that were smaller versions of the wickiup (Kelly 1964, 1976). The Chemehuevi and, to a lesser degree, the Las Vegas Band adopted many cultural traits of the Mojave people. For example, they sometimes built and lived in a modified version of a Mojave earth covered house (Kelly and Fowler 1986).

The plant gathering methods employed by the Southern Paiutes were primarily the same as those used by other Numic people. Tom and Holt (2000:124) called the Paiutes, "highly sophisticated botanists." They utilized an extensive variety of plants for food, medicine, and other household needs. Seeds, mostly from grasses, were gathered using a seed beater, parched using a flat parching tray, and stored in a conical container. Berries, including buffalo berries, choke cherries, currants, elder berries, gooseberries, raspberries, service berries, squaw berries, and strawberries, were either eaten fresh or dried and stored in a buckskin bag. Roots, like the sego root, were collected with a digging stick.

Other plants utilized for food by various Southern Paiutes include pine nuts, some cacti, agave, yucca fruit, cattail, tule, and mescal (Desert Research Institute 1996; Kelly 1964, 1976; Kelly and Fowler 1986; Tom and Holt 2000). As stated previously, the Southern Paiutes were hunters and gatherers; however, a few of the bands did practice a small amount of horticulture (Desert Research Institute 1996; Lockwood 1872; Lyle 1872; Steward 1938). The Chemehuevi and Las Vegas Band of Southern Paiute adopted the Mojave practice of floodplain farming, as well as the cultivation of associated crops (Kelly and Fowler 1986). Plants grown by the Southern Paiutes included corn, squash, pumpkins, cantaloupes, mush melons, watermelons, gourds, beans, sunflower, winter wheat, and devil's claw (Desert Research Institute 1996; Kelly and Fowler 1986). The Chemehuevi, unlike the Mojave did not eat fish, however (Laird 1984).

The Southern Paiute also utilized a wide variety of animals from "ants to deer" for food and other uses (Tom and Holt 2000). Around the time of European contact, hunting methods used by the Southern Paiutes were similar to those of other Numic people but were adapted to meet environmental conditions. They held organized drives to capture and kill rabbits, primarily for their pelts (Desert Research Institute 1996). Antelope drives did not appear to be shamanistic and were not held often (Kelly 1976). Mountain sheep were sometimes hunted by parties who ran the sheep into a cleft in a canyon or onto a promontory. The hunters used fire to drive the sheep. Occasionally they would run the mountain sheep off a bluff. Other animals hunted for food included bears, mountain lions, young coyotes, foxes, wildcats, porcupines, beavers, marmots, badgers, ground hogs, rock squirrels, prairie dogs, squirrels, chipmunks, woodrats, mice, gophers, ducks, flickers, mourning doves, sage hens, wild turkeys, quail, owls, eagles, bird eggs, lizards, snakes, locusts, ant larvae, and caterpillars (Desert Research Institute 1996; Kelly 1976; Kelly and Fowler 1986; Tom and Holt 2000).

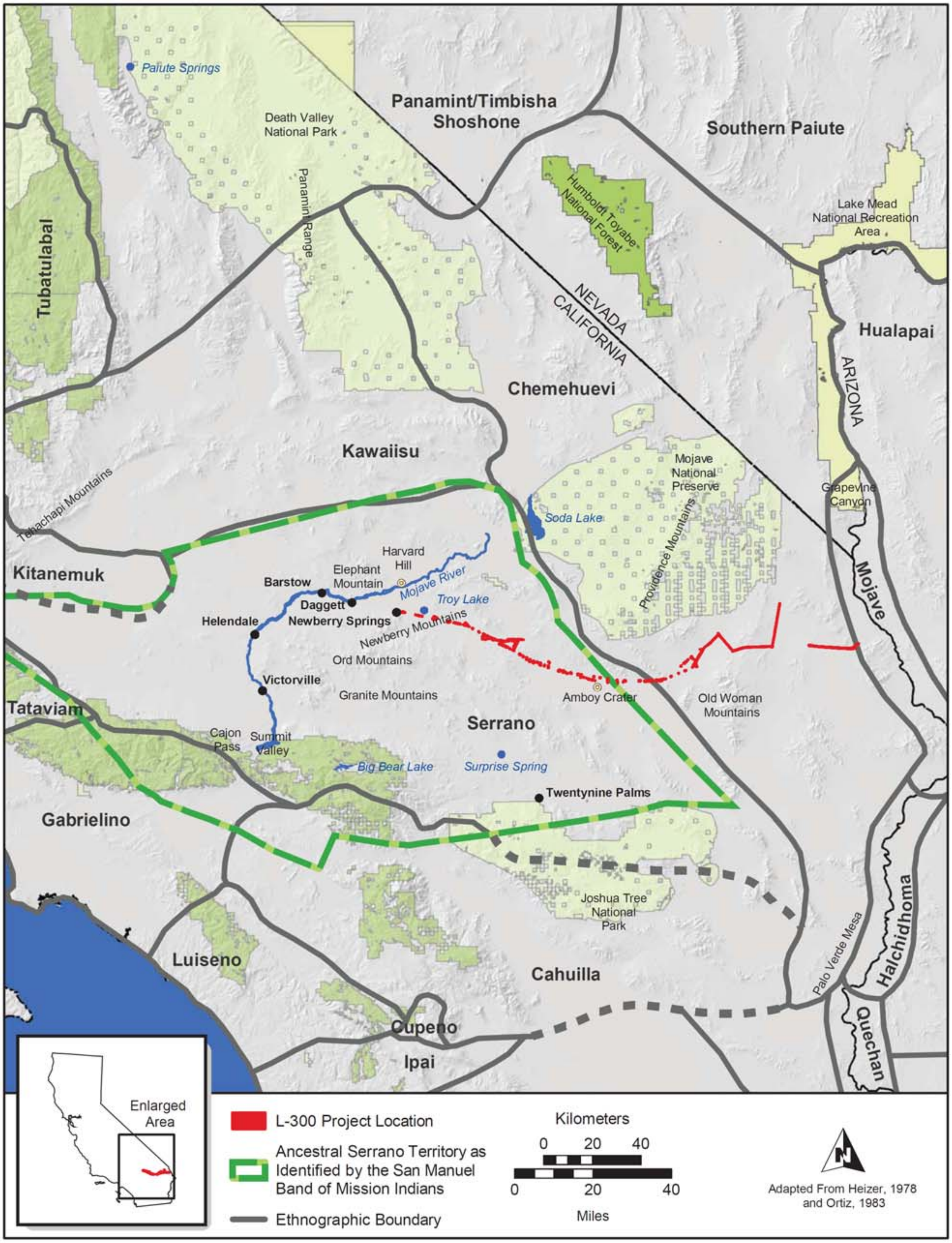

Figure 3. Location of Line 300 Relative to Major Ethnolinguistic Groups in Southern California.

Important Locations

According to Laird (1984:9), the Chemehuevi practiced a form of land "ownership" (not to be confused with the Euro-American concept) rooted in the inheritance of songs or variations of songs, which defined kinship and specific landmarks in hunting territories or along trails (e.g., the Mountain Sheep Song, Deer Song, and Salt Song; also see Baksh and Hilliard 2005:50). Laird (1984:38) further notes that some songs, especially those of shamans, were acquired at sacred caves, two prominent examples of which were in Arizona and Nevada. Food caches, violations of which are memorialized in at least one story, were also housed in caves or otherwise buried (Laird 1984:6). The Salt Song and other important songs continue to be an important part of Chemehuevi cultural practices. Klasky (2009) discusses the importance of these rituals and includes photos of singers at a gathering at the Old Woman Mountains Preserve – just south of the L-300 project area.

Nëvagante, or Snow Having (likely Mount Charleston, Nevada), is the storied home of Coyote, and important in Chemehuevi and Southern Paiute cosmology (Laird 1976; Trafzer et al. 1997). The entirety of the Panamint Range, or the Storied Land, is also considered sacred among the Chemehuevi (Baksh and Hilliard 2005; Laird 1984), as is Mount Newberry, Nevada (Spirit Mountain). Bean et al. (1978) further note that Palo Verde Mesa is important to the Chemehuevi, as it incorporates various plants and small animals as well as habitation sites, trails, and graves. Baksh and Hilliard (2005:73) reference one Chemehuevi interviewee who mentions a song related to a mountain at Twentynine Palms (i.e., MCAGCC), although which one is not specified. A prominent petroglyph site (SBR-15458) is situated within a narrow canyon that extends from the western base of Argos Mountain aboard MCAGCC (Byerly 2013), and although such resources have no specifically referenced importance among the Chemehuevi, they may have such in terms of associated trails and travel songs (Bean et al. 1978).

Mojave

The Yuman people, including the Mojave, have lived in the Colorado River corridor since at least the eleventh or twelfth century (Rogers 1945; Schroeder 1952; Stewart 1983). According to Stewart (1983), the aboriginal territory of the Mojave extended along both sides of the Colorado River in sprawling settlements from the northern end of Lake Mojave south to Needles. The easternmost portion of the L-300 project area is within the very western edge of Mojave territory (see Figure 2).

AECOM (2013) and Stewart (1983; also Kroeber 1925) summarize Mojave creation myths, of which aspects are also touched upon by Baksh and Hilliard (2005) and Deur and Confer (2012). In the First Days there was only Sky and Earth, who conceived a son, *Mataví-lya*, when Sky rained on Earth. *Mataví-lya* created the first people, who took the form of animals but acted as humans later would, and also built the Great Dark House, where Mojave dreamers would later receive power. *Mataví-lya* created lands on earth and two children from his own body, including a daughter *Kathena*, or Frog Woman (also Queen of the Sky), and a son, *Mastamhó*. *Kathena* bewitched and killed *Mataví-lya* for an offense, but before he died he transferred responsibility of creating remaining lands and caring for and teaching human beings to *Mastamhó*. *Mastamhó* created the Colorado River and the sacred mountain *1avìkwa1amé* (i.e., Spirit, Dead, or Newberry Mountain) from which *Mastamhó* asked the people to shout the Sun and Moon into existence and where unborn souls received their dreams. After creating corn, tobacco, and mesquite, and teaching people rituals and the proper way to organize social relationships, *Mastamhó* traveled to the banks of the Colorado River and transformed himself into a fish eagle (i.e., bald eagle).

Along the Colorado River, Mojave houses were usually located "on low rises above the floodplain" (Stewart 1983:57). According to Stewart (1983:57), Mojave house types included "flat-topped, open-sided ramadas (shades)" and "sand-covered houses" that were "low and rectangular" in floor plan. The open-sided structures were used during the warmer months and the sand-covered dwellings were winter homes. The winter structures were constructed from four large cottonwood posts supporting a sloping roof of poles. The roof was covered with a thatch of arrowweed. The sides and ends of the house, consisting of vertical poles, were also sloping. A layer of sand and earth or river mud several inches in thickness was piled over the exterior of the house (Kroeber 1925).

The Mojave people depended on farming for subsistence. They grew corn, tepary beans, pumpkins, and melons (Castetter and Bell 1951; Stewart 1965, 1983), of which corn was the principle crop. For Mojave families, merely clearing the ground and planting crops could appropriate fields, rarely more than an acre or two in size. Men cleared the land. Women assisted with the planting and cultivation and did most of the harvesting. Silt deposited by the river during the annual overflows fertilized the fields (Stewart 1983).

The Mojave supplemented these foods with gathering wild plants, fishing in the Colorado River, and some hunting. These activities became much more important in years when a bad harvest occurred. The women collected a variety of wild seeds, cactus fruits, mesquite, screwbean (tornillo), and other desert plants (Stewart 1965). The most important source of protein for the Mojave was fish (Stewart 1957; Wallace 1955). The Mojave used dip nets, dragnets, traps, and large, canoe-shaped basketry scoops with long handles to catch fish in the river, sloughs, and ponds. Hunting occurred less frequently primarily in the form of occasional rabbit drives (Stewart 1947).

Important Locations

Interviews conducted by Baksh and Hilliard (2005:73–76) point to several localities of significance to the Mojave, including Amboy Crater, California; Grapevine Canyon, Nevada; Mitchell Caverns, California; Mount Newberry (Spirit Mountain or Dead Mountain); Paiute Springs, California; and Tehachapi Mountain, California. Each of these places are incorporated into traditional inherited songs that form part of the Mojave cultural songscape. *ˀAvìkwaˀamé* is particularly significant as the place where spirits dwell and the source of dreams (Kroeber 1925). Various petroglyph sites (e.g., Foxtrot), trails (e.g., the Mojave Trail), and springs (e.g., Newberry and Surprise springs) are also culturally important.

Serrano

The Desert Serrano lived along the Mojave River, largely occupying a territory roughly stretching some 150 miles from the Providence Mountains in the east, to the area around Dagget or Barstow to the west, bounded to the south by the area surrounding Victorville (Bean and Smith 1978; Kroeber 1925). The Mountain Serrano, as implied by their Spanish name which means mountaineer or highlander, were a largely upland dwelling group that inhabited the San Bernardino Mountain region (Bean and Smith 1978). All told, however, Serrano ancestral territory stretched from the eastern reaches of Antelope Valley to Cadiz Valley (west-to-east), and from the Tiefort Mountain to just north of the San Jacinto Mountains (north-to-south; see back to Figure 1). Although culturally related, the Desert Serrano, about whom ethnographic data are comparably limited and often contradictory, and Mountain Serrano maintained different relationships with neighboring groups (e.g., the Mojave and Chemehuevi; Sutton and Earle 2017:3).

The Serrano practiced a shamanic religion, as among most southern California groups (Bean and Smith 1978; Benedict 1924; Strong 1929). Shamans, or *hʷö·mč*, acquired power through dreams, to which they were psychically pre-disposed and encouraged by ingesting sacred datura (i.e., western Jimson weed). This plant was also ingested by boys during puberty ceremonies, conducted in secret locations overseen by the *pa'xa*, who served as assistants to the *ki'kaˀ*. The boys would receive important and clairvoyant dreams through use of the hallucinogen, which would be interpreted by *hʷö·mč* (Baksh and Hilliard 2005).

The Serrano cremated people and their possessions upon death, within a year of which (typically a week to month after) a memorial (i.e., *mamakwot*) sponsored by the bereaved was held where additional possessions were burned, and songs and dances conducted (Baksh and Hilliard 2005; Benedict 1924; Earle

2003). Week-long morning ceremonies were also held annually involving gift giving, naming, and ritual eagle killing. Strong (1929) also posits that the Serrano shifted their burial practices toward interment after Spanish contact (Earle 2003).

Serrano settlement patterns were seasonally geared towards fluctuating resource availability, but settlements were centered around water sources. Family dwellings were domed, willow-framed structures thatched with tule, although most sheltered activities occurred under less formal ramadas, which were four-pole supported structures also thatched with tule (Bean and Smith 1978; Benedict 1924; Drucker 1937; Kroeber 1925). Villages (ca. 40–80 individuals) incorporated large ceremonial houses where lineage or clan leaders (i.e., *ki'ka*ˀ) lived (Earle 2003). Winter villages among the Serrano were situated in lowland canyons and foothills, while summer villages were established in the uplands (Earle 2003).

Hunting and gathering were the traditional subsistence bases of the Serrano, with men pursuing hunting and fishing and women gathering and occasional fishing (Bean and Smith 1978). The desert-dwelling Serrano gathered yucca root, mesquite, and cactus fruits, and would travel annually to the foothills to collect nuts and trade with upland Serrano for acorns and pinyon nuts (Bean and Smith 1978; Benedict 1924; Drucker 1937; Kroeber 1925; Strong 1929). Chia seeds and Indian rice grass were also utilized. Game meat from deer, mountain sheep, antelope, rabbits, other small rodents, and quail was baked or boiled and occasionally sun-dried for storage. Deer and rabbit hunting was largely communal, and frequently occurred during annual mourning ceremonies, with meat mostly shared equally among participants (Bean and Smith 1978; Fowler 1986).

Important Locations

An early nineteenth-century missionary, Father Pascual Nuez, identified several Serrano villages along the Mojave River, including *Atongaibit*, *Topipabit*, *Cocama*, and *Sisugenat* southwest of Barstow, California, as well as *Angayaba*, *Asambeat*, and *Guanachique* east of Barstow (Earle 2003, 2005; also see Merriam 1968). Earle (2003) notes that *Angayaba* was east of Daggett, California, and in the vicinity of the latter Nuez referenced a prominent millingstone quarry at Elephant Mountain near Forks-of-the-Road or Camp Cady (Walker 1986). *Asambeat*, on the lower Mojave River, was in a well-watered place farther east of *Angayaba*, and *Guanachique*, a water hole dug in sand, was probably near Soda Lake (Earle 2003). Nuez also mentioned a mountain called *Hamuha* or *Ahamoha* near Daggett (either just to the west or north), that was the birth place of *Moha*. The area of Daggett also housed a prominent salt deposit known among the Mojave as *Yava'avi-ath'I* (Earle 2003). Earle (2003) further mentions other regional village locations noted by Bean and Vane (1981) and Walker (1986), including *Topipabit* (north of Victorville), *Cacumeat* (near Bryman-La Delta or Helendale), *Sisugenat* (around Helendale-Hodge), *Kaiuvit* (on Deep Creek), *Najayabit* (possibly near Summit Valley), and *Tameobit* (at Rock Springs).

As further summarized by Earle (2003), Harrington (1986) referenced several Serrano clan territories, including *Wapeat*, a juniper-rich area, stretching east of Cajon Pass to Baldy Mesa; *Nakaviat* around the Upper Narrows region of modern Victorville, known for its abundance of carrizo; the hills northeast of Victorville comprise *Pat Kaits* (Mountain Sheep Mountain); and *Maviat*, the wooded stretch between Barstow and Victorville. The Newberry, Granite, and Ord mountains, along with the hills and valleys east along the upper Mojave River were collectively referred to as *Temtak*. Big Bear Lake is also an important location (Earle 2003). According to the Cultural Resource Manager (CRM) for the San Manuel Band of Mission Indians, broader cultural landscapes around Newberry Springs, Troy Lake, Ord Mountain, and Harvard Hill are also considered archaeologically sensitive.

MOJAVE DESERT HISTORY

Project areas were traversed by Native American trails that were eventually exploited by early Spanish and American explorers, and ultimately incorporated into a network of overland routes that supported migration of non-native settlers to California. Toward the end of the twentieth century, the study areas were transformed via railroads connecting California to the rest of the country. This connection spurred the growth of mining, water and energy development, trade and commerce, and transformed small railroad sidings into growing communities.

From the early to mid-twentieth century, the Mojave Desert changed shape as many of the early mining ventures and associated settlements died out. Despite changing fortunes, secondary transportation routes were incorporated into a federally and state-sponsored highway system that catered to an increasingly motorized public. This beget the age of the automobile that created a network of roadside businesses and scenic areas for recreational travelers. During and following the United States' involvement in World War II places within and adjacent to the study area provided a venue for weapons testing, advancement in aviation, training, and mobilization. In recent decades, the region has been adopted by the alternative energy industry, adapting once again to the changing economy. Formally perceived as a wasteland, the Mojave Desert is now recognized as a national resource for its dramatic environment, rich history, and connection to open-road travel and recreation. While not every venture in the Mojave Desert has survived or was successful, many have nonetheless made it into the history books or have left their mark on the desert landscape.

The following sections derive entirely from Higgins et al. (2013) and Ugan and Rosenthal (2013), with minor modification and augmentation. The historical information in that report borrowed heavily from Stickel and Weinman-Roberts (1980) and King and Casebier (1981) who provided thorough historical contexts for cultural resources of the Mojave Desert. Additional sources are cited throughout. Data presented in Chapter 4, further enhance knowledge regarding regional history.

Early Exploration

The first documented non-native travelers of ancient Native American trails were Spanish explorers seeking an overland route to connect their colonial outposts in New Mexico and California. Raids emanating from the Mojave region plagued the California missions and in 1810 it was reported that one Spanish corporal led 14 expeditions against local Indians, some of which played out in the desert. Following Mexican independence and the secularization of the missions, a party of American fur trappers documented their overland adventure that began in 1822 from Mississippi. The leader, Jedediah Strong Smith, kept a diary and documented his entry into the Mojave Desert in 1826. Native guides took him to the Mojave Trail where he continued to San Gabriel Mission. Mojave Trail provided the earliest access route to California via the Mojave Desert. The route coursed from Prescott, Arizona to the Los Angeles area and was the route that Mohave Indians led Francisco Garcés on during his expedition for the Spanish crown kin 1776 to find a way to move subjects to coastal California. This route would eventually lay the foundation for ox trails and wagon roads.

Other parties followed Smiths trail into the Mojave Desert and interests in New Mexico recognized the possibilities for trade. A merchant named Antonio Armijo is credited with taking the first caravan of pack animals across the Mojave in 1830, blazing what would become known as the Spanish Trail which provided a trade route between Santa Fe, New Mexico and Los Angeles, California. During the 1840s many Americans moved out west and many followed the Spanish Trail through the Mojave.

Transportation

The development of the Mojave Desert is inextricably linked to the evolving transportation networks that began with Native American Indian trails that transformed into overland routes for Americans heading west. Following the conclusion of the war with Mexico in 1847, California came under United States jurisdiction. The next year gold was discovered along the American River and the California Gold Rush was underway. It was during this turning point in California history that the territory was recognized as a valuable addition to the Union and providing reliable transportation to the gold fields became a priority. An effort was made at this time to identify all trails to California to facilitate movement of people and goods, and to provide defense of the new territory. The following section highlights the major modes of transportation that evolved throughout the region including wagon travel, major railroad lines, and finally, state routes and highways.

Wagon Roads

During the late-1850s wagon traffic increased dramatically and mule-drawn freight trains between Los Angeles and Salt Lake City coursed over the western Mojave Desert via Cajon Pass. Conflict between the wagon trains and Native Americans was not uncommon and by 1859 Fort Mohave was established near the border of California to provide security to wagon travelers. At this time, the military improved the Mojave Road for wagon travel and established outposts along this route. A wagon road running from Kramer to Randsburg first appeared on mining maps in the 1890s and continued to be depicted on maps into the 1940s. This historic-era road was an early miner's trail that was likely used as a small-scale freight route between mining districts. Other notable early routes in the area include Brown's Road, and the Midland Trail.

Railroads

The years following the Gold Rush lead to a national dialogue and debate over construction of a pacific branch of the railroad. Congress ultimately directed the army to use topographical engineers to explore possible routes and identify the most practical. Survey crews subsequently entered the region. Two of these crews were under the direction of Lt. Amiel Weeks Whipple and Lt. Robert Stockton Williamson. Francis Xavier Aubry led an independent reconnaissance of the Mojave region in 1853 during trips from New Mexico to California.

On July 1, 1869, President Abraham Lincoln signed a railroad bill that authorized the funds to build a railroad to the Pacific Coast. This act came to fruition when the rails of the Central Pacific and the Union Pacific met at Promontory, Utah in May 1869. This major event in US transportation history brought to together the "Big Four"—Collis Huntington, Mark Hopkins, Charles Crocker, and Leland Stanford—who emerged as the most notable railroad entrepreneurs in the west.

The completion and success of the transcontinental railroad in 1869 led to a race to build a similar route across the southern United States. In a bid to beat the Atlantic & Pacific Railroad to the Colorado River at Needles, the Southern Pacific Railroad Company (SPRR) laid track across the eastern Mojave from Barstow to Needles. The SPRR hired many of the Chinese laborers who built the transcontinental, knowing they were getting experienced and tireless workers who knew how to build a railroad. These Chinese workers began building the route across the desert, entering the Mohave around Lavic and Bagdad in 1882. By November 1882 the siding at Lavic was completed. They reached Needles in 1883, completing the transcontinental railroad through the south. Eventually the SPRR merged their tracks across with desert with the Atchison, Topeka, and Santa Fe Railway (AT&SF), and later the Burlington Northern-Santa Fe Railroad Company, who still operates the rails today (Heath 1927; Schaefer and Duffield-Stoll 1996:16).

Following a system perfected through four years of building the transcontinental, Chinese workers were hired through a labor contractor. Each camp contained about 12–30 workers and were charged with independent tasks. One group, for example, prepared the grade by breaking up rocks, shoveling dirt to form cuts, or piling up soil when elevation was needed. Another group may have laid track and moved iron, while another followed behind, pounding in spikes and finishing up the grade. The workers were adept at blasting through rock and building tunnels, as well as laying the grade (Maniery et al. 2016).

In the desert, workers were housed in tents, clustered together along the route. Camps were portable, moving every day or two and keeping pace with the speed of the work. The workers found that digging shallow trenches in the sand allowed them to burrow into the cool earth at night, making it easier to sleep. Food stuffs from China were available and camps usually had a Chinese cook who prepared traditional meals and served tea to the workers during the day. Chinese camps are often defined by the stoneware vessels, imported from China that contained pickled or dried vegetables, sauces, liquor, vinegar, and other goods (Maniery et al. 2016). Opium was often used to ease aching muscles after a long day's work and evidence of opiate use is a common find on railroad camp sites. Coins were used as money, worn on cords around the neck for good luck, or used in gaming. Many coins are stamped with Dynasty marks representing the Reign of favored emperors, although they were produced centuries after the reign ended.

In the early 1880s, the tracks of the Southern Pacific Railroad, owned by the Big Four, met the tracks of the Atlantic and Pacific at Needles. By this time, Southern Pacific had monopolized freight and travel in California and had a web of railroads throughout the state. In direct competition AT&SF planned for a new railroad to California and ultimately purchased half the stocks of the Atlantic and Pacific. Instead of constructing their own line, AT&SF funded the completion of Atlantic and Pacific's line to the California border at Needles. In August 1884, many were surprised when in the AT&SF managed to purchase the 242 miles of track from Southern Pacific between Mojave and Needles. The AT&SF continued to extend their line by adding new track between Waterman's Junction (Barstow) and Box Canyon near Los Angeles where it eventually connected to San Diego. Originally a single-track line, a second track was added in 1923.

Another railroad in the study area, coursing to the north from Daggett, includes the Union Pacific Railroad which is part of the San Pedro-Los Angeles & Salt Lake Railroad, constructed in the early years of the twentieth century. The railroad became the fourth means of transcontinental rail transportation into Southern California and linked the western states of Utah, Nevada, and California. It was also the major transportation medium for mining operations in the eastern Mojave. Lastly, at the western end of the 300A/B study area is the Lone Pine Branch or "Jawbone Line" of the Union Pacific, which was constructed in 1910 to aid in the construction of the Los Angeles Aqueduct.

Telegraph Lines

Samuel Morse patented the telegraph in 1937 and by 1850 small telegraph companies were present through the east. Western Union Telegraph Company was founded in 1851 and immediately set out to form cooperative agreements with railroad companies. The company cemented their place in railroad operations in 1860, when the Pacific Telegraph Act of 1860 was passed and Western Union won the contract to build and operate the first transcontinental line; eventually the line would follow the route of the transcontinental railroad (Boehle 2010).

In a very short amount of time telegraphs became an essential element of railroading. The telegraph provided a means to transmit messages faster than trains moved, allowing communication on arrival and departures, delays in scheduling, and changes in train movement. Most stations or sidings had a telegrapher who maintained communication between despatchers and trains. The telegraphers wore several hats, working for the railroad, handling commissions and other business for Western Union, and the Railway Express. The telegraph company maintained the line, replacing poles and insulators as needed (Boehle 2010).

The industry began to change in the early 1900s, when Alexander Graham Bell invented the telephone. By 1913 AT&T purchased Western Union and began placing telephone lines alongside the telegraph lines. For several decades, the two technologies flourished side by side. The Great Depression of the 1930s, combined with the invention of the teletypewriter in 1931 signaled the demise of the telegraph. After world War II telephones became common place and the was easier and faster to use. In addition, the cost of a telephone call was half the price of sending a 10-word telegraph message. In 1988 Western Union divested itself of its telegraph infrastructure and focused on money orders. Today, a telegram is still available, at a cost of nearly $10.00 for 250 words (Nonnenmacher 2018).

State Routes and Highways

At the end of the nineteenth century, support for a state system of roads out west was over-shadowed by the railroad and road construction was not a priority. Perhaps surprisingly, it was early bicycle associations that started the push for road and highway construction in the 1890s and it wasn't until motor driven vehicles became more popular at the turn of the century that support for road building became a priority. The first automobile in the United States was built in 1893; however, it wasn't until the introduction of Ford's Model T in 1908 that the automobile become accessible to the average citizen (Bischoff 2005).

As automobile ownership increased, it became apparent that there were very few places that accommodated vehicle travel. There were no national roads, maps or signs, and the existing local road networks were typically not suitable for automobile travel. As road engineering became a national priority, new road surfaces were developed to improve auto-travel. In 1916, the Federal Aid Road Act provided $75 million for federal assistance in the construction of surfaced rural roads throughout the country and during World War I, the national demand for reliable transportation exposed the deficiencies in railroad travel. As trucks emerged as a reliable shipping method, closer attention was given to highway planning and construction. In 1921, an amendment to the Federal Aid Road Act was passed which required each state to designate their primary roads for inclusion in a state highway system; these roads would ultimately receive federal money for construction and improvement. In the Mojave Desert, road travel became popular and several documents were published regarding vehicle travel and reliable watering stops for desert travelers.

National Old Trails Highway/Route 66

Beginning as early as 1910, plans were developed for the establishment of an ocean-to-ocean motor highway to be called the National Old Trails Highway, that was based on pre-existing major east-west wagon trails. In 1913, a route from Needles to Barstow and San Bernardino was approved as a segment of the system and at that time became the best route across the Mojave Desert. This highway, later named Route 66, was a dirt and gravel road in the 1910s, although it carried a surprisingly heavy volume of traffic. It was one of the first transcontinental roads to be marked consistently with signs. Towns with food facilities, service stations, and lodging accommodations grew along the highway. In the L-300 study area these locales included (east to west) Cadiz Summit, Chambless, Amboy, Bagdad, Ludlow, Newberry Springs, Daggett, Nebo, Barstow, and Lenwood. In 1926, the route was dually designated as US Route 66 with the adoption of a national highway designations scheme. By 1928, most of the route between Daggett to Los Angeles was paved, but between 1929 and 1931, significant improvements were made to sections of the route that coursed through the desert, including the area around regional railroad sidings like Argos (San Bernardino Sun 1928). During this time, the highway took on most of its current alignment (Bischoff 2005).

The roadways around regional railroad sidings (e.g., Argos) changed in the late 1920s to early 1930s with the construction of what was known as the National Old Trails Highway, today known as Highway 66. The first work began in the fall of 1929, when a 14-mile-long link was graded and paved with oil-treated gravel from four miles west of Hector to a point two miles west of Argos. The work to build a stretch of desert-type roadway from Argos to a point one and a half-mile west of Siberia was awarded to the New Mexico Construction Company. Much of new road did not follow the old roadway in this area, partially to avoid dangerous curves and wash-outs (San Bernardino Sun 1928).

Travelers on Highway 66 relied on a handful of roadside stops for fuel, water, food, and rest. Their amenities typically included a gas station and café and occasionally housing for overnight stays. Many of them were documented in guidebooks prepared in the 1930s and 1940s. These included stops such as the

Mojave Water Camp. The Mojave Water Camp was constructed in the 1930s and created an oasis of sorts in the harsh landscape. It included a gas station selling Shell gasoline, an auto repair garage, a restaurant, and attractive little cabins for overnight stays. The little cluster of what were described as "sunbleached" buildings continued well into the 1940s, finally disappearing from maps by 1956.

As early as the 1950s, US Route 66 began to see a decline in use due to the Interstate Highway Act. The decreased use of US Route 66 in this portion of California resulted from increased use of Interstate 40 (I-40, constructed in 1947) and I-15 as alternate routes (Walters 2007). Roadside businesses, like Cadiz Summit, saw a decline in business and eventually closed their doors for good. In 1974, the official name of the highway was changed from US Route 66 to State Route 66. Recognizing the special importance of US Route 66 in the cultural consciousness of the American public, in 1995 the National Park Service (NPS) conducted a special resources study of the entire 2,400-mile corridor of historic US Route 66, in response to Public Law 102-400, the Route 66 Study Act of 1990. The study reached several conclusions, among them that US Route 66 had:

- Facilitated the most dramatic shift of US population from east to west since "the great Oregon migrations and California gold rush" of the nineteenth century;
- Played a major role in the transition of the American Southwest from territory to statehood;
- Provided work for thousands of unemployed men during the Depression, under the Civilian Conservation Corps and Works Progress Administration programs of Roosevelt's New Deal;
- Served as a route for emigrants moving west to escape the Dust Bowl;
- Helped to facilitate the single greatest wartime manpower mobilization in the history of the nation, from 1941 to 1945; and
- Gave rise to the American automobile tourism industry and the roadside motels, service stations, diners, and other services that were developed along the route.

US Route 66 also was made famous by the author John Steinbeck in his novel *The Grapes of Wrath*, where he called it America's "Mother Road," as well as by popular songs and a television series. According to the NPS study, historic US Route 66 "is revered by hundreds of thousands of motorists as the model of the modern American highway and the emerging automobile culture it serviced" (NPS 1995:11). A historical management plan was developed for the California corridor (Bischoff 2005) and should be consulted for additional information.

Mining

In addition to transportation, mining was closely connected with the development of the region and was by far the most important industry. Early mining ventures in the vicinity date as far back as the 1860s following the discovery of gold, silver, and borax. Swope and Gregory (2017) define three thematic episodes in the development of mining in the American West: Discovery and Early Mining Development, Growth and Zenith of Mining Activities, and the Decline and Resurgence of Mining Activities. They summarize important events, legislation, and technological developments that guided this industry, with special emphasis on the southern California deserts.

Gold and silver mining was largely developed in the 1880s and two mining districts were organized at this time: Calico and Grapevine. The discovery of silver in the Calico Mountains developed Daggett as a hub for the transportation of people and goods via the wagon roads and railroad station. These resources also proved useful to the mining of borax in the Calico Mountains beginning in 1883 (Myrick 1991). The Calico mines accounted for more than 80% of the total silver production in California between 1883 and 1885 (Keeling 1976; Schuiling 1984). But after 1885, silver mining declined when the price of silver dropped. Desert mining was so expensive that if the price of silver dropped below 65 cents an ounce, even the richest mines closed. In the 1890s, mining for gold surged and continued past the turn of the century. Metals mining emerged again during years of the Great Depression.

Borax Mining

According to Winkler (1905), the first borax made in the United States was marketed in 1864 in Lake County, California where 12 tons were made by evaporation of the water from Clear Lake. Borax was marketed in three forms: crude, refined borax, and boric acid. It had three main uses: as a preservative and medicine; for the manufacture of borax; and for use as a flux in glazing and enameling works.

Between 1883 and 1889, around 20 million pounds of borax ore was hauled out of Death Valley and transported 165 miles across the Mojave Desert by 100-foot-long, 20-mule teams. There were two main companies shipping borax through Daggett: the Pacific Coast Borax Company and the American Borax Company (originally the Columbia Mining and Chemical Company). The Pacific Coast Borax Company created a settlement called Borate in the Calico Mountains, which allowed miners to live near the mines. The Pacific Coast Borax Company was known for their 11-mile-long, narrow gauge railroad linking Borate and Daggett (Myrick 1991). The Columbia Mining and Chemical Company mines were located west of Calico and they were in operation for seven years before being bought. In addition to the mines, the company had a facility located at the northeast edge of Daggett. As a result, a fair number of employees lived in town.

According to Bailey (1902), the works in Daggett was operated by Dr. F. Howard Humphries. The plant consisted of boiling tanks, filter press, and evaporating and crystallizing tanks. The plant operated from some time prior to 1894 and continued for seven years until the company was acquired by the American Borax Works, an affiliate of the Standard Sanitary Co., in 1901. The operations were improved by the construction of a seven-mile, narrow-gauge railroad between the mine and the mill. By 1905, the American Borax Works was one of three companies that produced the bulk of borax and boric acid from borate of lime ores in the United States. The American Borax Works employed a process developed by H. Blumenberg, which employed a gas to free up the boric acid which was then leached out into solar evaporation vats. Once the pulp was concentrated, it was sent to crystallization vats where the cool nights caused the solution to form into crystals. The operations continued until 1907, when richer ores were discovered in Tick Canyon, near Los Angeles, and all operations were moved (Myrick 1963:826–827). In 1913, a rich borate deposit was discovered in the Kramer area, much closer to the Mojave railroad spur than Death Valley. By 1925, the Pacific Coast Borax Company (now known as US Borax) purchased most of this land and developed the Baker Mine, located about three miles north of Boron. The Town of Amargo was established around the mine and was renamed Boron in the early 1940s. Open-pit borate mining was implemented in 1955, and US Borax's mine, now known as the Rio Tinto Borax Mine, is still in operation today (Pratt 2009).

Settlement

Many of the earliest settlers in California used federal land disposal laws such as the Land Law of 1820, the Homestead Act of 1862, and the Stock Raising Homestead Act of 1916 to transfer federal land into private hands. Despite all the avenues available for patenting land, few chose to settle in this portion of the Mojave Desert in large part because of the lack of potable water, vegetation for grazing, or timber. Settlement was largely restricted to a narrow corridor along the railroad and in scattered mining towns. Not until the early part of the twentieth century did the region experienced an influx of homesteaders. By that time much of the usable agricultural land elsewhere in California had been taken up, and people looking to homestead were pushed farther and farther into marginal lands. In the mid-twentieth century, many settlers utilized the 1938 Small Tracts Act which allowed the federal government to dispose of parcels of undesignated public lands (no larger than five acres) by sale or lease to individuals. These small tracts, also referred to as "Jackrabbit Homesteads," could be used as a residence, for recreation, or for business (Stringfellow 2009).

Water Development/Transport

The reliable availability of water has always been central to human settlement in the Mojave Desert and early on, miners and mining companies needing reliable supplies of water developed springs and drilled wells, often piping water considerable distances. Many settlements in this region were positioned to take advantage of groundwater located within the Mojave River Valley where ground water could be exploited for the cultivation of grass hay to supply cattle and mules for freighting. Irrigation ditches were constructed to funnel water to these relatively small-scale agricultural enterprises beginning sometime in the 1870s. Claims for water rights were filed with the mining booms in the 1880s–1890s and agricultural development and settlement increased. Ranches sprung up east of Barstow, near Helendale and in Hinkley Valley and at this time several homesteads were filed. The introduction of the automobile in the early part of the twentieth century increased access to the desert and in the 1920s, the government erected monuments and sign posts at crossroads pointing the way to springs and wells fit for use. In 1921, Thompson published his *Routes to Desert Watering Places in the Mohave Desert Region, California* which recognized the need for desert travelers to have access to fresh water. Wells were typically located at major settlements, railroad, sidings, and roadside stops. In addition to localized wells, two major water delivery systems cross portions of the survey corridor and include the Daggett Ditch and the Los Angeles Aqueduct.

Military

Several United States military installations now occupy areas of the California Desert. In the eastern end of the L-300 study area, a temporary installation operated from 1942 to 1944 to train soldiers for the North African theater during World War II. It initially operated as the Desert Training Center until the name was changed to the California-Arizona Maneuver Area. To the west and south of this area, three major installations currently in operation include the Marine Corps Logistical Base (Barstow), MCAGCC, and Edwards Air Force Base. Fort Irwin is north of Barstow and the L-300 study area.

The Desert Training Center/California – Arizona Maneuver Area

A desert training area was conceptualized by Major General George S. Patton, Jr. of the United States Army after the United States entered World War II. Patton recognized that if the US was going to fight the enemy in North Africa, soldiers would have to train in a similar environment. At that time, maneuver areas were in Louisiana and the Carolinas, none of which provided a desert environment. By flight, Patton selected the area best suited to his needs and encompassed a large portion of the Mojave Desert from roughly east of Indio to the Colorado River, and from Yuma north to Searchlight. The facility opened in 1942 and operated under the guidance of Patton, explicitly outlined in his "*Notes on Tactics and Technique of Desert Warfare (Provisional)*." Several camps were set up throughout the maneuver area, 11 in California and three in Arizona, and some housed more than 1,500 soldiers. The camps were laid out in a rectangle, typically three miles long and one mile wide. Additional installations included railheads, hospitals, airfields, and supply depots. Given the lack of reliable water sources, Patton made a deal with Metropolitan Water District to acquire water from the Los Angeles Aqueduct and additional water supply points were established along the Colorado River (Bischoff 2000). Although the training area experienced some difficulties in the beginning, by 1943 it was operating like a theater of operations in a combat setting. The theater included a combat zone and a communication zone, supply points and other necessary installations were staged in areas that would most accurately capture an actual combat scenario. The installation was eventually closed in 1944 and the area was turned back over to private land owners and the Department of the Interior. For a complete discussion of this installation and associated archaeological resources, see Bischoff (2000).

Marine Corps Logistical Base (Barstow)

The Marine Corps Logistical Base was established on December 28, 1942, when the United States Navy turned it over to the Marine Corps. The installation was originally planned as a naval supply depot, but the Chief of Naval Operations directed the facility be transferred to the Marine Corps as a storage site for supplies and equipment for Fleet Marine Forces in the Pacific theater during World War II. It was then known as the Marine Corps Depot of Supplies and was under the military command of the Commanding General, Marine Corps Depot of Supplies in San Francisco. By the end of World War II, the depot had outgrown its original facilities, and in October 1946, a 2,000-acre holding and re-consignment point belonging to the Army was annexed by the depot; this became the Yermo-Annex. The base possesses the largest Department of Defense railhead in the world (California State Military Museum n.d.).

Marine Corps Air Ground Combat Center

The first military interest in what would eventually become MCAGCC was by the US Army Air Corps who established Condor Field, or Camp Condor, at Mesquite Lake (the current location of Mainside) in 1941 to train glider pilots (Ludwig 1989). The Air Corps became the Army Air Forces, and eventually the US Air Force later that year, but glider training continued to 1943, after which training focus shifted to powered aircraft. The US Navy established Naval Auxiliary Air Station Twentynine Palms at former Condor Field in 1944, and used the area as a bombing range until 1945 (Ludwig 1989), roughly contemporaneous with bombing training that occurred in nearby Johnson Valley as an extension of the Victorville Precision Bombing Range, for which at least one target is known in the Emerson Lake training area, and others are distributed within the newly established Bessemer Mine, Galway Lake, and Means Lake training areas. After World War II, the airfield and buildings were abandoned, and the land turned over to San Bernardino County until August 20, 1952, when the US Marines partitioned lands incorporating the old airfield and buildings, as well as lands encompassing the current extent of MCAGCC, as the Camp Detachment Marine Corps Training Center (Ludwig 1989). This name changed to the Marine Corps Training Center in 1953, and the area was ultimately designated the Marine Corps Air Ground Combat Center in 1979.

Energy Development

Until about 1880, energy development in the state was dominated by installations in the north that supplied northern California population centers. Over time the state's population would shift, and between 1880 and 1938, Los Angeles went from comprising only 10% of California's population to over half. Southern California would eventually become a main locale for energy development that included oil, electricity, and natural gas (Asmus 2009).

Arguably the most substantial energy-related features in the study area are the subject natural gas pipelines 300A/B constructed and operated by PG&E. Although natural gas was used in the United States as far back as the early nineteenth century, it was not until pipeline technology evolved in the 1920s, that natural gas was able to be transported over long distances. According to Castaneda (2004), there were two historical eras of rapid gas pipeline construction in the United States. The first lasted from 1928 to 1936 when long-distance gas lines were built from gas fields in the Texas Panhandle region to Midwestern markets and select southwestern markets. Lines 300A/B were constructed in the 1950s (Sakowicz 2013) during the second era of rapid gas pipeline construction in the United States. This era spanned the years from about 1943 to the mid-1950s when new lines extended from Gulf Coast-area gas fields to northeastern and southeastern markets. Additional lines were also constructed at this time from west Texas gas fields to the west (Castaneda 2004).

While there are no major electrical generating installations in the study area, several associated transmission lines, crisscross the survey corridors and include the "Tower Line" or Kramer-Victorville Transmission Line (installed 1911–1913), and the Barstow to Victorville 34.5kV Transmission Line (installed in 1918). Two additional lines that course through the study area are associated with the Hoover Dam project—the Hoover Dam to San Bernardino Transmission Line and the Boulder Transmission Lines 1, 2, and 3. The San Bernardino line was installed in 1930–1931 by the Southern Sierras Power Company and the Nevada-California Power Company to first transmit power for the construction of the dam before it was ultimately use to transmit power to other areas. The Boulder lines were built by the Los Angeles Department of Water and Power, Bureau of Power and Light, between 1933 and 1940 to transmit three-phase, 60-cycle electrical power from Hoover Dam, on the Colorado River between Arizona and Nevada. At the time of their construction, they set a new world standard for the long-distance transmission of electrical power (Powers 1993).

Today the Mojave region is becoming a major venue for the development of alternative energy, such as wind and solar, and thus continues to play a vital role in the ongoing history and legacy of California.

CHAPTER 4. RECORDS SEARCH AND LITERATURE REVIEW

Far Western completed records searches and literature reviews through the South Central Coastal Information Center (SCCIC) for the L-300 project areas. The record search area included resources documented and previous project reports within one-half mile of the edges of survey area buffer boundaries. Resource shapes and locations were digitized into a GIS, if not already available as such, augmenting existing recent record searches completed by Higgins et al. (2013; see Confidential Appendix C). We also reviewed historical topographic quadrangle maps and General Land Office (GLO) records to identify otherwise undocumented historic-era linear resources comprising proposed access roads, structures and other features that overlap the project area, and to aid in dating previously recorded and newly documented sites.

Records search data are summarized by project area in the following sections, focusing on non-isolate cultural resources, which are defined in the following sections. Of the 292 previously recorded sites within the records search area, a total of 90 are intersected by the L-300 APE (Table 4). Two of these sites (both historical) were newly recorded (i.e., SBR-31747) or updated/expanded (i.e., SBR-12999H) during a cultural resources inventory conducted in August 2017 but were not included in Far Western's winter 2017 records search as intersecting the APE. These resources were variably documented in one or more of 105 project reports, of which 37 are pertinent to the L-300 APE (Table 5).

Table 4. Records Search Results.

List No.	Trinomial (CA-SBR-)	Primary No. (P-36-)	In APE	Era	Type	Eligibility (APE Sites Only)
1	146	146	No	P	Limited Occupation	na
2	317/H/2107/2127H	317	No	M	Complex Occupation + Refuse Deposit	na
3	1505	1505	No	P	Pavement Quarry	na
4	1804	1804	Yes	P	Lithic Reduction Station	Unevaluated
5	1887	1887	No	P	Feature	na
6	1908/H	1908	Yes	M	Pavement Quarry + Refuse Deposit	Det. Eligible
7	2048	2048	No	P	Limited Occupation	na
8	2079/H	2079	No	M	Complex Occupation + Features	na
9	2084/H	2084	Yes	M	Campsite + Refuse Deposit	Unevaluated
10	2328/H	2328	Yes	M	Pavement Quarry	Rec. Eligible
11	2340H	2340	Yes	H	Railroad	Rec. Eligible
12	2640	2640	No	P	Limited Occupation	na
13	2792	2792	No	P	Pavement Quarry	na
14	2910H	2910	Yes	H	Road	Det. Eligible
15	3033/H	3033	No	M	Trail + Road	na
16	3037	3037	No	P	Campsite	na
17	3038/3050	3030/3050	No	P	Campsite	na
18	3076	3076	Yes	P	Campsite	Unevaluated
19	3271	3271	No	P	Pavement Quarry	na
20	3276H	3276	Yes	H	Community	Unevaluated
21	3277H	3277	Yes	H	Community	Unevaluated
22	3278H	3278	Yes	H	Railroad	Unevaluated
23	3279H	3279	No	H	Road	na
24	3284H	3284	Yes	H	Community	Rec. Ineligible
25	3288	3288	No	P	Complex Occupation	na
26	3496	3496	No	P	SRL	na
27	3519H	3519	No	H	Military	na

Table 4. Records Search Results *continued*.

LIST NO.	TRINOMIAL (CA-SBR-)	PRIMARY NO. (P-36-)	IN APE	ERA	TYPE	ELIGIBILITY (APE SITES ONLY)
28	3525H	3525	No	H	Work Camp	na
29	3530	3530	No	P	Lithic Reduction Station	na
30	3547H	3547	No	H	Refuse Deposit	na
31	3594H	3594	No	H	Community	na
32	3599H	3599	No	H	Mining	na
33	3602H	3602	No	H	Refuse Deposit	na
34	3725	3725	No	P	Pavement Quarry	na
35	4156/H	4156	No	M	Pavement Quarry + Refuse Deposit	na
36	4162H/7179H	7179	No	H	Refuse Deposit	na
37	4163	4163	No	P	Limited Occupation	na
38	4164	4164	No	P	Limited Occupation	na
39	4165H	4165	Yes	H	Railroad	Unevaluated
40	4307	4307	No	P	Campsite	na
41	4403H	4403	No	H	Military	na
42	4404H	4404	No	H	Railroad	na
43	4405H	4405	No	H	Railroad	na
44	4547	4547	No	P	Feature	na
45	4575	4575	No	P	Campsite	na
46	4681	4681	Yes	P	Pavement Quarry	Unevaluated
47	5055	5055	No	P	Campsite	na
48	5056	5056	No	P	Campsite	na
49	5598	5598	No	P	Pavement Quarry	na
50	5599	5599	No	P	Lithic Reduction Station	na
51	5600	5600	No	P	Campsite	na
52	5791	5791	No	P	Limited Occupation	na
53	5792/H	5792	No	M	Limited Occupation + Refuse Deposit	na
54	5793	5793	No	P	Limited Occupation	na
55	5794/13126/H	5794	Yes	M	Pavement Quarry + Refuse Deposit	Det. Ineligible
56	5795	5795	No	P	Campsite	na
57	5796	5796	No	P	Pavement Quarry	na
58	5797	5797	Yes	P	Pavement Quarry	Unevaluated
59	5798	5798	Yes	P	Pavement Quarry	Unevaluated
60	5799	5799	Yes	P	Pavement Quarry	Unevaluated
61	5800	5800	Yes	P	SRL	Unevaluated
62	5801	5801	Yes	P	Pavement Quarry	Unevaluated
63	5802	5802	No	P	SRL	na
64	5803	5803	No	P	SRL	na
65	5804	5804	No	P	Pavement Quarry	na
66	5805	5805	No	P	SRL	na
67	5806	5806	No	P	SRL	na
68	5807	5807	Yes	P	SRL	Unevaluated
69	5808	5808	Yes	P	SRL	Unevaluated
70	5809	5809	No	P	SRL	na
71	6404H	6404	Yes	H	Road	Unevaluated
72	6508H	6508	No	H	Mining	na
73	6511	6511	No	P	Campsite	na

Table 4. Records Search Results *continued*.

LIST NO.	TRINOMIAL (CA-SBR-)	PRIMARY NO. (P-36-)	IN APE	ERA	TYPE	ELIGIBILITY (APE SITES ONLY)
74	6512/6513	6512	No	P	Pavement Quarry	na
75	6514	6514	No	P	Campsite	na
76	6515	6515	Yes	P	Pavement Quarry	Det. Ineligible
77	6517	6517	No	P	SRL	na
78	6518	6518	No	P	Pavement Quarry	na
79	6519	6519	No	P	SRL	na
80	6520	6520	No	P	SRL	na
81	6521	6521	No	M	Pavement Quarry + Features	na
82	6522/H	6522	No	M	Campsite + Refuse Deposit	na
83	6523/H	6523	No	M	Mining + Core	na
84	6524	6524	No	P	SRL	na
85	6525	6525	No	P	SRL	na
86	6526	6526	No	P	Pavement Quarry	na
87	6527	6527	No	P	Campsite	na
88	6528	6528	No	P	Campsite	na
89	6529H	6529	No	H	Mining	na
90	6530H	6530	Yes	H	Railroad	Det. Ineligible
91	6693H	6693	Yes	H	Railroad	Det. Ineligible
92	6836	6836	No	P	SRL	na
93	6895	6895	No	P	SRL	na
94	6896	6896	No	P	Lithic Reduction Station	na
95	6897	6897	No	P	Lithic Reduction Station	na
96	6898	6898	No	P	Campsite	na
97	6954/H	6954	No	M	Campsite + Refuse Deposit	na
98	7115	7115	No	P	Lithic Reduction Station	na
99	7180H	7180	No	H	Refuse Deposit	na
100	7934	7934	No	P	Quarry	na
101	8920H	8920	Yes	H	Community	Unevaluated
102	8974H	8974	No	H	Work Camp	na
103	10636	10636	No	P	Lithic Reduction Station	na
104	10637	10637	Yes	P	Campsite	Unevaluated
105	10640/H	10640	No	M	Limited Occupation + Refuse Deposit	na
106	10641/H	10641	No	M	Lithic Reduction Station + Refuse Deposit	na
107	10642H	10642	No	H	Refuse Deposit	na
108	10649	10649	Yes	P	SRL	Unevaluated
109	10650H	10650	Yes	H	Refuse Deposit	Unevaluated
110	11583H	11583	Yes	H	Road	Unevaluated
111	11584H	11584	No	H	Road	na
112	11586H	11586	Yes	H	Road	Unevaluated
113	11998	11998	No	P	Pavement Quarry	na
114	12706	60/13879	No	P	nd	na
115	12862H	14170	No	H	Military	na
116	12863H	14172	No	H	Military	na
117	12864H	14173	No	H	Military	na
118	12918H	14405	Yes	H	Refuse Deposit	Unevaluated
119	12996H	14517	No	H	Refuse Deposit	na

Table 4. Records Search Results *continued*.

List No.	Trinomial (CA-SBR-)	Primary No. (P-36-)	In APE	Era	Type	Eligibility (APE Sites Only)
120	12927	14418	No	P	Campsite	na
121	12997/H	14518	No	M	Campsite + Refuse Deposit	na
122	12998	14521	No	P	Lithic Reduction Station	na
123	12999H	14522	Yes	H	Refuse Deposit	Rec. Ineligible
124	13000	14523	No	P	Lithic Reduction Station	na
125	13005	14528	No	P	Campsite	na
126	13008	14531	No	P	Pavement Quarry	na
127	13013	14536	No	P	Lithic Reduction Station	na
128	13025	14548	No	P	Pavement Quarry	na
129	13026	14549	No	P	Pavement Quarry	na
130	13027	14550	No	P	Pavement Quarry	na
131	13037	14560	No	P	Feature	na
132	13038/13040/H	14561	Yes	M	Pavement Quarry + Mining	Rec. Eligible
133	13041	14564	Yes	P	Pavement Quarry	Unevaluated
134	13045	14568	No	P	SRL	na
135	13051	14574	No	P	Lithic Reduction Station	na
136	13052	14575	No	P	Lithic Reduction Station	na
137	13055	14579	No	P	Campsite	na
138	13056	14580	No	P	Lithic Reduction Station	na
139	13058	14582	No	P	Lithic Reduction Station	na
140	13060	14584	No	P	Lithic Reduction Station	na
141	13061/13076	14585	No	P	Pavement Quarry	na
142	13062	14586	No	P	Pavement Quarry	na
143	13063	14587	No	P	Lithic Reduction Station	na
144	13064	14588	No	P	Pavement Quarry	na
145	13066/H	14590	No	M	Pavement Quarry + Refuse Deposit	na
146	13067	14591	No	P	Pavement Quarry	na
147	13068	14592	No	P	SRL	na
148	13069	14593	No	P	Lithic Reduction Station	na
149	13070	14594	No	P	Pavement Quarry	na
150	13083	14607	No	P	SRL	na
151	13084	14608	No	P	Pavement Quarry	na
152	13085	14609	No	P	Pavement Quarry	na
153	13086	14610	No	P	Lithic Reduction Station	na
154	13089	14613	No	P	Campsite	na
155	13091	14615	No	P	Pavement Quarry	na
156	13092	14616	No	P	Pavement Quarry	na
157	13093	14617	No	P	Pavement Quarry	na
158	13098	14622	No	P	Lithic Reduction Station	na
159	13099	14623	No	P	Pavement Quarry	na
160	13100	14624	No	P	Campsite	na
161	13101/H	14625	Yes	H	Refuse Deposit	Unevaluated
162	13102	14626	No	P	Lithic Reduction Station	na
163	13103/H	14627	Yes	M	Campsite	Unevaluated
164	13111	14635	No	P	Pavement Quarry	na
165	13114H	14875	Yes	H	Utility	Unevaluated

Table 4. Records Search Results *continued*.

LIST NO.	TRINOMIAL (CA-SBR-)	PRIMARY NO. (P-36-)	IN APE	ERA	TYPE	ELIGIBILITY (APE SITES ONLY)
166	13115H	14876	Yes	H	Utility	Unevaluated
167	13116H	14877	Yes	H	Utility	Unevaluated
168	13117H	14878	Yes	H	Utility	Rec. Eligible
169	13118H	14879	Yes	H	Road	Rec. Ineligible
170	13119H	14880	Yes	H	Road	Rec. Ineligible
171	13121	14882	No	P	Pavement Quarry	na
172	13123/H	14884	No	M	Lithic Reduction Station + Refuse Deposit	na
173	13124/H	14885	No	M	Lithic Reduction Station + Refuse Deposit	na
174	13125	14886	No	P	Lithic Reduction Station	na
175	13441	20862	No	P	Lithic Reduction Station	na
176	13445	20866	No	P	Pavement Quarry	na
177	13449	20872	Yes	M	Pavement Quarry + Refuse Deposit	Rec. Ineligible
178	13450	20873	No	P	Pavement Quarry	na
179	13577H	21053	No	H	Work Camp	na
180	13579H	21055	No	H	Military	na
181	13619H	21095	Yes	H	Road	Unevaluated
182	13757H	21406	No	H	Road	na
183	13758H	21412	No	H	Road	na
184	13759H	21413	No	H	Road	na
185	13760H	21414	No	H	Road	na
186	13761H	21415	No	H	Road	na
187	13762	21416	No	P	Lithic Reduction Station	na
188	13763	21417	No	P	Lithic Reduction Station	na
189	13764	21418	No	P	Lithic Reduction Station	na
190	13765/H	21427	No	M	Lithic Reduction Station + Refuse Deposit	na
191	13768	21435	Yes	P	Lithic Reduction Station	Rec. Ineligible
192	13769	21436	No	P	Pavement Quarry	na
193	13770	21438	No	P	Lithic Reduction Station	na
194	13784	21472	No	P	Pavement Quarry	na
195	13785H	21474	No	H	Refuse Deposit	na
196	14505	22776	No	P	Lithic Reduction Station	na
197	14506	22777	No	P	Pavement Quarry	na
198	14515	22786	No	P	Pavement Quarry	na
199	14467H	14467	No	H	Community	na
200	14817H	23478	No	H	Community	na
201	14822	23485	No	P	Lithic Reduction Station	na
202	14823	23486	No	P	Campsite	na
203	14824	23487	No	P	Feature	na
204	14825	23488	No	P	Lithic Reduction Station	na
205	14826	23489	No	P	Feature	na
206	14891	23577	No	P	Lithic Reduction Station	na
207	15107H	23919	No	H	Road	na
208	15114H	23926	Yes	H	Road	Unevaluated
209	15115H	23927	Yes	H	Road	Unevaluated
210	15439	24257	Yes	P	Campsite	Unevaluated
211	15440/H	24258	Yes	M	Campsite + Refuse Deposit	Unevaluated

Table 4. Records Search Results *continued*.

List No.	Trinomial (CA-SBR-)	Primary No. (P-36-)	In APE	Era	Type	Eligibility (APE Sites Only)
212	15441H	24259	No	H	Refuse Deposit	na
213	15442	24260	No	P	Feature	na
214	15443/H	24261	Yes	M	Lithic Reduction Station + Refuse Deposit	Unevaluated
215	15744H	24703	No	H	Refuse Deposit	na
216	15857H	24816	Yes	H	Utility	Unevaluated
217	15891H	24850	No	H	Road	na
218	15892H	24851	No	H	Benchmark	na
219	15893H	24852	No	H	Road	na
220	16182	25641	No	P	Pavement Quarry	na
221	16183	25642	No	P	Feature	na
222	16184	25643	No	P	Lithic Reduction Station	na
223	16185	25644	No	P	Pavement Quarry	na
224	16186/H	25645	No	M	Features + Refuse Deposit	na
225	16188	25647	No	P	Pavement Quarry	na
226	16189	25648	No	P	Campsite	na
227	16190H	25649	No	H	Refuse Deposit	na
228	16742H	26544	Yes	H	Road	Unevaluated
229	16759H	26457	Yes	H	Refuse Deposit	Unevaluated
230	16773	26488	Yes	P	Lithic Reduction Station	Unevaluated
231	16782	26514	Yes	P	Campsite	Unevaluated
232	16784H	26516	Yes	H	Refuse Deposit	Unevaluated
233	16785	26517	Yes	P	Lithic Reduction Station	Unevaluated
234	16786H	26520	Yes	H	Refuse Deposit	Unevaluated
235	16787H	26521	Yes	H	Refuse Deposit	Unevaluated
236	16808	26560	No	P	Feature	na
237	17101H	27086	Yes	H	Railroad	Unevaluated
238	17113	27112	No	P	Lithic Reduction Station	na
239	17114	27113	No	P	Lithic Reduction Station	na
240	29793	29793	No	P	SRL	na
241	29794H	29794	No	H	Refuse Deposit	na
242	29795H	29795	Yes	H	Refuse Deposit	Rec. Ineligible
243	29796H	29796	Yes	H	Refuse Deposit	Rec. Ineligible
244	29797H	29797	No	H	Refuse Deposit	na
245	29798H	29798	Yes	H	Refuse Deposit	Rec. Ineligible
246	29800	29800	No	P	Campsite	na
247	29801	29801	No	P	Lithic Reduction Station	na
248	29802	29802	No	P	Feature	na
249	29803	29803	No	P	Feature	na
250	29934/H	29934	No	M	Campsite + Refuse Deposit	na
251	29946H	29946	No	H	Refuse Deposit	na
252	29947/H	29947	No	M	Lithic Reduction Station + Refuse Deposit	na
253	29958	29958	No	P	SRL	na
254	29959H	29959	No	H	Refuse Deposit	na
255	29961H	29961	No	H	Refuse Deposit	na
256	29967H	29967	No	H	Refuse Deposit	na
257	31747H	31747	Yes	H	Refuse Deposit	Rec. Ineligible

Table 4. Records Search Results *continued*.

LIST NO.	TRINOMIAL (CA-SBR-)	PRIMARY NO. (P-36-)	IN APE	ERA	STANDARD TYPE (LTD)	ELIGIBILITY (APE SITES ONLY)
258	nd	13584	No	H	Bridge	na
259	nd	13585	No	H	Community	na
260	nd	20271	Yes	H	Road	Unevaluated
261	nd	23928	No	H	Utility	na
262	nd	26456	Yes	H	Road	Unevaluated
263	nd	26459	Yes	H	Utility	Unevaluated
264	nd	26460	Yes	H	Utility	Unevaluated
265	nd	26468	Yes	H	Road	Unevaluated
266	nd	26469	Yes	H	Road	Unevaluated
267	nd	26470	Yes	H	Road	Unevaluated
268	nd	26486	Yes	H	Road	Unevaluated
269	nd	26489	No	H	Road	na
270	nd	26490	Yes	H	Road & Refuse Deposit	Unevaluated
271	nd	26491	Yes	H	Road	Unevaluated
272	nd	26492	Yes	H	Road	Unevaluated
273	nd	26493	Yes	H	Road	Unevaluated
274	nd	26494	Yes	H	Road	Unevaluated
275	nd	26495	Yes	H	Road	Unevaluated
276	nd	26496	Yes	H	Road	Unevaluated
277	nd	26497	No	H	Road	na
278	nd	26499	Yes	H	Road	Unevaluated
279	nd	26518	Yes	H	Road	Unevaluated
280	nd	26519	Yes	H	Road	Unevaluated
281	nd	26522	No	H	Road	na
282	nd	26532	Yes	H	Road	Unevaluated
283	nd	26533	No	H	Road	na
284	nd	26540	No	H	Road	na
285	nd	26541	Yes	H	Road	Unevaluated
286	nd	26542	Yes	H	Road	Unevaluated
287	nd	26543	Yes	H	Road	Unevaluated
288	nd	26544	No	H	Road	na
289	nd	27470	No	H	Utility	na
290	nd	27530	Yes	H	Railroad	Unevaluated
291	nd	27752	Yes	H	Utility	Rec. Eligible
292	nd	27757	Yes	H	Utility	Rec. Eligible

Notes: nd – no data; na – not applicable; P – Prehistoric; M – Multi-component; H – Historical; SRL – Segregated reduction locations.

Table 5. Records Search Report Results.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
1	38	1958	Simpson, Ruth D.	*The Manix Lake Archaeological Survey*	Access Roads: Hatch [8639]; Hatch [8BAF] Correction; Locations: T-1225 Location J; T-1225 Location K; T-1225 Location L; T-1229 Location K; T-1229 Location I; T-1229 Location J
2	46	1960	Grosscup, Gordon L., and Jack E. Smith	*Mohave Desert Pipeline Survey-1960*	T-1225 Location L; T-1229 Location K
3	47	1960	Simpson, Ruth	*Archaeological Survey of the Eastern Calico Mountains*	Access Roads: Hatch [8639]; Hatch [8BAF] Correction; Locations: T-1225 Location J; T-1225 Location K; T-1225 Location L; T-1229 Location K; T-1229 Location I; T-1229 Location J
4	64	1965	Simpson, Ruth Deette	*An Archaeological Survey of Troy Lake, San Bernardino County, A Preliminary Report*	T-1225 Location L; T-1229 Location K
5	170	1973	Simpson, Ruth D.	*Cadiz Microwave Relay Site*	-
6	599	1978	Hearn, Joseph E.	*Archaeological-Historical Resources Assessment of Approximately Forty Acres at the Corner of Fort Cady Road and Lake Frontage Road, Newberry Area*	-
7	808	1978	Leonard III, N. Nelson	*An Archaeological Assessment of the Proposed Pipeline Route in the Vicinity of Needles, California*	-
8	874	1979	Barker, James P.	*An Archaeological Sampling of the Proposed Allen-Warner Valley Energy System, Western Transmission Line Corridors, Mojave Desert, Los Angeles and San Bernardino Counties, California, and Clark County, Nevada*	Access Roads: Hatch [861C]; Hatch [861C] Correction; Hatch [8BE0]; Locations: T-1222 Location D; T-1226 Location D
9	964	1980	Norwood, Richard H.	*Cultural Resource Survey for a Portion of the EARP to Johnson Valley, California, Enduro Racecourse Route*	Hatch [8650]; Hatch [8BCC]
10	965	1980	Musser, Ruth A.	*A Cultural Resource Inventory: Johnson Valley to Parker Motorcycle Race – The Public Comment Alternative*	Access Roads: Hatch [8650]; Hatch [8BCC]; Locations: T-1223 Location L
11	1228	1982	Jefferson, George T., Jeffery R. Keaton, and Patrick Hamilton	*Manix Lake and the Manix Fault Field Trip Guide to Selected Geomorphic, Stratigraphic, and Structural Features*	-
12	1242	1982	Hammond, Stephen R.	*Archaeological Survey Report: Realignment on Route 95 at Lobecks Pass, San Bernardino County, California*	-
13	1261	1982	Love, Bruce	*Archaeological Evaluation: Tentative Tract 12177, Newberry Springs*	T-1225 Location Q; T-1229 Location M
14	1386	1983	Wilke, Philip J.	*Consolidated Georex Geophysics Line C-1 Archaeological Inspection*	-
15	1430	1984	Jenkins, Dennis	*Western States Microwave Access Road Archaeological Survey*	-

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
16	1449	1984	Weil, Edward et al.	*Cultural Resources Literature Search, Records Check and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project*	Access Roads: Hatch [8627]; Hatch [8650]; Hatch [8BAD]; Locations: I-125B-126B-293A-294A_PLS1; I-126E_MP 30.40; I-218B_MP 107.1A-Elbow; I-294C_RCV71_98A_And_RCV71_96B; MP 81 Yard; Newberry Springs Yard; T-1222 Location A; T-1226 Location A; T-1222 Location B; T-1226 Location B; T-1222 Location C; T-1226 Location C; T-1222 Location D; T-1226 Location D; T-1222 Location E; T-1222 Location F; T-1226 Location G; T-1222 Location G; T-1222 Location H; T-1226 Location H; T-1222 Location I; T-1222 Location J; T-1226 Location I; T-1222 Location K; T-1222 Location L; T-1226 Location J; T-1222 Location M; T-1223 Location A; T-1223 Location B; T-1227 Location B; T-1223 Location F; T-1227 Location D; T-1224 Location M; T-1228 Location Q; T-1224 Location N; T-1225 Location A; T-1225 Location B; T-1229 Location B; T-1225 Location C; T-1229 Location C; T-1225 Location D; T-1225 Location E; T-1225 Location F; T-1229 Location E; T-1225 Location G; T-1229 Location G; T-1225 Location H; T-1225 Location I; T-1225 Location J; T-1225 Location K; T-1225 Location L; T-1229 Location K; T-1225 Location N; T-1229 Location N; T-1225 Location O; T-1225 Location P; T-1225 Location Q; T-1229 Location M; T-1228 Location P; T-1228 Location R; T-1228 Location S; T-1229 Location A
17	1499	nd	nd	nd	-
18	1514	1985	Compton, Bruce A.	*Negative Archaeological Survey Report: Route 95, P.M. 46.5/47.0*	-
19	1662	1987	McCarthy, Daniel F.	*Cultural Resources Assessment of the Proposed Low Level Radioactive Waste Disposal Facility, Ward Valley, San Bernardino County, California*	-
20	1854	1989	Macko, Michael E.	*Results of an Intensive Cultural Resources Survey of a 40-Acre Tract Around the Ludlow Heater Station*	T-1224 Location K
21	1915	1963	Smith, Gerald A.	*Archaeological Survey of the Mojave River and Adjacent Regions*	-
22	1922	1989	McKenna, Jeanette A.	*An Historic and Prehistoric Cultural Resource Investigation of the Proposed Point to Point Microwave Station to be Constructed in Ludlow, San Bernardino County, California*	-
23	1979	1989	New Mexico State University	*Cultural Resource Report for the All American Pipeline Project: Santa Barbara, California to McCamey, Texas and Additional Areas to the East Along the Central Pipeline Route in Texas*	Access Roads: Hatch [8620]; Hatch [8650]; Locations: I-218B_MP 107.1A-Elbow; T-1223 Location M; T-1224 Location A; T-1224 Location B; T-1224 Location C; T-1224 Location E; T-1224 Location F; T-1224 Location G; T-1225 Location F; T-1229 Location E; T-1225 Location G; T-1229 Location G; T-1229 Location D; T-1229 Location F; T-1229 Location H; T-1229 Location J

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
24	2028	1990	McKenna, Jeanette A.	*Supplemental Investigations: The Broadwell Repository Project Area Testing Locations and Access Routes*	-
25	2124	1990	Arkush, Brooke S.	*Cultural Resources Assessment – Access Road to the California Low-Level Radioactive Waste Disposal Facility Site Located in the Ward Valley of San Bernardino County*	-
26	2125	1990	Arkush, Brooke S.	*Environmental Impact Evaluation: An Archaeological Assessment of 140 Acres of Land Located North of Chambless in Southcentral San Bernardino County, California*	-
27	2152	1990	Young, Bertrand T., and Vickie L. Clay	*Archaeological Inventory of a 40.3 Mile Segment of the Wyoming-California Pipeline Company's Proposed Piute Lateral and Related Facilities in San Bernardino County, California*	-
28	2166	1985	White, David R. M.	*Archaeological Reconnaissance of Exploratory Drilling Locations for a Potential Compressed Air Energy Storage Project at Bristol Lake, San Bernardino County, California*	-
29	2167	1986	Taylor, Thomas T.	*Archaeological Survey Report: Talc and Hector 12 kV Distribution Line Right of Ways, San Bernardino County, California*	Hatch [8650]
30	2203	1990	Pallette, Drew	*A Cultural Resource Assessment of 3 Telephone Repeater Station Sites Located in San Bernardino County, California*	-
31	2220	1978	-	Microfiche of Site Records	-
32	2233	1990	Clay, Vickie L., and Larry L. Hause	*An Archaeological Inventory of Two Proposed PG&E Pipeline Corridor Segments: Newberry Springs to Hinkley 29.6 Miles by 200 Feet (717.6 AC), San Bernardino County, California, and Arvin to Kern River 25.2 Miles by 200 Feet (610.9 AC), Kern County, California*	T-1225 Location N; T-1229 Location N
33	2255	1978	Westec Services, Inc.	*Class II Cultural Resource Inventory: Turtle Mountains, Bristol/Cadiz, Palen Planning Units*	-
34	2257	1978	-	Microfiche of Site Records	-
35	2308	1984	Dohrenwend, John C.	*Surficial Geology of the Eastern Mojave Desert, California: Field Trip 14*	T-1222 Location A; T-1226 Location A
36	2330	nd	nd	nd	Hatch [8BAF] Correction

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
37	2388	1990	McGuire, Kelly R.	*A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona*	Access Roads: Hatch [861C]; Hatch [861C] Correction; Hatch [8630]; Hatch [8650]; Hatch [8BAD]; Locations: I-125B-126B-293A-294A_PLS1; I-125E_MP 30.79; I-202A-293B_PLS2A; I-218B_MP 107.1A-Elbow; MP 81 Yard; MP21_23A_And_MP20_84B; T-1222 Location A; T-1226 Location A; T-1222 Location C; T-1226 Location C; T-1222 Location E; T-1223 Location F; T-1227 Location D; T-1223 Location H; T-1227 Location F; T-1223 Location I; T-1227 Location G; T-1223 Location L; T-1225 Location F; T-1229 Location E; T-1225 Location G; T-1229 Location G; T-1227 Location E; T-1229 Location D; T-1229 Location F; T-1229 Location H; T-1229 Location J
38	2399	1991	McGuire, Kelly R., and Leslie Glover	*A Cultural Resources Inventory of a Proposed Natural Gas Pipeline Corridor from Adelanto to Ward Valley, San Bernardino County, California*	Hatch [861C]; Hatch [861C] Correction; Hatch [8BE0]
39	2406	1991	Osborne, Richard H.	*Addendum to Archaeological Investigation of Hidden Valley Hazardous Waste Facility Access Route from Highway 40 to Hector Siding*	Newberry Springs Yard
40	2450	1991	Lerch, Michael K.	*Cultural Resource Significance Evaluation and Treatment Plan, Bolo Station Facilities, San Bernardino County, California*	-
41	2572	1991	Glover, Leslie C.	*A Cultural Resources Inventory of Selected Route Re-Alignments for the Mojave Pipeline in California and Arizona*	-
42	2578	1991	Glover, Leslie C.	*A Cultural Resources Inventory of Selected Route Re-Alignments for the Mojave Pipeline in California and Arizona*	-
43	2579	1991	Harmon, Robert M.	*Cultural Resources Assessment Topock Compressor Station Communication System Upgrade, San Bernardino County, California*	-
44	2580	1991	Wohlgemuth, Eric and Leslie C. Glover	*A Cultural Resources Inventory of Three Corridor Expansion Tracts in San Bernardino County, California*	Access Road: Hatch [861C]; Locations: I-125B-126B-293A-294A_PLS1; I-125E_MP 30.79; I-126C_MP10_47_And_MP10_50; MP21_23A_And_MP20_84B; T-1222 Location A; T-1226 Location A; T-1222 Location C; T-1226 Location C
45	2581	1991	Glover, Leslie C. and David Boe	*A Cultural Resources Inventory of Two Corridor Expansion Tracts in California and Arizona*	Access Road: Hatch [861C]; Locations: I-125B-126B-293A-294A_PLS1; I-125E_MP 30.79; I-126C_MP10_47_And_MP10_50; MP21_23A_And_MP20_84B; T-1222 Location A; T-1226 Location A; T-1222 Location C; T-1226 Location C
46	2583	1991	McGuire, Kelly	*An Archaeological Reconnaissance for a Mojave Pipeline Corridor Expansion in San Bernardino County, California*	Access Road: Hatch [8BAD]; Locations: MP 81 Yard; T-1222 Location E; T-1223 Location F; T-1227 Location D; T-1223 Location H; T-1227 Location F; T-1223 Location I; T-1227 Location G; T-1223 Location L; T-1224 Location H; T-1224 Location J; T-1224 Location K; T-1227 Location E

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
47	2591	1992	Reed, Judyth	*San Bernardino National Forest Archaeological Reconnaissance Report*	Access Road: Hatch [861C]; Locations: I-125B-126B-293A-294A_PLS1; I-125E_MP 30.79; I-126C_MP10_47_And_MP10_50; MP21_23A_And_MP20_84B; T-1222 Location A; T-1226 Location A; T-1222 Location C; T-1226 Location C
48	2648	1993	Osborne, Richard H.	*An Overview of the Archaeological Collection from Ludlow Cave, Eastern Mojave Desert, California*	-
49	2710	1993	Apple, Rebecca McCorkle, and Lori Lilliburn	*Cultural Resources Survey for the Fort Cady Boric Acid Mining and Processing Facility Newberry Springs, California*	-
50	2808	1993	Padon, Beth, and Laurel Breece	*Archaeological Assessment, Kern Mojave Pipeline, San Bernardino County, California*	T-1225 Location P
51	2862	1993	Apple, Rebecca McCorkle	*Cultural Resources Testing and Evaluation Report for the Fort Cady Boric Acid Mining and Processing Facility, Newberry Springs, California*	-
52	3017	1993	Osborne, Richard H.	*The Archaeological Collection from Ludlow Cave, South-Central Mojave Desert, California*	-
53	3116	1996	Demcak, Carol R.	*Report of Archaeological Survey for L.A. Cellular Site #C114, Ludlow, San Bernardino County, California*	-
54	3148	1996	Demcak, Carol R.	*Report of an Archaeological Survey for L.A. Cellular Site #C602 Cadiz Summit, San Bernardino County, California*	-
55	3203	1992	Lerch, Michael K.	*Cultural Resources Inventory and Significance Evaluation Final Report, Rail-Cycle Bolo Station Facilities, San Bernardino County, California*	-
56	3630	2001	Budinger, Fred	*An Archaeological Assessment of the Proposed Verizon Wireless Newberry Springs Unmanned Cellular Telecommunications Site to be Located South of Nationals Trials Highway (Old Route 66) and West of Hector Off-ramp from Interstate Highway 40, San Bernardino County, California*	-
57	3631	1998	Clark, Caven	*Archaeological Survey at the Hector Meter Station*	T-1225 Location P
58	3706	2000	Schmidt, James	*Southern California Edison Ludlow Line Extension Project*	-
59	3707	1999	Duke, Curt	*Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 651-01, County of San Bernardino, California*	-
60	5047	2004	Schmidt, James J.	*2004 Automated Switch Project, San Bernardino and Riverside Counties*	-

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
61	5634	2004	McKenna, Jeanette A., and Roger G. Hatheway	*Archaeological Survey Report: San Bernardino County Bridge Replacement Project (Bridges No. 81 and 82), Interstate 40, San Bernardino County, California*	-
62	5635	2004	McKenna, Jeanette A.	*A Cultural Resource Management Report for the Evaluation of San Bernardino County Bridges #81 and 82, Located Along the Historic National Trails Highway, San Bernardino County, California*	-
63	5636	2004	Underwood, Jackson	*Cultural Resources Survey of the Cadiz Lateral/Interconnect, A Potential Future Facility of the Line 1903 Project, San Bernardino County, California*	T-1222 Location G
64	5637	2004	Underwood, Jackson, and Carrie Gregory	*Cultural Resources Evaluation of The Cadiz Lateral, Line 1903 Project, CA-SBR-11,582H (a 1964 Military Camp at Cadiz) and a Segment of CA-SBR-2910H, the National Old Trails Highway, San Bernardino County, California*	-
65	5792	2005	Switalski, Hubert J., and Jill K. Gardner	*A Cultural Resources Inventory of an 80-Acre Parcel of Land for the Proposed Fort Cady Road Compost Facility Located Near Troy Dry Lake, Newberry Springs, San Bernardino County, California*	-
66	5835	2001	Shepard, Richard S. and Roger D. Mason	*Cultural Resources Records Search and Constraints Analysis Report for the Topock Expansion Pipeline near Needles, San Bernardino County, California*	Hatch [861C]; Hatch [861C] Correction; Hatch [8BE0]
67	6299	2002	Romani, John	*Negative Archaeological Survey Report: Southern California Edison BNSF Railroad Line Extension Project*	-
68	6309	2008	Glentis, Dionisios	*Cultural Resource Records Search Report, Burlington Northern Santa Fe Railway, Four Bridge Renewal Project, San Bernardino, California*	-
69	6310	2008	Glentis, Dionisios	*Archaeological Resource Management Report, Class III Cultural Resource Survey for the Burlington Northern Santa Fe Railway Four Bridge Renewal Project, San Bernardino County, California*	-
70	6316	1995	Hatoff, Brian et al.	*Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project; Final Report, Volume 2: Appendices A, B, C, and D*	MP 81 Yard; T-1222 Location L; T-1226 Location J; T-1226 Location K
71	6317	2009	Schmidt, James J.	*WO 4706-0307, SAP #800274517; Coolwater-Segs 2-Tortilla 115 kV Deteriorated Pole Replacement Project. San Bernardino County, California*	-

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
72	6518	2005	Higgins, Howard C., Deann Muller, David M. Smith, and Christopher E. Drover	*A Class III Cultural Resources Inventory for 10 Proposed Microwave Tower Sites, County of San Bernardino, California*	-
73	6565	2004	Hale, John P. and Meg McDonald	*Bureau of Land Management Access Roads Right-of-Way Project, Marine Corps Air Ground Combat Center, Twentynine Palms, California*	Hatch [8633]
74	6716	2010	Moffitt, Steven A. and Linda R. Moffitt	*Final; A Cultural Resources Inventory of Nine Selected Locations Between Needles and Newberry Springs, San Bernardino County, California, Southern California Gas Company Line 3000 in Line Inspection Project*	-
75	6736	2009	Mason, Roger	*Amboy Road Project, San Bernardino County*	-
76	6738	2010	Moffitt, Steven A., and Linda R. Moffitt	*Final: An Archaeological Evaluation of CA-SBR-12927, San Bernardino County, California, Southern California Gas Company Line 3000 In-Line Inspection Project*	-
77	7125	2012	McKenna, Jeanette A.	*Results of a Class III Cultural Resources Investigation of the Proposed Questar Essex "Pig" Receiver Project Near Essex, San Bernardino Co., California*	-
78	7125	2012	McKenna, Jeanette A.	*Results of a Class III Cultural Resources Investigation of the Proposed Questar Essex "Pig" Receiver Project Near Essex, San Bernardino Co., California.*	-
79	7265	2010	Wlodarski, Robert J.	*AT&T Wireless Telecommunications Site LA8138 (Pisgah Crater) Ludlow, California.*	-
80	7366	2013	Winslow, Diane L. and Sherri Andrews	*Class III Inventory for the Granite Wind Energy Telecommunication Lines, Granite Mountain Gentie Line, and Jasper Substation Interconnection Projects, San Bernardino County, California*	-
81	7389	2011	Lloyd, Jay B. and David Earle	*Archaeological Survey and Monitoring for Gas Hydrotesting at Segment T-51 on Gas Transmission Line 300A, San Bernardino County, California*	T-1225 Location I; T-1225 Location J; T-1225 Location K; T-1225 Location L; T-1229 Location K
82	7501	2011	Brock, James	*Phase I Archaeological/Historical Resources Assessment for a Proposed Snack Bar Project, 97715 National Trails Highway, Cadiz, California*	-
83	7502	2011	Brock, James	*Phase I Archaeological/Historical Resources Assessment of a 4.87-Acre Property in Cadiz, California*	-

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
84	7503	2009	Far Western Anthropological Research Group, Inc.	*Research Design for Inventory and Evaluation of Archaeological Resources in Support of the PG&E Trilobite Solar Development Project, San Bernardino County, California*	-
85	7504	2011	Carpenter, Kimberley and John Berg	*Cultural Resources Inventory of 7,580 Acres of BLM and Private Lands near Chambless, San Bernardino County, California*	-
86	7570	2002	Underwood, Jackson and James H. Cleland	*Draft Cultural Resources Survey of Line 1903, All American Pipeline Conversion Project from Mettler, Kern County, California to Daggett, San Bernardino County, California*	T-1229 Location I; T-1229 Location J
87	7571	2002	Pigniolo, Andrew R., John Dietler, and Stephanie Murray	*Draft Cultural Resources Survey for Line 1903, All American Pipeline Replacement Project, Daggett to Blythe Segment, San Bernardino and Riverside Counties, California*	T-1223 Location L; T-1223 Location M; T-1224 Location A; T-1224 Location B; T-1224 Location C; T-1224 Location D; T-1224 Location E; T-1224 Location F; T-1224 Location G; T-1224 Location H; T-1224 Location I
88	7572	2003	Cleland, James and Lorraine Willey	*Supplemental Cultural Resources Survey No. 1 for the Line No. 1903 Project, All American Pipeline Conversion from Mettler, California to Ehrenberg, Arizona*	-
89	7576	2012	McKenna, Jeanette A.	*A Class III Cultural Resources Investigation for Improvements to the White Knob Haul Road Located in the Lucerne Valley of San Bernardino County, California*	Hatch [8620]
90	7707	2011	Far Western Anthropological Research Group, Inc.	*Cultural Resources Constraints Analysis for Gas Hydrotesting at T-52 on Gas Transmission Line 300A*	-
91	7708	2011	Far Western Anthropological Research Group, Inc.	*Cultural Resources Constraints Analysis for Gas Hydrotesting at T-77 on Gas Transmission Line 300B*	-
92	7709	2013	Winslow, Diane L.	*Archaeological Survey Report for Southern California Edison Company's Grid Reliability and Maintenance Project to Replace Damaged Anchor on Power Pole 30871S (900882476), Hector 12kV Circuit, Bureau of Land Management, San Bernardino County, California*	-
93	7710	2010	Sander, Jay K.	*A Class III Cultural Resources Inventory for Eleven Hydrogeological Test Locations, San Bernardino County, California*	-
94	7870	2014	Duff, Gabrielle	*Historic Property Survey Report to Re-Grade Median Cross Slopes on Interstate 40 PM 0/R25, EA 0R120*	-

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
95	7932	2016	Cooper, Jason B., Jesse Yorck, and Trisha Drennan	*Final Class III Cultural Resources Inventory, Southern California Gas Company Line 3000, Deep Well Anode Project at MP 21.90, 40.00, 50.00 and 65.01 near the Community of Essex and the City of needles, San Bernardino County, California*	-
96	7934	2016	Clark, Tiffany	*Historic Property Survey Report to Regrade the Median on Interstate 40 PM 50/75, EA 0E1600.*	-
97	7939	2014	Brunzell, David	*Cultural Resources Assessment of Proposed Impacts to Abengoa Property, Harper Dry Lake Area, San Bernardino County, California*	-
98	7995	2014	Tang, Bai "Tom," et al.	*Class III Cultural Resources Inventory: Burlington Northern Santa Fe Railway Derailment Restoration Project, Ash Hill and Bagdad Sites, near the Communities of Ludlow and Amboy, San Bernardino County, California*	SB-07995
99	8017	2015	Heidelberg, Kurt and Gabrielle Duff	*Archaeological Survey Report for Southern California Edison's Replacement of One Deteriorated Power Pole on an Unnamed Circuit (TD876576) on BLM Land Near Ludlow, San Bernardino County, California*	-
100	8237	2017	Farrell, Jenna	*A Class III Cultural Resource Inventory for the Questar Southern Trails Pipeline ROW Washout 1 and 2 Maintenance Project, San Bernardino County, California*	-
101	BlueRock_AmboyGas2017	2017	Loftus, Shannon L.	*Cultural Resources Constraints Report; GAS SERVICE – Amboy Regulator Station Replacement; PM 30983391*	I-294C_RCV71_98A_And_RCV71_96B; T-1223 Location B; T-1227 Location B
102	CRCR Span 144	2014	Chiniewicz, Erin	*Cultural Resources Constraints Report, Line 300B MP 60.78 Recoat/Repaint/Repair – Span 144, PM Number 42133129*	-
103	Segment 51 Cultural Review	2011	Far Western Anthropological Research Group, Inc.	*Cultural Resources Constraints Analysis for Gas Hydrotesting at T-51 on Gas Transmission Line 300A*	T-1225 Location J; T-1225 Location K

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
104	KE-4476	2013	Higgins, Courtney et al.	*Cultural Resources Inventory of 5,300 Acres for the PG&E Pipelines 300A and 300B, San Bernardino and Kern Counties, California*	Access Roads: Hatch [861C]; Hatch [861C] Correction; Hatch [8627]; Hatch [862B]; Hatch [8630]; Hatch [8633]; Hatch [8650]; Hatch [8BAD]; Hatch [8BAF] Correction; Hatch [8BB5] Locations: I-125B-126B-293A-294A_PLS1; I-125C_DripT_10_83A_And_V_10_85A; I-125E_MP 30.79; I-126C_MP10_47_And_MP10_50; I-126E_MP 30.40; I-202A-293B_PLS2A; I-202B_MP 106.8A-Elbow; I-218A-294B_PLS2B; I-218B_MP 107.1A-Elbow; I-294C_RCV71_98A_And_RCV71_96B; MP 106.6A-Elbow; MP 81 Yard; MP21_23A_And_MP20_84B; Newberry Springs Yard; T-1222 Location A; T-1226 Location A; T-1222 Location B; T-1226 Location B; T-1222 Location C; T-1226 Location C; T-1222 Location D; T-1226 Location D; T-1222 Location E; T-1222 Location F; T-1226 Location G; T-1222 Location H; T-1226 Location H; T-1222 Location I; T-1222 Location J; T-1226 Location I; T-1222 Location K; T-1222 Location L; T-1226 Location J; T-1222 Location M; T-1223 Location A; T-1223 Location B; T-1227 Location B; T-1223 Location E; T-1223 Location F; T-1227 Location D; T-1223 Location H; T-1227 Location F; T-1223 Location I; T-1227 Location G; T-1223 Location J; T-1223 Location K; T-1223 Location L; T-1223 Location M; T-1224 Location A; T-1224 Location B; T-1224 Location C; T-1224 Location D; T-1224 Location E; T-1224 Location F; T-1224 Location G; T-1224 Location H; T-1224 Location I; T-1224 Location J; T-1224 Location K; T-1224 Location L; T-1224 Location M; T-1228 Location Q; T-1224 Location N; T-1225 Location A; T-1225 Location B; T-1229 Location B; T-1225 Location C; T-1229 Location C; T-1225 Location D; T-1225 Location E; T-1225 Location F; T-1229 Location E; T-1225 Location G; T-1229 Location G; T-1225 Location H; T-1225 Location I; T-1225 Location J; T-1225 Location K; T-1225 Location L; T-1229 Location K; T-1225 Location N; T-1229 Location N; T-1225 Location O; T-1225 Location P; T-1225 Location Q; T-1229 Location M; T-1226 Location E; T-1226 Location F; T-1226 Location K; T-1226 Location L; T-1227 Location A; T-1227 Location E; T-1227 Location H; T-1227 Location I; T-1227 Location J; T-1227 Location K; T-1228 Location A; T-1228 Location B; T-1228 Location C; T-1228 Location D; T-1228 Location E; T-1228 Location F; T-1228 Location G; T-1228 Location H; T-1228 Location I; T-1228 Location J; T-1228 Location K; T-1228 Location M; T-1228 Location N; T-1228 Location O; T-1228 Location P; T-1228 Location R; T-1228 Location S; T-1229 Location A; T-1229 Location D; T-1229 Location F; T-1229 Location H; T-1229 Location I; T-1229 Location J

Table 5. Records Search Report Results *continued*.

LIST NO.	REPORT NO. (SB-)	YEAR	AUTHOR	TITLE	OVERLAPPING PROJECT LOCATIONS
105	nd	2017	Powell et al.	*Class III Cultural Resources Inventory of 992 Acres for Southern California Gas Company's Operations Maintenance Activity on Line 3000 Between Newberry Springs and Kelbaker Road, San Bernardino County, California*	nd

SITE DEFINITIONS

Based on the background literature (summarized above), records search data, our previous work in the region for PG&E and for a variety of other clients we have developed a series of regional site types. These types are defined below and are subsequently used to summarize the records search results, guide site documentation, and inform eligibility potential. New site types will be created if necessary should we encounter resources during the inventory that do not easily fit the types defined below.

Prehistoric Sites

Prehistoric sites included those resources that contain three or more artifact types within 15 meters of each other (e.g., one biface + one point or sherd + one flake = site), or six or greater artifacts of the same or different type (e.g., one biface + five flakes = site). Similarly, associations of single flaked stone tools and any other artifact types within 15 meters of one another were recorded as sites (i.e., one biface + one flake = site). SRLs were exceptions to this rule, as detailed below. All isolated prehistoric features (hearths, stone rings, alignments, etc.) were recorded as sites. Site types common in the Mojave Desert include:

- *SRLs* include discrete, concentrated clusters of debitage, representing one material type that may include a few cores and/or bifaces that are thought to reflect a single confined reduction event of one locally acquired nodule. SRLs associated with sites aboard parts of MCAGCC have been found to cover 5.2 ± 0.7 square meters on average (n=197, range=<0.1–86.4 square meters), have maximum dimensions 2.6 ± 0.2 times greater than minimum dimensions (n=197, range=0.3–38 square meters), and to incorporate artifact densities of 16.9 ± 1.7 per square meters, with flakes comprising the bulk (ca. 96%) of these artifacts (n=197, range=0.5–254.8 per square meters; Byerly 2017:88).
- *Small SRLs* (i.e., 1–24 artifacts) were recorded as *isolates*, but received slightly more analytical attention than other isolates in that SRL size, orientation, and debitage-reduction-stage data are collected.
- *Large SRLs* (i.e., ≥25 artifacts) were recorded as *sites*.

Other prehistoric site types roughly correspond to those employed by Byrd et al. (2011) for the Mojave National Preserve.

Quarries are areas where toolstone was directly acquired from bedrock sources. Most reduction at these sites is primary (i.e., exterior core).

Pavement Quarries reflect primary or secondary reduction of surface “float” sources (i.e., pebble-, cobble-, and boulder-sized material) on ancient (Tertiary- to Pleistocene-aged) pavements and fanglomerates. These can incorporate fewer than a dozen to a few thousand SRLs. For this project, pavement quarries incorporate as few as two SRLs, some of which, or in combination, may have incorporated fewer items than the minimum number required for a large SRL. However, in such instances it is reasoned that it was more appropriate to designate and record closely associated (i.e., ≤15 meters apart) small SRLs as a single pavement quarry site, rather than separate isolates.

Lithic Reduction Stations are scatters of flaked stone debitage that may include cores. However, these tend to be more dispersed than SRLs, incorporate a greater diversity of toolstone, and lack any clear indication of the number of reduction events.

Campsites contain debitage as well as flaked stone tools such as bifaces, flake tools, and/or projectile points.

Limited Occupations include ceramics and/or ground stone artifacts or bedrock milling features, in addition to debitage and/or flaked stone tools.

Complex Occupations contain evidence of sustained occupation in the form of midden sediment, intact hearth features, and/or residential structures, in addition to the debitage, flaked stone tools, and ceramics and/or ground stone. Many of these sites are in rockshelter or cave settings, or around springs and other water sources.

Rock Art includes isolated or clustered pictographs (painted designs) and/or petroglyphs (pecked, incised, or scratched designs), and can occur alone or in association with other site types.

Features can include rock rings, cleared circles ("sleeping circles"), trails, cairns, rock alignments, bedrock milling features, and/or agave roasting pits (among others; e.g., Blair and Fuller-Murillo 1997) that appear to be prehistoric in age. These can occur alone or in association with other types.

Prehistoric isolates included those resources that consist of one or two artifact types, representing five or fewer artifacts within 15 meters of each other (i.e., one to five flakes = isolate, one sherd + four flakes = isolate). Like historical bottle drops, the shattered remains of single ceramic vessels were also recorded as isolates, as were small SRLs. As noted, however, artifact associations incorporating a flaked stone tool, in any quantity, were documented as sites (excepting SRLs).

Historical Sites

Historic-era sites included those resources containing three or more different historical (i.e., ≤1968) artifact types within 15 meters of one another, or 10 or greater artifacts of representing one or two types within similar proximity (e.g., one can + one glass sherd + one nail = site; 11 cans = site). All historical features were also recorded as sites. Historical site types common in the Mojave Desert included the following, as outlined in the California Department of Transportation's (Caltrans; 2013) *A Historical Context and Archaeological Research Design for Work Camp Properties in California*:

Work Camps were living spaces provided by employers for their employees, often including food and other services. These often occurred in isolated locations where housing and other necessities were not available. Property types include evidence of residences (e.g., tent platforms, bunkhouses), support facilities (e.g., cookhouse, bathhouse, office), infrastructure (e.g., power, roads, water), industry (e.g., blacksmith, warehouse, quarry), and refuse disposal (e.g., pits, dumps).

Mining Sites can individually or collectively include adits, shafts, mills, mining claim cairns, and prospects.

Ranches/Community Sites include agricultural homesteads, domestic households, and townsites. Domestic features can include aspects associated with household activities—prominently, the house itself—and also may encompass a cellar, privy, well, sheet refuse, trash dumps, and cisterns. Agricultural features are made up of such structures as barns, sheds, drying kilns, milk houses, watering troughs, pens, corrals, workers' residences, and privies.

Refuse Deposits are secondary trash features that represent a single dumping episode, or a series of refuse dumping events at the same location. Refuse Deposits are not directly related to a larger surrounding or adjacent site such as a habitation, commercial location, work camp, or industrial site—in these examples, refuse would likely be identified as features of these sites. Refuse Deposits are often found adjacent to abandoned roads and railway lines, which facilitated transport of the refuse by truck or automobile; the human activities that produced the discarded artifacts occurred elsewhere.

Roads, Trails, and Railroads include both paved/maintained, and unpaved/unimproved vehicle (automobiles and wagons) travel routes (e.g., Wagon Roads and Stage Roads, and Improved Roads and State Highways). These linear resources are generally encountered as small preserved segments, or as limited stretches passing through project boundaries, and may or may not receive site trinomials. *Railroads* are another type of transportation corridor that are treated separately. Associated property types include in-use and abandoned railroad beds, sidings/stations, and refuse deposits.

Utility Sites include water conveyance systems and supporting structures (e.g., canals) and power transmission lines and substation locations. Under authority 16 U.S.C. 470v; 36 CFR 800.14(c), dated April 1, 2002, the Advisory Council on Historic Preservation exempts Section 106 considerations of effects to natural gas pipelines.

Military Sites include temporary camps associated with large-scale WWII-era and Vietnam-era training exercises, and can include railroad sidings, airfields, hospitals, supply depots, maneuver areas, and weapons test ranges. WWII-era aerial bombing targets associated with the Victorville Precision Bombing Range are also regionally common. These variably include asphalt target rings, concrete foundations, earthen-berm features, barbed-wire fence components, and often copious scatters of near-complete and fragmented test bombs, typically over a few square kilometers around target areas (Foley and Wright 2008).

Historic-era isolates included those resources containing fewer than three artifact types and between one and nine artifacts of historic age total within 15 meters of each other (e.g., one can + seven pieces of glass = isolate; nine cans = isolate). Survey markers were recorded as isolates, as were single bottle drops.

Records searches through information centers revealed a total of 291 non-isolate primary numbers within the L-300 search area, as identified on available Department of Parks and Recreation (DPR) forms, including 150 prehistoric resources, 115 historical resources, and 26 multi-component resources. Among these, the DPR for P-36-000060/013879 was not entirely available through the SCCIC, and its information could not be verified. A total of 90 of these resources are within or overlap the L-300 survey APE, including 19 prehistoric, 62 historical, and nine multi-component sites (see back to Table 4).

Prehistoric Resources

A total of 176 non-isolate cultural resources within the L-300 records search area contain prehistoric components, of which a minority (ca. 9%) are associated with temporally diagnostic material(s; Table 6). Note that component counts do not equal site counts, as sites may contain multiple components. Among the few sites that do possess such diagnostics, half are of Saratoga Springs/Shoshonean vintage, and a quarter point to Pinto Period presences. More than a third (ca. 43%) of non-isolate resources with prehistoric components reflect the quarrying or prospecting of locally available toolstone (i.e., pavement quarries and SRLs), and roughly as many (ca. 43%) are lithic reduction stations and campsites. Limited and complex occupations, along with features (i.e., burials, rock features, trails, and intaglios), are equally poorly represented (ca. 7% each). Flaked stone is among 94% of non-isolate resources with prehistoric components (Table 7), ground stone is represented at slightly more than 7% of the same, while other remains (i.e., FAR, ceramics, and human bone) are only among roughly 5% to 1%.

Table 6. Prehistoric Components in L-300 Search Area.

Prehistoric Component Site Type	Sites		% Sites	Component Era				
	Total Prehistoric	Total Multi-component		Lake Mojave	Pinto	Gypsum	Saratoga Springs/ Shoshonean	Unknown Prehistoric
Feature (Burial, Rock Feature, Trail, Intaglio)	10	2	6.8	-	-	1	1	11
Complex Occupation	1	2	1.7	-	1	-	3	-
Limited Occupation	7	2	5.1	-	-	-	3	6
Campsite	26	6	18.2	-	2	2	1	27
Lithic Reduction Station	37	6	24.4	-	-	-	-	43
Pavement Quarry	47	7	30.7	1	1	-	-	47
SRL	22	-	12.5	-	-	-	-	22
Total	**150**	**26**	**-**	**1**	**4**	**3**	**8**	**156**
% Components	-	-	-	0.6	2.3	1.7	4.5	88.6

Note: SRL – Segregated reduction location.

Table 7. Prehistoric Resource Constituents.

Prehistoric Constituents	L-300	%
Flaked Stone	166	94.32
Ground Stone	13	7.39
Ceramics	6	3.41
Human Remains	1	0.57
Fire-altered Rock	8	4.55

Historical Resources

A total of 142 non-isolate cultural resources within the L-300 records search area contain historical components, of which a majority (ca. 84%) could be assigned to dates after AD 1848 (Table 8). Of those that could be so characterized, more than half (ca. 60%) contain constituents that are post-1945 in age, decreasing in frequency through previous time intervals, although only one resource was found to have a component dating prior to 1880. Nearly half (ca. 47%) of non-isolate historical resources are roads, followed in next highest frequency (ca. 20%) by refuse deposits. Nearly half (ca. 49%) of non-isolate cultural resources with historical components have cans (Table 9), and comparably high numbers (ca. 40%) have glass; ceramics and structural remains are equally less well represented (ca. 14% and 15%, respectively).

GLO and Topographic Map Review

Reviews of historical topographic quadrangles identified five previously undocumented historic-era roads overlapped by proposed access roads. These unnamed roads are visible on the 1955 Lavic (see forward to *RB-X6*), Ludlow (see forward to *RB-X10* and *RB-X11*), and 1956 Bagdad (see forward to *RB-X12*), Cadiz (see forward to *RB-X13*), and Essex (see forward to *RB-X14*) 15-minute topographic quadrangles.

Table 8. Historical Components in Project Search Areas.

HISTORIC-ERA COMPONENT SITE TYPE	SITES			COMPONENT ERA				
	TOTAL HISTORIC-ERA	TOTAL MULTI-COMPONENT	% SITES	1848–1880	1880–1914	1914–1945	POST-1945	UNSPECIFIED HISTORIC
Community	8	-	5.6	-	2	4	4	2
Military	6	-	4.2	-	-	4	2	-
Mining	3	2	3.5		1	1	2	1
Railroad	9	-	6.3	-	4	6	2	3
Refuse Deposit	28	-	19.7	-	-	7	18	6
Road	46	21	47.2	1	4	11	32	12
Utility	11	1	8.5	-	-	4	9	-
Work Camp	3	-	2.1	-	1	2	-	-
Other (Bridge, Benchmark, Features)	2	2	2.8	-	-	1	2	-
Total	**116**	**26**	**-**	**1**	**12**	**40**	**71**	**24**
% Components	-	-	-	0.7	8.5	28.2	50.0	16.9

Table 9. Historical Resource Constituents.

HISTORIC-ERA CONSTITUENTS	L-300	%
Glass	57	40.1
Cans	70	49.3
Ceramics	20	14.1
Structural	21	14.8

Inventory Expectations

These data suggest that new inventories in the L-300 project area will mostly reveal prehistoric resources that will likely reflect targeted reduction of CCS nodules that were available as float nodules atop fan remnant pavements. Evidence of more complex activities (e.g., resource processing) will be minimal, and, where evident, chronological data will most often point to Late or Middle Holocene site use. Overall, roads are likely to be more often encountered in the L-300 project area compared to other historical resource types, with temporal indicators strongly favoring the early-mid twentieth century.

CHAPTER 5. NATIONAL REGISTER ELIGIBILITY CONSIDERATIONS

The project areas are within or intersect lands managed by federal, state, and local agencies and thus require compliance with (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR § 800, revised 2004); and (2) the California Environmental Quality Act (Public Resources code, Section 21000 et seq., revised 2005), which mandates federal and California public agencies to consider the effects of projects on historic properties. Historic property significance is defined at the local, state, or national level. All sites documented within the in the APE for the current project were evaluated to the extent possible based on visible surface artifacts and features. Where documentary research provided additional information about historical resources, efforts were made to identify historically referenced structures and activity areas. Sites requiring extensive background research or subsurface excavation were not evaluated but were recommended for Phase II evaluations if they were deemed to be unavoidable by the proposed project. In the following sections, prehistoric and historic-era resources are defined, National Register eligibility criteria are outlined, and prehistoric and historical research themes pertinent to considerations of site eligibility are discussed in detail.

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY CRITERIA

The National Historic Preservation Act (54 USC § 300101) requires the lead federal agency for a project to consider effects to significant cultural resources ("historic properties") from a proposed federal undertaking. This includes identification of historic properties (usually through archival research, field inventories, public interpretation, and/or test evaluations), assessment of potential adverse effects to those properties, and, where necessary, development of measures to resolve adverse effects.

Under the Act, a "significant" cultural resource is one that is listed on, or eligible for listing on, the National Register. Criteria for eligibility are defined in the National Historic Preservation Act of 1966, as amended. To be considered eligible for the National Register, a site must "possess integrity of location, design, setting, materials, workmanship, feeling, and association" (36 CFR § 60.4), and:

(A) be associated with events that have made a significant contribution to the broad patterns of our history; or

(B) be associated with the lives of persons significant in our past; or

(C) embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(D) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR § 60.4).

Criterion A is rarely used in prehistoric contexts but can be applied if a site represents a "type site" for a specific archaeological complex or time-period. Criterion B has even less relevance, as the significance of a particular prehistoric person is rarely known. Criterion C also has limited applicability, but can be appropriate at sites with rock art, at sites where specialized items (e.g., charmstones) were mass-produced, at locations with particularly artistic and masterful rock art occurs, or where outstanding architecture is represented (e.g., a cliff dwelling or rock ring village complex). A site's ability to yield important information is determined by whether, and to what degree, the data contained in that site can be used to address issues pertinent to local and regional prehistoric and historical research, as defined by specific themes or domains and questions.

Historic-era resources can be evaluated using any of these four criteria, or any combination thereof. Under Criterion A, a historic-era site may be directly related to some major event in state, local, or national history—for example, the discovery of gold at Sutter's Mill in Coloma. Such a site might also be eligible under Criterion B, if the historical event was tied to an important individual or group (in this example, John Sutter and John Marshall). Criterion C is most often invoked for standing structures (bridges, buildings, etc.) that represent high achievement in engineering, art, architecture, and the like. Critical to addressing eligibility under Criterion D is identification of the kinds of important information that are sought and demonstration that the property is likely to contain that information. In *National Register Bulletin 36, Guidelines for Evaluating and Registering Archaeological Properties* (Little et al. 2000), a five-step process for determining the research potential of an archaeological site is presented (from Caltrans 2009:195):

1. Determine the property's structure and content, and categories of data it may contain.
2. Identify the appropriate historic context by which to evaluate it.
3. Identify important research themes and questions that the data it contains may be able to address.
4. Considering the property's integrity, assess whether the data it contains are of sufficient quality to address these important research themes and questions.
5. Identify the important information that an archaeological study of the property is likely to contain.

RESEARCH DESIGN

Prehistoric Research Domains and Questions

The following sections detail significant research domains and questions pertaining to the evolution of Mojave Desert Native American lifeways from the Terminal Pleistocene through the Early Holocene, as outlined in the prehistoric context. These will guide considerations of site eligibility under Criterion D, and derive directly from McGuire et al. (2015), with minor modification, further incorporating research elements from Byrd et al. (2011) and various other projects (e.g., Byerly 2015, 2017; Byerly and Roberson 2016; Roberson and Byerly 2016). A prehistoric site may be considered eligible for listing under Criterion D if it is deemed to possess significant data speaking to these themed questions, and also possesses sufficient temporal and structural integrity to meaningfully segregate prehistoric components.

Terminal Pleistocene/Early Holocene Human Presence and Adaptations

- When is Clovis technology first evident in the Mojave Desert, and how long does it persist?
- Similarly, to what extent does the Clovis tradition overlap with concave-base and stemmed point technology, and what is temporal relationship of these forms with Clovis?
- To what extent did shallow lakes and associated marshes persist through the Early Holocene in the Mojave Desert?
- What were the suites of plant and animal foods that attracted early foragers to wetland environments and what was targeted?
- Do early sites around Mojave Desert basins represent short-term family camps used for radial foraging activities in the adjacent wetlands, or longer-term settlements that sponsored logistical hunting efforts alongside toolstone acquisition?
- Does the technological and source composition of Early Holocene lithic assemblages reflect either residential or logistical movements?
- To what degree does the material type and source diversity recognized in Early Holocene sites reflect the inter-group exchange of materials, information, and mates during a time of very low human population densities?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable Terminal Pleistocene and/or Early Holocene diagnostics (i.e., Clovis, Western Stemmed, and/or non-Humboldt Concave-base projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative regarding reduction strategy and toolstone preferences. Those Terminal Pleistocene and/or Early Holocene sites associated with features will be most significantly regarded, as will those associated with visible paleoenvironmental indicators, such as surface-exposed organic sediment.

Land Use and Subsistence during the Middle Holocene

- Did arid Middle Holocene conditions lead to a decline in land-use intensity, or perhaps partial abandonment of parts of the Mojave Desert?
- Was there a north-south gradient in resource response, and thus differential representation of low elevation sites, due to intra-regional variability in Middle Holocene warming?
- To what extent do human adaptational characterizations of Middle Holocene hunter-gatherer groups (i.e., small, territorially extensive, mobile foraging bands) apply across the Mojave Desert?
- To what extent do associations of Pinto point and other forms, such as Elko, Western Stemmed varieties, and Deadman Lake, speak to the utilization of diverse technologies by a single group, or represent different groups?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable Middle Holocene diagnostics (i.e., Pinto and/or Deadman Lake projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy and toolstone preferences. Those Middle Holocene sites associated with features will be most significantly regarded, as will those linked to visible paleoenvironmental indicators, such as surface-exposed organic sediment.

Early Late Holocene Economies and the Emergence of Complex Social Systems

- Were early Late Holocene logistical forays organized out of seasonally or annually stable semi-sedentary residential bases, or shorter-term habitation areas couched within a system of more frequent residential mobility?
- Are early Late Holocene residential sites situated nearer sources of perennial water than ephemeral water?
- Do logistically-organized hunting activities increase across the Mojave Desert during the early late Holocene?
- Was the procurement of regionally-prolific jasper and chalcedony largely a Gypsum Period phenomenon?
- Is the Holocene source production profile of Coso obsidian seen throughout the Mojave Desert?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable early Late Holocene diagnostics (i.e., Gypsum, Elko, and/or Humboldt projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy, toolstone preferences, and procurement source (particularly obsidian). Those Early Late Holocene sites associated with features and/or faunal remains will be most significantly regarded. Sites with evidence of long-distance trade, such as the presence of *Olivella* shell beads, will also be considered particularly significant.

Late Holocene Economic Transformations

- What caused the reorganization of land-use systems around 900 cal BP? Similarly, what fostered the apparent collapse of Coso obsidian and rock art production?
- How did the introduction of the bow-and-arrow impact regional bighorn sheep populations and attendant hunting strategies?
- When did intensive pinyon exploitation begin in the uplands surrounding the Mojave Desert? Does this resource make its way down to lowland habitations?
- When are Numic populations first apparent in different parts of the Mojave Desert?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable terminal Late Holocene diagnostics (i.e., Rosegate, Desert Side-notched, Cottonwood projectile points, and/or typeable ceramics) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy, toolstone preferences, and procurement source (particularly obsidian). Those terminal Late Holocene sites associated with features and/or faunal remains will be most significantly regarded. Sites with evidence of long-distance trade, such as the presence of *Olivella* shell beads, will also be considered particularly significant, as will those with brownware.

Historical Research Domains and Questions

Generally, the most data-rich features on residential sites are concentrations of domestic artifacts that date to a short time period and can be identified with a particular household or population. Such concentrations of secondarily deposited assemblages are often found in hollow features (such as abandoned wells and privies, and trash pits) which are buried under the ground surface. These deposits are typically made up of household ceramics, glass containers, food bone, and personal accoutrements. Standardized principles designed to assess the archaeological research potential of such historic-era artifact deposits have been widely and effectively used in California since their formalization some 15 years ago (Costello et al. 1998; McIllroy and Praetzellis 1997). Captured by the mnemonic AIMS-R, the principles in this approach address the Association, Integrity, Materials, Stratigraphy, and Rarity of the resource. The approach has also been extended to evaluating the research potential of other types of individual features, as well as to determining the eligibility of sites as a whole (Caltrans 2007:212–213, 2009:196–197). As these principles apply to all of the resource types discussed below, they are briefly defined here:

- <u>*Association*</u>*:* The ability to link an assemblage of artifacts and other cultural remains with an individual household, an ethnic or socio-economic group, or a specific activity or property use.

- *Integrity:* The physical condition of the site or artifact deposit should be in generally the same state as when it was abandoned; exceptions may include a tightly dated site with unequivocal association.
- *Materials:* The potential for interpretation generally increases with the quantity and variety of materials present. A lack of diversity, however, may also be particularly informative.
- *Stratigraphy:* The presence of discrete and intact depositional units—either vertical or horizontal—increases the interpretive possibilities of the site or feature for both temporal differences and distinguishing activity areas.
- *Rarity:* This attribute encompasses those archaeological remains which are uncommon and, because of this, may be important even if they fail to meet other criteria.

Applicable historical regional research domains are related to the major site types for the Mojave Desert, informed by the contextual information provided (i.e., work camps, mining sites, ranches/communities, refuse deposits, water conveyance systems, railways, roads, and military sites. Discussions of each were excerpted directly or with modification from Costello (in Hildebrandt 2016) and Maniery et al. (2016). We will not be evaluating built environment resources (such as communities, water conveyance features, or gas and electric transmission lines) unless it becomes clear that they cannot be avoided by the proposed project. The following sections outline some of the data requirements necessary to evaluate historic-era sites.

Work Camps

Work Camps not only reflected the designs of the employers, but also the reaction of the employees to these conditions. Physical plans for corporate communities often reflected ideals of social interactions on the part of the company: segregation of populations by economic, cultural, or racial affiliations; control of recreational drinking or fraternizing; and health measures to promote sanitation. Four research themes are identified for studying Work Camps: Camp Function, Design, and Conditions; Household Composition and Lifeways; Labor Organization and Management Policy, Immigration and Ethnicity; and Technology. Research questions may include:

- What are the dates of site occupation? Do these coincide with construction periods for adjacent features or structures?
- What is the physical layout of the camp? Is there evidence of structures or infrastructure?
- Was there distinctive landscaping associated with individual homes?
- Is there evidence of socio-economic differences between the refuse from different parts of the camp?

Data Requirements for Eligible Sites

Data requirements include discrete dateable domestic refuse deposits meeting AIMS-R criteria such as found in abandoned privies and cellars, and in refuse deposits and surface sheet refuse. They may also include structures and yard areas with good integrity and containing landscape features.

Mining Sites

As excerpted from Maniery et al. (2016:28) regarding mining sites aboard nearby MCAGCC, which encompasses several named mines incorporated into proposed (although not currently realized) districts, most such sites recommended as eligible preserve foundations, features, evident work and living areas, and concentrations of artifacts that convey a sense of time and place. These physical remains help interpret of a mine's layout, design, and operations, and reflect the importance of the mining industry to the region under Criterion A. In rare cases, the foundations and features at these sites retain adequate integrity to represent specific types of processing activities or extraction methods and have been found to meet Criterion C as a reflection of mining technology (Fryman 2012; Giles and Hardesty 1998; Hardesty 1997; Maniery et al. 2014; Schaefer and Duffield-Stoll 1996).

Most eligible sites were also found important under Criterion D for the wide range of features and artifacts that have the potential to yield new information regarding the develop of mining in the region. Researchers focus on chronological placement of the sites and have used data to explore technological aspects visible in the archaeological and documentary records, including ore extraction and beneficiation technology, as well as technological innovation and transfer and everyday consumerism (Giles and Hardesty 1998:70–77). Pertinent research questions, directly acquired from Maniery et al. (2014) based on Giles and Hardesty (1998), may include:

- Is there evidence of efforts to increase productivity through the application of new technologies?
- To what extent is a new technology employed over adaptive reuse of existing technology and is this evident in the archaeological record?
- Did changes in technology or management practices influence the layout of the operation or workforce?
- Are the technologies older than those commonly used during the same time period?
- What was the role of a particular business or operation in regional growth and economic development?
- Is there evidence of expensive or imported materials and technology?
- Who invested in the operation?
- Is there evidence of class segregation?
- Is there evidence of adaptive reuse of tools, artifacts, or other items?

Data Requirements for Eligible Sites

Data requirements for eligible sites include artifacts contained in discrete, undisturbed deposits, as well as specific documentary, archaeological, and/or oral interview information regarding technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy (Maniery et al. 2016:32–42).

Agricultural Properties: Small Ranches/Communities

Current research issues for rural ranch homesteads focus both on domestic household studies and on the ranch as an agricultural enterprise. Successful archaeological studies, coupled with thorough documentary research, provide important reconstructions of ranch economics, subsistence activities, social behavior, ethnic attributes, and demographics. When used as a comparative database, homestead sites can provide information on differences between urban and rural households, households from different regions, and homesteads from different time periods. Assessments can be made of how households with different attributes adapted to national and regional events. Archaeological studies also address technological and landscape issues, interpreting use of space as another measure of class, ethnicity, and modernization.

A Historical Context and Archaeological Research Design for Agricultural Properties in California (Caltrans 2007) was developed to serve as a framework for evaluations and to promote consistency and inter-site comparisons. It includes a historic context covering the historical events between 1850 and 1945 along with changes in the diversity of production and in innovative technologies. Six research themes are identified in the Agricultural research design (Caltrans 2007), and key feature types have been identified that support research within these themes (Medin 2008): Site Structure and Land-Use Patterns; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Specific research topics may include:

- What was the time period of site occupation?
- Is there evidence for multiple—contemporary or sequential—households occupying the site? Can these households be defined by demographics (age, gender, socio-economic status)? Is there evidence for occupation by distinct ethnic populations, particularly Chinese in recent decades?
- Is there evidence for changing patterns of agricultural practices? Did the site occupants respond to changes in agricultural technologies and practices taking place in the state and region?
- Is there evidence for identifying the workforce at the site, and changes in this population over time?

Data Requirements for Eligible Sites

Data Requirements include dateable features such as structure foundations and the water tank; and artifact deposits satisfying AIMS-R criteria such as found in abandoned privies and cellars, and in refuse deposits and surface sheet refuse. Evidence of changes in the site landscape including abandonment or renovations to structures and facilities, and new construction replacing older structures is also considered important. We do not plan to evaluate ranches or communities unless such sites cannot be avoided by the project (in which case they will be referred for formal Phase II evaluation).

Refuse Deposits

Specific research topics for refuse deposits may include:

- What is the age of deposit?
- What activities of the source population are reflected in the artifacts?
- What are the demographics of the source population including age, gender, and ethnicity?

Data Requirements for Eligible Sites

Data requirements include sufficient artifacts that can be dated to specific time periods to identify the time span of deposition. Particularly sensitive indicators are cans, which have an estimated one-year time lag between manufacture and deposition. Glass containers have and estimated seven-year time lag, while ceramics average 20 years (Adams 1977). Demographic information on the source population can often be determined by the types of artifacts present and their relative quantities. For example, temporary campsites are dominated by small-size food cans; those associated with aqueduct or railway construction often also contain containers from blasting powder. These camps are also confined to a narrow time-period of ca. 1908–1912. Domestic households with women and, perhaps, children typically contain ceramic tablewares and some decorative household items. Architectural remains such as window glass and nails suggest the source population resides in a building, and not at an itinerant camp.

Roads and Trails

Documentary research for roads and trails attempts to identify them in meaningful stretches—from one key location to another to place their significance assessments within a historic context. However, these linear resources are generally encountered as small preserved segments, or as limited stretches passing through Cultural Resources Management (CRM) project boundaries. Methods of recording these transportation routes, therefore, allow for the overall resource to be addressed for its local, regional, or national importance and for the integrity appraisal—for those resources deemed potentially eligible to the National Register—to proceed on a segment-by-segment basis.

Significance assessments relate roads with the larger historic context of transportation development in the western United States. Caltrans' *Historical Trails and Roads in California, A Cultural Resources Planning Study* (Owens 1991) describes criteria for assessing the importance of California's historic-era roads with categories including communications, engineering, exploration and settlement, or historic landscapes. A classification system employing eight types of roads is proposed; roads in the project area fall into the categories Wagon Roads and Stage Roads, and Improved Roads and State Highways.

Roads, like water systems, are most often found eligible to the National Register under Criteria A and C: their association with important events or engineering accomplishments. Under Criterion D, the evolving route of a road is key to identifying the historical development of a region and the data potential of a road site is often satisfied once these routes and their associated features are recorded. The NPS devoted several issues of their publication *CRM* to roads: "Historic Transportation Corridors" (Vol. 16, No. 3, 1993); "The Automobile Landscape" (Vol. 19, No. 9, 1996) and "CRM and the National Trails System" (Vol. 20, No. 1, 1997). The NPS has also produced *The Preservation Office Guide to Historic Roads* to assist State Historic Preservation Officers evaluate these resources (Marriott 2010).

The construction and use date of the road segments will be verified, along with their relationships to historic routes. Attachment 4 of Caltrans' Programmatic Agreement (2004) identified as not eligible isolated segments of bypassed roads which were less than 50 years old; dating the segments is therefore a priority. Assessment of the historic-era road segments in the project area will also attempt to describe these roads, their locations, and their potential significance according to National Register criteria with greater clarity.

Utilities

Like roads and trails, water systems and transmission lines are researched in their entirety to provide a historic context for evaluation. Furthermore, they are often encountered in segments and are therefore incrementally assessed for integrity. Significance assessments relate water and transmission systems with the larger historic context of water and power development in the western United States, one of the most important influences on this region's economic development, politics, and settlement patterns.

Evaluation and interpretation of such features includes not only their physical identification on the ground (where extant), but the political motives, financing arrangements, and eventual abandonment all contribute toward understanding the importance of the facility. Most sites determined eligible to the National Register are important under Criterion A, association with important events; and secondly under Criterion C, and association with engineering values. While association with important persons (Criterion B) and information potential (Criterion D) are also represented, they are relatively rare.

Military Sites

Should military features be encountered in the project area, they will be evaluated for eligibility using the criteria outlined above (AIMS-R). Given the ubiquity of such features in the general area, and the fact that most do not retain a high degree of integrity (Carpenter and Maniery 2009), we do not anticipate encountering eligible sites related to military activity.

CHAPTER 6. METHODS

Large portions of the Line 300A/B corridors were inventoried by Far Western in 2013 (Higgins et al. 2013). For the current project, Far Western inventoried all work locations and access roads in the project APE except for access roads that fell within the L-300 A/B corridor surveyed in 2013. Inventoried acreages are shown in Table 10. As noted, the acreages represented in Table 10 do not reflect that of the entire APE (ca. 5,293 acres total), but rather just those surveyed for the current project. The remainder was covered in a previous Far Western cultural resources inventory of the L-300 A/B corridor (Higgins et al. 2013). Likewise, these acreages do not account for post-survey adjustments to avoid adverse project effects. These adjustments removed 2.13 acres of access roads and bridge bypasses (ca. 0.1 miles), and 4.33 acres of work locations.

To improve further upon previous efforts completed by Far Western for the L-300 project area, BLM required Far Western to fully re-record and evaluate all sites and roads previously documented and previously reported upon by Far Western (Higgins et al. 2013) that intersect current L-300 project areas. We also updated, where needed, and evaluated all other previously recorded sites that intersect the APE. Inventory methods are outlined below.

Table 10. Survey Acreages.

LOCATION TYPE	SURVEYED ACRES
Access Roads, Bridge Bypasses	1,330.8
Locations	1,161.0
Total	**2,491.8**
Number of Consolidated Locations to Survey (Excavation Areas, ILI Locations, Laydown Areas, and Staging Yards)	96
Miles of Access Roads and Bridge Bypasses to Newly Inventory	103.3

LINEAR SURVEY AREAS

Pedestrian survey of all project linear project areas not previously captured by buffered linear inventories (i.e., Higgins et al. 2013) were conducted by two-to-four-person teams, with one person examining up to 15 meters from the sides of roads and bridge bypasses. In situations where the width of an existing access road exceeded 30 meters in total width, one person each will surveyed road edges within a buffer of 15 meters. For linear project areas extending greater than one mile (ca. 1,610 meters), survey proceeded following a flag-and run-strategy, whereby crews briefly documented newly encountered site-sized resources, including approximate dimensions, observed constituents, and central GPS locations, so that the sites could be fully recorded in a subsequent visit as to not unduly impede coverage progress.

BLOCK SURVEY AREAS

Pedestrian surveys of all project block areas (e.g., excavation areas, laydown areas, ILI locations, and staging yards), incorporating 50-meter peripheral buffers, proceeded in 15-meter interval transects by teams of two to four individuals. All newly found resources were recorded on encounter, and any previously recorded resources that were within or overlapped these block areas were also updated upon encounter.

RESOURCE RECORDATION

New resource documentation procedures applied broadly to most sites, regardless of vintage. However, selective recordation strategies were employed for certain high-density resources, such as prehistoric pavement quarries and historic-era refuse deposits. Where questions arose in the field about documentation efforts or where particularly large, complex sites were encountered, Far Western consulted directly with BLM to determine how best to proceed. To further expedite the recordation process, Apple® iPads® were employed to secure basic data and most photographs for sites and isolates, using the Survey123® application.

Upon encounter of new resources, crews broke from transect coverage to establish the character of the resource (i.e., site versus isolate), its relative age (i.e., prehistoric, historic-era, multi-component), and assess its extent. For sites, crews conducted close-interval ground inspections, pin-flagged all observed cultural items (individual flakes, tools, features, etc., if not in extreme abundance). The distribution of pin-flags, in combination with landform and setting, served to delineate site boundaries. Efforts were extended to documents site boundaries extending outside of project APEs onto federal and state lands in full. Linear sites, such as trails, roads, and railroad routes, were only be documented extending up to upwards of 0.25 miles (ca. 400 meters) from the edges of project APEs onto federal and state lands.

Site datum, features, roads/trails, and diagnostic artifacts were georeferenced with a hand-held Trimble® Geo7x® GPS device, with which UTM coordinates (Zone 11N, NAD83, reflecting a 20-shot average for points) secured to submeter accuracy (i.e., ±50 centimeters). Wooden stakes or other permanent datum markers were not embedded as site markers, rather digital datums or site centroids were georeferenced.

Formed, ground, and/or otherwise diagnostic artifact data were documented following standardized protocol on Apple iPads. Only samples of lithic debris (ca. 25 pieces) were tallied and characterized among prehistoric or multi-component sites with greater than 50 estimated pieces of debitage, including recordation of flake size, material, and general flaking strategy (i.e., core versus early or late biface reduction). Otherwise, all flakes at smaller sites were characterized accordingly. Documentation of historic-period sites emphasized data most useful for defining functional use areas and determining the chronological placement of these areas and associated features. All features were described and photographed. Manufacturing marks, embossing, and technological characteristics of bottles, cans, ceramics, and other materials were documented and quantified as needed to distinguish chronological components.

HUMAN REMAINS

Federal law requires immediate reporting when Native American remains are discovered on public lands (Native American Graves Protection and Repatriation Act; Public Law 101-601; 104 Stat. 3048; Title 25, Chapter 32, Section 3001 of the US Code). Human remains were not encountered.

ARTIFACT COLLECTION AND CURATION

A no-collection policy was followed on this project and, thus, no cataloguing or laboratory analysis was necessary.

CHAPTER 7. RESULTS

A total of 99 newly found sites, including 19 prehistoric resources, four multicomponent, and 76 dating to the historic era were documented and assessed for eligibility during the current project. Newly recorded historic-era sites include the Essex townsite, a foundation, four mining sites, two railroad grades, 54 refuse deposits (of which seven are associated with other historical features or prehistoric isolated artifacts), seven road segments, eight rock feature sites (mining or recreation related), a telegraph line, and a late nineteenth-century Chinese worker's camp. These variably date between the late nineteenth and mid- to late twentieth century. The historical components among multicomponent sites include foundations associated with refuse, two other refuse deposits, and a road segment.

Prehistoric sites include a complex occupation with charcoal visibly surrounding surface ground stone, eight campsites (of which two also contain FAR), five lithic reduction stations, and five pavement quarries or single SRLs surrounded by diffuse debitage scatters. Among multicomponent sites, prehistoric components include two campsites, a pavement quarry, and a lithic reduction station. Temporally diagnostic prehistoric artifacts were not found with any of these prehistoric components, although the complex occupation and two campsites with FAR have the potential to yield direct dates. These 99 new sites are described below.

The records of 90 sites with trinomials and/or primary numbers (not accounting for several new segments of SBR-2910H and SBR-6693H) were updated during the current projects, previous updates and current findings for which are detailed in the following sections and presented as updated records in Confidential Appendix G. Site summary information and eligibility recommendations are provided in Table 11, and individual site descriptions are detailed in the following sections.

Site locations are listed in Confidential Appendix D, and those of isolates along with their full descriptive data area in Confidential Appendix E. Newly found and updated resource locations are displayed in Confidential Appendix F maps. Site record updates are in Confidential Appendix G, and new site records comprise Confidential Appendix H.

PREVIOUSLY RECORDED SITES AND UPDATES

The records of 90 sites with trinomials and/or primary numbers (not accounting for six new segments of SBR-2910H and four new segments of SBR-6693H) were updated during the current projects, previous updates and current findings for which are detailed in the following sections and presented as updated records in Confidential Appendix G.

CA-SBR-1804 (P-36-001804; Destroyed/Not Re-located)

This prehistoric site complex consisting of multiple localities was recorded by various individuals, including G. Smith and R. Reynolds, as early as 1970. Available records for these localities are spotty regarding location and constituent data. Those that intersect the current project APE (i.e., P-36-001804-12 and P-36-001804-1) are labeled "Troy Lake II" and "Troy Lake 5," respectively, suggesting they were documented as part of Simpson's (1965) Troy Lake inventory. Available records indicate that the former (P-36-001804-12) consisted of an unidentified quantity of flakes, while the latter (P-36-001804-1) included FGV and obsidian debitage alongside concave base bifaces, leaf shaped knives, possible crude crescents, and a Pinto projectile point. Neither locality was ever evaluated, according to available records.

Far Western revisited both localities in March 2018 and failed to find cultural material at either. It is assumed that georeferenced locations are inaccurate and that the observed constituents were long ago recorded as another site in the region (e.g., SBR-5794), and/or that the localities have since been destroyed.

Table 11. L-300 Site Summary.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m^2)	Buried Prehistoric Sensitivity
Previously Recorded Sites and Updates							
1	CA-SBR-1804	P	Unknown	Multiple Prehistoric	na	na	Lowest
-	*P-36-001804-1*	P	Unknown	Campsite	286.5 x 286.5	43,149.5	Lowest
-	*P-36-001804-12*	P	Unknown	Lithic Reduction Station	na	na	Lowest
2	CA-SBR-1908/H	M	Lake Mojave (P), Unknown (H)	Refuse Deposit (H) + Pavement Quarry (P) + Rock Features (U)	2,082 x 210	482,750.7	Lowest
3	CA-SBR-2084/H	M	Unknown (P), Post-1947 (H)	Campsite (P) + Isolated Bottle (H)	75 x 29	1,811.6	Lowest
4	CA-SBR-2328/H	M	Unknown (P), 1915–1930s (H)	Pavement Quarry (P) + Refuse Deposit (H) + Rock Features (H)	2,347 x 1,294	2,649,193.3	Lowest
5	CA-SBR-2340H	H	1905–1943	Railroad + Foundations + Refuse Deposit	753	na	na
6	CA-SBR-2910H (including Segments 6-19)	H	1911-1960s	Road (National Trail)	1,037	na	na
7	CA-SBR-3076	P	Unknown	Campsite	194 x 85	14,286.8	Lowest
8	CA-SBR-3276H	H	1933–1960s	Community (Chambless)	531 x 304	107,146.0	na
9	CA-SBR-3277H	H	1930s–1970s	Community (Cadiz Summit)	1,007 x 125	145,574.6	na
10	CA-SBR-3278H	H	1920s–1960s	Community (Danby)	540 x 385	154,414.4	na
11	CA-SBR-3284H	H	1883–1970s	Community (Amboy)	1,370 x 978	1,011,277.9	na
12	CA-SBR-4165H	H	1915–1948	Railroad (Argos Siding)	102 x 62	4,996.8	na
13	CA-SBR-4681	P	Lake Mojave and after	Pavement Quarry	368 x 161	25,671.9	Lowest
14	CA-SBR-5794/13126/H	M	Pinto-Elko (P), 1889-1964 (H)	Limited occupation (P) + Rock Features (U) + Refuse Deposit (H)	2,195 x 911	1,797,973.1	Low
15	CA-SBR-5797	P	Unknown	SRL	11 x 4	31.9	Lowest
16	CA-SBR-5798	P	Unknown	Pavement Quarry	160 x 73	10,191.3	Lowest
17	CA-SBR-5799	P	Unknown	Pavement Quarry	na	na	Low
18	CA-SBR-5800	P	Unknown	Lithic Reduction Station	na	na	Lowest
19	CA-SBR-5801	P	Unknown	Pavement Quarry	na	na	Lowest
20	CA-SBR-5807	P	Unknown	Lithic Reduction Station	na	na	Lowest
21	CA-SBR-5808	P	Unknown	Lithic Reduction Station	na	na	Lowest
22	CA-SBR-6404H	H	1960s	Road (Crucero Road) + Refuse Deposit	81	na	na
23	CA-SBR-6515	P	Unknown	Pavement Quarry	664 x 126	81,330.1	Lowest
24	CA-SBR-6530H	H	Unknown	Refuse Deposit	418 x 138	52,335.3	na
25	CA-SBR-6693H (including Segments D-F)	H	Post-1883	Railroad	15,359	na	na
26	CA-SBR-8920H	H	Post-1882	Community (Ludlow)	910 x 770	382,465.8	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m²)	Buried Prehistoric Sensitivity
Previously Recorded Sites and Updates continued							
27	CA-SBR-10637	P	Unknown	Campsite	91 x 35	2,476.6	Lowest
28	CA-SBR-10649	P	Unknown	SRL	15 x 4	57.5	Lowest
29	CA-SBR-10650H	H	1930s–1960s	Refuse Deposit	12 x 8	72.2	na
30	CA-SBR-11583H	H	Post-1896	Road	24	na	na
31	CA-SBR-11586H	H	1935–1960s	Road	52	na	na
32	CA-SBR-12918H	H	1950–1960	Refuse Deposit	119 x 38	3,804.8	na
33	CA-SBR-12999H	H	1890s–1960s	Refuse Deposit	387 x 51	20,467.0	na
34	CA-SBR-13038/13040/H	M	Unknown (P), Unknown (H)	Pavement Quarry (P) + Mining (H; Claim Cairn)	657 x 166	79,635.7	Lowest
35	CA-SBR-13041	P	Unknown	Campsite + Rock Feature	611 x 237	82,101.2	Lowest
36	CA-SBR-13101/H	M	Unknown (P), Post-19th Century (H)	Refuse deposit (H) + Campsite (P)	289 x 46	10,350.0	Lowest
37	CA-SBR-13103/H	M	Unknown (P), 1935–1952 (H)	Refuse deposit (H) + Campsite (P)	139 x 11	2,143.9	Lowest
38	CA-SBR-13114H	H	1961	Utility (Transmission)	95	na	na
39	CA-SBR-13115H	H	1930s	Utility (Transmission)	97	na	na
40	CA-SBR-13116H	H	1930s	Utility (Transmission)	7	na	na
41	CA-SBR-13117H	H	1940	Utility (Substation)	141 x 93	8,777.7	na
42	CA-SBR-13118H	H	1940	Road (Hector Road)	71	na	na
43	CA-SBR-13119H	H	Post-1955	Road (Pisgah Crater Road)	na	na	na
44	CA-SBR-13449/H	M	Unknown (P), 1912–1950s (H)	Refuse Deposit (H) + Pavement Quarry + Ground Stone (P)	928 x 284	156,407.7	Lowest
45	CA-SBR-13619H	H	Pre-1956	Road	1,538	na	na
46	CA-SBR-13768	P	Unknown	Pavement quarry	138 x 9	2,652.7	Lowest
47	CA-SBR-15114H	H	Post-1893	Road (Danby-Parker & Skeleton Pass Road)	4,795	na	na
48	CA-SBR-15115H	H	1896–1913	Road (Sunflower Springs Road)	515	na	na
49	CA-SBR-15439	P	Unknown	Campsite	87 x 34	2,768.5	Lowest
50	CA-SBR-15440/H	M	Unknown (P), 1935–1960 (H)	Refuse Deposit (H) + Campsite (P)	537 x 147	69,608.8	Lowest
51	CA-SBR-15443/H	M	Unknown (P), 20th Century (H)	Refuse Deposit (H) + Lithic Reduction Station (P)	164 x 85	9,375.5	Lowest
52	CA-SBR-15857/H	H	1950–1951	Utility (Transmission)	52	na	na
53	CA-SBR-16742H	H	1940–1960	Road (Mac Tul Road) + Refuse Deposit	516	na	na
54	CA-SBR-16759H	H	1915–1978	Refuse Deposit	6 x 4	21.9	na
55	CA-SBR-16773	P	Unknown	Lithic Reduction Station	106 x 47	3,538.9	High
56	CA-SBR-16782	P	Pinto	Campsite	305 x 131	24,586.7	Lowest
57	CA-SBR-16784H	H	1935–1960s	Refuse Deposit + Rock Feature	41 x 8	377.3	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m²)	Buried Prehistoric Sensitivity
Previous Sites and Updates continued							
58	CA-SBR-16785	P	Unknown	Pavement Quarry	41 x 28	816.3	Low
59	CA-SBR-16786H	H	1940s–1950s	Refuse Deposit	155 x 18	3,428.7	na
60	CA-SBR-16787H	H	1935–1970s	Refuse Deposit + Rock Feature	207 x 178	26,327.8	na
61	CA-SBR-17101H	H	1883	Community (Bagdad)	908 x 757	530,186.4	na
62	CA-SBR-29795H	H	1935–1960s	Refuse Deposit	63 x 38	1,482.5	na
63	CA-SBR-29796H	H	1900–1960	Refuse Deposit	207 x 44	10,464.7	na
64	CA-SBR-29798H	H	1890s–1980s	Refuse Deposit	236 x 36	9,588.9	na
65	CA-SBR-31747H	H	1958	Refuse Deposit	88 x 50	3377.2	na
66	P-36-020271	H	Pre-1955	Road (Lavic/Kenton Mill Road)	8	na	na
67	P-36-026456	H	Pre-1955	Road (BLM Road 6707)	11	na	na
68	P-36-026459	H	1940s–1960s	Road	531	na	na
69	P-36-026460	H	Pre-1956	Utility (Transmission)	7	na	na
70	P-36-026468	H	Pre-1955	Road	8	na	na
71	P-36-026469	H	Pre-1954	Road	8	na	na
72	P-36-026470	H	Pre-1954	Road	91	na	na
73	P-36-026486	H	Pre-1955	Road	67	na	na
74	P-36-026490	H	1939–1957	Road + Refuse Deposit	87	na	na
75	P-36-026491	H	Pre-1955	Road	4,164	na	na
76	P-36-026492	H	Pre-1955	Road	3	na	na
77	P-36-026493	H	Pre-1955	Road	5	na	na
78	P-36-026494	H	post-1953	Road	600	na	na
79	P-36-026495	H	1954–1956	Road	24	na	na
80	P-36-026496	H	Pre-1956	Road	6	na	na
81	P-36-026499	H	Pre-1950	Road (Parker Road)	92	na	na
82	P-36-026518	H	Pre-1955	Road	65	na	na
83	P-36-026519	H	1935–1960s	Road	28	na	na
84	P-36-026532	H	Pre-1956	Road	7	na	na
85	P-36-026541	H	Pre-1956	Road	21	na	na
86	P-36-026542	H	Pre-1954	Road	9,412	na	na
87	P-36-026543	H	1935–1960s	Road	53	na	na
88	P-36-027530	H	Pre-1955	Water Control	1	na	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m^2)	Buried Prehistoric Sensitivity
Previously Recorded Sites and Updates continued							
89	P-36-027752	H	1968–1969	Utility (Transmission)	93	na	na
90	P-36-027757	H	1968–1969	Utility (Transmission)	63	na	na
New Sites							
1	AU-X1	H	Unknown	Rock Feature (Cairn)	25 x 14	265.6	na
2	AU-X2	H	Mid-20th Century	Refuse Deposit	18 x 13	194.9	na
3	AU-X3	H	20th Century	Refuse Deposit + Isolated Debitage	105 x 102	5,189.0	na
4	EG-X7	P	Unknown	Campsite + FAR	51 x 45	1,624.7	Moderate
5	EG-X8	P	Unknown	Campsite	15 x 14	149.6	High
6	EG-X9	M	Unknown (P), 1935-1960s (H)	Refuse deposit (H) + Campsite (P)	291 x 111	33,199.7	Low
7	EG-X10	P	Unknown	Campsite	177 x 106	12,000.0	Lowest
8	EG-X11	P	Unknown	Campsite	59 x 16	788.8	Low
9	EG-X12	P	Unknown	Pavement Quarry	74 x 44	2,473.8	Low
10	EG-X13	H	1939–1957	Mining (Ore Exploration)	39 x 21	652.8	na
11	EG-X14	H	1941–1947	Railroad	575	na	na
12	EG-X15	H	Unknown	Mining (Claim Cairn)	884	na	na
13	EG-X16	H	Post-1915	Railroad + Refuse Deposit	160	na	na
14	EG-X17	M	Post-1956	Road (H) + Lithic Reduction Station (P)	362 x 88	26,719.7	Lowest
15	EG-X18	H	1910s–1960s	Refuse Deposit + Road	22 x 21	324.8	na
16	EG-X19	H	Unknown	Rock Feature Complex	138 x 68	6,896.2	na
17	EG-X20	H	1950s–1960s	Refuse Deposit + Rock Feature	31 x 15	380.6	na
18	EG-X21	H	1920–1964	Refuse Deposit	2 x 2	3.1	na
19	EG-X22	H	Early-to-Mid-20th Century	Refuse Deposit	63 x 19	1,057.2	na
20	EG-X23	H	1935–1956	Refuse Deposit	57 x 23	1,191.2	na
21	EG-X24	H	1915–1930s	Refuse Deposit	28 x 20	444.7	na
22	EG-X25	H	1910s–1980s	Refuse Deposit	3 x 3	7.3	na
23	EG-X26	H	1931–1960s	Refuse Deposit	1 x 1	1.2	na
24	EG-X27	H	Unknown	Rock Feature (Cairn)	2 x 2	1.8	na
25	EG-X28	H	Unknown	Rock Feature (Claim Cairn)	28 x 23	452.9	na
26	EG-X29	H	Unknown	Rock Feature (Claim Cairn)	31 x 19	500.9	na
27	EG-X30	H	Mid-20th Century	Mining (Shaft) + Refuse Deposit	51 x 37	1,308.6	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m^2)	Buried Prehistoric Sensitivity
New Sites continued							
28	EG-X31	H	1885–1930	Refuse Deposit	68 x 15	1,109.4	na
29	EM-X16	H	1906–1930	Refuse Deposit	212 x 76	11,860.4	na
30	EM-X17	H	1915–1956	Refuse Deposit	884	na	na
31	EM-X18	P	Unknown	Pavement Quarry	24 x 15	221.6	Lowest
32	EM-X19	P	Unknown	Lithic Reduction Station	21 x 16	245.7	Lowest
33	EM-X20	P	Unknown	Lithic Reduction Station	17 x 10	111.2	Lowest
34	EM-X21	P	Unknown	Campsite	42 x 36	1,024.3	Lowest
35	EM-X22	P	Unknown	SRL	30 x 17	348.2	Lowest
36	EM-X23	P	Unknown	Campsite	39 x 26	754.5	Lowest
37	EM-X24	H	1903–1929	Refuse Deposit	107 x 62	4,815.8	na
38	EM-X25	H	ca. 1882	Work Camp (Chinese)	33 x 13	363.4	na
39	EM-X26	H	1915–1930	Refuse Deposit	47 x 27	992.7	na
40	EM-X27	H	1915–1926	Refuse Deposit	71 x 20	1,472.7	na
41	EM-X28	H	1915–1964	Refuse Deposit	90 x 42	2,725.1	na
42	EM-X29	H	1915–1970	Refuse Deposit	37 x 29	769.6	na
43	EM-X30	H	1915–1964	Refuse Deposit	183 x 85	12,057.3	na
44	EM-X31	H	1910s–1930s	Refuse Deposit + Foundations	76 x 35	2,576.1	na
45	EM-X32	H	20th Century	Refuse Deposit + Rock Feature	18 x 7	114.7	na
46	EM-X33	H	1930s–1962	Refuse Deposit	21 x 8	114.2	na
47	EM-X34	H	1880s–1930	Refuse Deposit	74 x 44	2,659.4	na
48	EM-X35	H	1915–1925	Refuse Deposit	24 x 18	335.8	na
49	EM-X36	H	1875–1957	Refuse Deposit	19 x 14	208.1	na
50	EM-X37	H	1910s–1960s	Road	35	na	na
51	EM-X38	H	1885–1960s	Refuse Deposit	61 x 22	1,174.4	na
52	EM-X39	H	1900–1930	Refuse Deposit	31 x 15	347.1	na
53	EM-X40	H	1935–1960s	Refuse Deposit	4 x 4	9.0	na
54	EM-X41	H	1917–1970s	Refuse Deposit	27 x 12	258.3	na
55	EM-X42	H	1954–1985	Foundation	3 x 3	7.1	na
56	EM-X43	H	Post-1954	Rock Feature Complex + Refuse Deposit	57 x 37	1,425.2	na
57	EM-X44	H	Post-1954	Rock Feature Complex + Refuse Deposit	57 x 15	770.5	na
58	EM-X45	H	1880s	Community (Essex Community)	1,345 x 387	421,709.8	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m²)	Buried Prehistoric Sensitivity
New Sites continued							
59	EM-X46	H	1917–1985	Refuse Deposit	4 x 4	12.6	na
60	EM-X47	H	1920s–1964	Refuse Deposit	20 x 12	166.8	na
61	EM-X48	H	1915–1930	Refuse Deposit	43 x 18	673.6	na
62	EM-X49	H	1907–1960	Refuse Deposit	55 x 44	1,792.7	na
63	EM-X50	H	1915–1930	Refuse Deposit	64 x 46	2,096.2	na
64	EM-X53	P	Unknown	Campsite	na	na	Lowest
65	EM-X55	H	1915–1930s	Refuse Deposit	19 x 14	215.2	na
66	EM-X56	H	1885–1904	Refuse Deposit	16 x 12	142.1	na
67	EM-X57	H	1917–1985	Refuse Deposit	27 x 18	395.1	na
68	EM-X58	H	20th Century	Refuse Deposit	28 x 21	461.0	na
69	KR-X1	H	Early 20th Century	Refuse Deposit + Isolated Debitage	23 x 11	204.5	na
70	MM-X1	H	1935–1960s	Refuse Deposit	45 x 14	618.2	na
71	NS-X1	H	1917–1929	Refuse Deposit	15 x 13	149.8	na
72	NS-X2	H	1950s	Refuse Deposit	17 x 14	176.2	na
73	RB-X2	P	Unknown	Campsite + FAR	37 x 10	352.3	Highest
74	RB-X6	H	Pre-1955	Road	5; 541; 1,112	na	na
75	RB-X10	H	Pre-1955	Road	99 x 0	na	na
76	RB-X11	H	Pre-1955	Road	7 x 0	na	na
77	RB-X12	H	Post-1954	Road	85 x 0	na	na
78	RB-X13	H	Pre-1956	Road	35 x 0	na	na
79	SN-X13	P	Unknown	Complex Occupation	64 x 21	1,171.2	Lowest
80	SN-X14	P	Unknown	Lithic Reduction Station	18 x 17	197.1	Lowest
81	SN-X15	P	Unknown	Lithic Reduction Station	25 x 14	233.9	Lowest
82	SN-X16	H	Unknown	Rock Feature (Cairn)	1 x 0.9	0.9	na
83	SN-X17	H	1930-1968	Refuse Deposit	36 x 16	388.1	na
84	SN-X19	P	Unknown	SRL	17 x 10	137.4	Lowest
85	SN-X20	H	Mid-20th Century	Refuse Deposit	13 x 10	99.9	na
86	SN-X22	H	1914–1930s	Road	545	na	na
87	SN-X23	H	1930s–1960s	Refuse Deposit	18 x 10	147.8	na
88	SN-X24	H	1900s–1960s	Refuse Deposit	7 x 5	28.7	na
89	SN-X27	H	1915–1978	Refuse Deposit	27 x 9	213.5	na

Table 11. L-300 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m^2)	Buried Prehistoric Sensitivity
New Sites continued							
90	SN-X29	H	post-1940	Refuse Deposit	11 x 8	66.0	na
91	SR-X6	P	Unknown	Pavement Quarry	47 x 35	1,181.7	Low
92	SR-X7	M	Unknown (P), 1935–1960s (H)	Refuse Deposit (H) + Pavement Quarry (P)	81 x 33	2,188.3	Low
93	SR-X8	P	Unknown	Lithic Reduction Station	19 x 11	172.7	Low
94	SR-X10	H	1920–1930	Refuse Deposit + Isolated Flake Tool	1,584 x 86	121,204.3	na
95	SR-X11	H	1880s–1960s	Utility (Telegraph)	4,927	na	na
96	SR-X12	H	post-1955	Mining (Prospect Complex)	126 x 46	4,585.8	na
97	SR-X13	H	1930s–1950s	Refuse Deposit	2 x 1	1.4	na
98	SR-X14	H	1903–1968	Refuse Deposit	208 x 45	7,585.1	na
99	SR-X15	M	Unknown (P), Early 20th Century (H)	Foundations + Refuse (H) + Campsite (P)	102 x 62	4,996.8	Lowest

Previous attempts to re-locate primary numbers in the 1800-series have been variably successful, especially those recorded by Smith, as he is known to have often documented inaccurate proveniences to discourage vandalism (Byerly 2013:49).

CA-SBR-1908/H (P-36-001908)

This massive multi-component site, consisting of a prehistoric pavement quarry and historical refuse deposit, was originally recorded in 1965, and subsequently updated on multiple occasions between 1980 and 2013. On one of these occasions, a portion of the prehistoric component along the northern margin of Hector Road was test-excavated (McGuire 1990). The prehistoric component includes more than 300 jasper, chalcedony, and felsite SRLs, together encompassing numerous flakes, cores, and/or bifaces; an Early Holocene Silver Lake projectile point was also recovered during the 1990 test excavation. The historical refuse deposit, which was documented in 2008 (Nixon 2008), was noted to consist of miscellaneous cans, glassware, ceramics, and hardware of an unspecified age. Two rock hearths and a cairn were also documented during the 2008 update. The site was completely re-surveyed for the Calico Solar Project in 2010, during which more than 500 previously undocumented stacked rock features were recorded (Nixon et al. 2010).

The historical component was not previously evaluated, but the prehistoric component was determined ineligible for listing by the California Office of Historic Preservation (OHP) in 1990. The prehistoric component was re-evaluated in 2010. The stacked rock features, which were associated with the prehistoric component despite a lack of associated temporally diagnostic materials, were recommended eligible under Criterion D, but the historical component and the SRLs associated with the prehistoric component were considered non-contributing portions to site eligibility (Nixon et al. 2010). BLM subsequently determined the entire site eligible under Criterion D, with which SHPO concurred (Donaldson 2010).

In 2013, the site was revisited by Far Western as part of an inventory of the L-300 pipeline corridor, and the site portion intersected by this corridor was noted to be as previously described, with no new impacts (Higgins et al. 2013). In February 2018, Far Western again resurveyed that portion of the site intersected by the L-300 pipeline corridor and work areas associated with the current project. Five of the previously documented SRLs within the corridor were re-located, along with a previously recorded core, but three other intersected SRLs were not re-located. A newly found large cobble core was also described and georeferenced.

Nine of the 500+ rock features (i.e., F427 through F435) documented in 2010 are within the APEs of proposed access roads transecting the site area, which overprint the L-300 A/B corridors, but these features were not observed during Far Western's current or 2013 survey. These variably range between 0.9 and 4.7 square meters and incorporate anywhere between 14 and 50 cobbles and smaller gravels, and most of which are not embedded in the ground surface. Three (i.e., F432, F434, and F435) are reported to be within 30 centimeters of prehistoric material, and one other (F431) incorporates debitage.

Far Western has no basis to disagree with the previous BLM and SHPO determinations that the site is eligible for listing under Criterion D but agree with Nixon et al. (2010) that the SRLs should be considered non-contributing elements. It is recommended that the nine rock features within the access road APEs be fenced-off, temporarily, to mitigate any potential adverse effects.

CA-SBR-2084/H (P-36-002084)

This multi-component site is within a lava blister near the terminal reaches of the Pisgah Crater lava flow. It was originally recorded in 1966 as a lithic scatter with an unspecified number of flakes. Far Western re-located and re-recorded the site in 2013, during which 83 mostly biface reduction flakes (82 CCS biface reduction and one FGV core reduction) and one red-brown biface were documented alongside a glass bottle manufactured in 1947. The L-300 pipeline corridor and an associated access road intersect the southern portion of the site.

Far Western revisited the site in February 2018 and observed more flakes than originally documented (ca. 100), re-located the previously recorded fine pressure biface fragment (-3.8 x -3 x 1 centimeters), and found another whole CCS biface broken into two refittable pieces (4.8 x 4.2 x 1.5 centimeters). The site boundary was not adjusted, and no additional site impacts were noted.

The site is not clearly associated with a significant event or individual (Criterion A), makes no contribution to the broad patterns of regional history, is not obviously linked to a significant figure (Criterion B/2), and does not embody distinctive characteristics or components (Criterion C) as evidenced by the lack of temporally diagnostic artifacts and considering the low diversity of the observable assemblage. As such, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits, the site does not significantly contribute to regional research themes (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

CA-SBR-2328/H (P-36-002328)

This massive multi-component site is south of I-40, extending southeast from the intersection of National Trails Highway and Lavic Road toward the Burlington Northern and Santa Fe (BNSF) railroad. It was originally recorded in 1977 and subsequently updated in 1980. The 1977 record described a prehistoric quarry incorporating numerous rock piles (presumably SRLs) of red, brown, and white CCS alongside numerous blades, utilized flakes, cores, and choppers; hammerstones were noted to be conspicuously absent and bifaces rare. Miscellaneous historical and modern debris was also found in association with prehistoric material, including hearths, possible tent pads, and artifacts presumed to be associated with railroad construction/maintenance and military training. Site recorders also noted modern flintknapping events, evidenced by non-local ore specimens, probably purchased at a rock shop, near a hearth. During that recording, three flakes, a core, four bifaces, and "Chinese pottery" found within one of the noted historical hearths was collected.

Subsequent updates in 1980, reflecting a combination of documented temporary sites (i.e., Pisgah 11, 12, and 13), noted a similar range of material alongside previously unrecorded mining claim cairns, but did not otherwise expound on historical site use other than to say the area was intersected by vehicle tracks and littered with trash reflecting continuous rockhounding activities since the 1930s. These updates did, however, mention prehistoric working of local basalt. The site was recommended eligible for listing, although the reasoning behind this was not elaborated in the site record.

In February 2018, Far Western revisited that portion of the site intersected by the APE of an access road associated with proposed hydrostatic testing of the L-300. A total of three SRLs were observed, including two containing 15 and 30 brown, gray, and CCS core reduction flakes and a core within areas of 1.6 and 4.7 square meters, and one containing 25 basalt flakes in a 7.1 square meter area. A separate 26-x-11.5-foot concentration was also noted, which encompassed numerous milk cans (ca. 1915–1925), single- and multi-serve sanitary cans, tobacco tins, pull-tab and "church-key"-opened beer cans, and glass bottles (most of which looked to be modern road toss), as well as sparse multi-hued CCS. Two features were also found, including a 13-x-8.5-foot oblong rock ring incorporating a small milk can (ca. 1915–1925) and various shades of bottle glass (i.e., amethyst, aqua, and brown) and a 4-x-4-meter concentration near a rock ring containing thousands of locally acquired red and yellow CCS flakes and imported obsidian, all of which appeared to reflect modern flintknapping activities.

That portion of the site area re-surveyed in 2018 by Far Western identified a similar range of archaeology and modern/historical disturbances as previously reported in 1977 and 1980, although indications of neither Chinese railroad workers camps nor military camps were observed. Based on observed constituents, previous recordation of other constituents, in light of experience with similar resources, and given that the site area encompasses an area with the lowest modeled potential for buried deposits, Far Western does not consider the prehistoric component to be a contributing factor to the site's eligibility for listing. Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value, particularly without associated temporal diagnostics. That the site area has been continuously visited by rockhounding enthusiasts also detracts from much of its potential to preserve intact prehistoric components (Criterion D). Furthermore, the prehistoric component is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

However, further research is required to elaborate upon the eligibility potential of the historic-era component, particularly considering recorded evidence of camping by Chinese railroad workers, past military exercises, and the site's relative proximity to the historical Lavic and/or Argos railroad sidings.

CA-SBR-2340H (P-36-002340)

This abandoned segment of the Tonopah & Tidewater Railroad grade (operation: ca. 1905–1920s; dismantling: 1940–1943) and associated structures and debris are located within the historic town of Ludlow (SBR-8920). The site was originally recorded in 1977, and updates were completed on numerous occasions between 1978 and 2015, documenting additional segments of the grade and noting associated debris, structures, and features. The most recent update in 2015 recorded multiple structure foundation pads and historic-era debris associated with the remnant grade that encircled Ludlow. That update, linked to the update of SBR-8920, noted that roughly 50% of the grade remained intact, and that the remainder had been destroyed by flooding or maintenance of the Atchison Topeka Santa Fe Railroad. That record also mentioned the presence of five train maintenance pits corresponding to the locations of the historical Engine House, Storage Track, and Paint and Carpenter Shop. An eligibility recommendation was not offered in that update, but a previous update of SBR-2340H recommended it be considered eligible under Criteria A, B, and D; the Ludlow loop would certainly contribute to that eligibility. An eligibility recommendation under Criterion C was not offered.

In February 2018, Far Western revisited segments of the line that intersected a proposed access road for planned hydrostatic testing of L-300. The northern portion of grade intersection is 28 feet wide and elevated approximately six feet from the proposed access road surface, while the southern grade intersection has been fully obliterated. No new features or cultural constituents were observed within the survey area. Based on available data, Far Western has no basis to refute the previous recommendation that SBR-2340H be considered eligible for listing under Criteria A, B, and D. The current inventory did not reveal evidence of distinctive characteristics or components, and Far Western does not recommend that the segments intersected by the current project be considered eligible under Criterion C, or otherwise be considered contributing portions under that criterion.

CA-SBR-2910H (P-36-002910)

This is the historic alignment of Route 66/National Trails Highway where it crosses through San Bernardino County. The segments revisited for the current project are located between Newberry Springs and Essex, most of them lying near or directly aligned with the modern route. The original road was constructed between 1911 and 1914; the portion through the eastern California desert was designated State Route 66 in 1926. Route 66 and several structures along the route have been determined eligible for listing on the National Register.

In 2018, Far Western revisited eight previously recorded segments of State Route 66 for the current project and documented six additional segments (#14–19). The newly recorded segments are paved, two-lane roads varying from 0.7 to 4.4 miles in length and 25 to 27 feet in width; no artifacts were noted in association with any of these. The only artifacts observed on any of the segments were a few sanitary cans, one "church-key" opened can, and a hub cap from a Nash Rambler (1950–1954) scattered along previously recorded Segment 10. Further research is necessary to assess the individual contributions of these segments to the eligibility of SBR-2910/H as a whole.

CA-SBR-3076 (P-36-003076)

This prehistoric campsite was originally recorded in 1985 as a scatter of 22 chalcedony flakes. Much of this material was collected within one of four, 4-x-4-meter controlled collection units. Four apparently negative shovel test pits of unreported dimension were also excavated to undocumented depths outside of these units. The site was updated in 2001 (Pigniolo et al. 2002), during which only two jasper flakes were noted. Pigniolo et al. (2002) recommended that the site be considered ineligible for listing and that no further work be conducted.

The site was updated and expanded in 2008 to include roughly 30 jasper and chalcedony secondary and tertiary flakes, a CCS biface, and a CCS edge-modified flake within a 194-x-104-meter area. That record noted the site was in poor condition due to pipeline construction but does not offer an alteration of the previous eligibility recommendation. Far Western revisited the site in 2013, and found the site as recorded in 2008 (Higgins et al. 2013). In February 2018, Far Western again revisited site and found 30 additional flakes extending southwest of the extant site boundary, necessitating a boundary expansion. A previously undocumented leaf-shaped 5-x-3.5-x-0.6-centimeter rough pressure biface was also observed. The previously recorded biface was re-located; but Far Western failed to re-locate the flake tool. No additional site impacts were observed.

Despite the expansion of the site area incorporating new material, Far Western does not dispute Pigniolo et al.'s (2002) assessment and recommendation of ineligible for listing. The site lacks temporally diagnostic artifacts, possesses a low diversity assemblage, and encompasses an area modeled to have low sensitivity for buried archaeological deposits, and therefore cannot significantly contribute to regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

CA-SBR-3276H (P-36-003276)

This is the historic Chambless townsite, situated along National Trails Highway/Historic Route 66. The site was minimally documented in 1978 to include a general store/gas station, a then abandoned motel consisting of four concrete-block structures and an associated motor court, a few abandoned and one occupied residence, a restroom facility, a post office, and a functioning well. That record noted that the town was established in 1933. An eligibility recommendation was not offered.

Far Western surveyed most of Canfield Road, east of the once-standing post office in 2018, which was incorporated as a proposed access road for the hydrostatic testing of L-300. The post office appears to have been razed since the 1978 recording, and its location is now within a fenced property that looks to be a junkyard. Otherwise, nothing new was observed within the Project APE. A monument erected just opposite the aforementioned general store notes that Chambless was one of many roadside stops along Route 66 that had been bypassed by the construction of I-40 in 1973. Far Western digitized a boundary for SBR-3276H based on the 1978 record and current aerial photography, but this area was not surveyed outside of the current Project APE. Further research and investigation of the site area is necessary to assess the significance and potential eligibility of the Chambless townsite. At present, however, it does not appear that the current project APE intersects any significant site elements.

CA-SBR-3277H (P-36-003277)

This historic-era resource consists of the remnants of Cadiz Summit, a Route 66 roadside stop between Chambless and Essex established between the 1930s and 1940s. The area was abandoned during the early 1970s following a fire, vandalism, and the construction of Highway 40. The site was originally recorded in 1978 and updated by Far Western in 2013 (Higgins et al. 2013). The 1978 record notes several features north of Route 66, including the burned remains of a stucco grocery store/gift shop, an associated concrete wall, a rock wall composed of white rocks, restroom facilities, and gas pump stand, a garage, a cesspool pit, the remains of two probable gasoline storage tanks, and an unknown hillside excavation, hypothesized to have been a food storage area.

Far Western's 2013 record update re-located and re-described these features along with at least three additional concrete pads south of the road, one of which incorporates a modern survey marker, the remains of an airway beacon constructed in 1956, and a footpath. Higgins et al. (2013) also documented two extensive dump areas north and south of documented features, within which two 5-x-5-foot surface sample units were placed. The artifacts within these sample units mostly included domestic debris (e.g., bottles, cans, and tableware) dating between 1930s and 1970s. A formal eligibility recommendation was not offered, except to say that the site appeared eligible as it was likely a contributing element to the larger Route 66 Linear Cultural Landscape, as cited by Bischoff (2005).

Far Western re-surveyed the route of an unmaintained dirt road that runs north of most site features and south of the northern dump area, extending from the modern course of National Trails Highway to the 1956 Danby airway beacon, which is a proposed access road for the current project. Intersected site elements (i.e., the road and the footpath) were found to be as previously recorded and no new features, cultural constituents or site impacts were noted. Further research and investigation of the site area and its link to SBR-2910H is necessary to assess the significance and potential eligibility of the Cadiz Summit roadside stop, and the Danby air-mail beacon it incorporates.

CA-SBR-3278H (P-36-003278)

This is the historic mining and railroad town of Danby, California, built ca. 1917 along the AT&SF railway line. It is in the central Fenner Valley, approximately 1.75 miles south of old Route 66 and 6.5 miles due north of the Skeleton Mountains. It was first recorded by S. Crowley and F. Norris in 1978 as eight structures and scattered refuse, including two abandoned wood-frames residences dating to 1915–1920 and a water tank/tungsten mill which appeared to have been abandoned since WWI. Also observed was a relatively new mill dating to the 1960s. Large quantities of trash including glass, cans and metal were observed on the ground. At that time, the site was in fair condition.

In February 2018, Far Western revisited the site and associated access roads and documented seven historic-era features and two areas of concentrated historic-era debris. The features include a processing plant with associated structures, two collapsed buildings, a house with corral, a concrete pad, a hearth, and a burn pile. Two areas of concentrated historic-era debris were recorded in the northern portion of the site and include scattered cans, glass bottle bases, ceramics, and milled lumber. Two features were also found within one of the concentrations. Four features (Features 1-4) are outside of the L-300 right-of-way, while both concentrations (Concentrations 1 and 2) are located within the right-of-way and adjacent to access roads, along with Feature 5. The site boundary was adjusted to include all newly observed features and historic-era debris.

This relatively large, complex site requires additional research to fully access its significance in the history of the region and evaluate its eligibility for listing. It is recommended that the boundaries of Concentrations 1 and 2 and Feature 5 that border proposed access roads be fenced-off, temporarily, to mitigate potential project effects to these site areas.

CA-SBR-3284H (P-36-003284)

This is the historic town of Amboy, located approximately 28 miles southeast of Ludlow, California on the National Old Trails Highway. It was originally documented in 1985 as a trash scatter with historic-era and modern materials including ceramics, metal, glass, wood, plastic, and rubber. The site was revisited numerous times, including in 1998, when most of the town's buildings were documented. The most recent update in 2001 noted that the site still contained a significant amount of refuse (cans, glass, ceramics, etc.), but was in poor condition (Pigniolo et al. 2002).

The town of Amboy first appears on maps around 1883, although the oldest buildings noted in 1998 date to about 1900. There are several buildings within site boundary, most of which date to the 1970s, including Roy's Café and Motel. Other buildings dating to late 1940s-early 1950s are also present and suggest that the town has been occupied (at least sporadically) for well over a century.

In 2018, Far Western revisited that portion of the northern site area intersected by a proposed access road and found nothing new excepting that only modern refuse was in the APE for the current project, no historic-era remains. That portion of the townsite intersected by the All American Pipeline, the APE for which incorporated copious disturbed refuse, was previously recommended ineligible (Pigniolo et al. 2002). The townsite as a whole remains unevaluated, and further research is necessary to evaluate its listing potential. The current project APE follows the course of an in-use historical road that has no associated materials or features that would significantly enhance the eligibility potential of the Amboy townsite in terms of regional research themes (Criterion D), nor is said road deemed to have been a major historical thoroughfare. This road segment is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

CA-SBR-4165H (P-36-004165; with Mary Maniery)

This historic-era site is what remains of the historic Argos Siding, recorded by BLM in 1980. There are four artifact concentrations and 12 features: a collapsed structure with refuse, a concrete foundation with refuse, several rock piles incorporating refuse or markers, an excavated pit and associated refuse, and a bladed road segment. Associated refuse includes milk, tobacco, and food cans, along with glass fragments dating between 1915 and 1948. Among the rock piles is one that has a badly weathered wooden cross and appears to be a grave, and another that includes a removed and repositioned granite US benchmark and witness post. The 1955 United States Geological Survey (USGS) Lavic Lake 15-minute quadrangle shows a cemetery on the site, and there are almost certainly additional graves present. There is evidence of disturbance to the site from use and maintenance of the bladed road that transects the site, as well as possible looting.

In the 1980 site record, Norwood cites from a 1940 "History of the Santa Fe Coast Lines" on file at the Kansas State Historical Society (no author given):

> "This is a section headquarters and a passing siding. At one time, a post office was located here in anticipation that it was the logical point for a community to rise following the discovery of gold, silver, and other metals on this section of the Mojave. When the Tonopah & Tidewater Railroad was built from Ludlow, however, the post office was moved there."

There were mining districts in the area around Argos in the late 1800s to 1920s, but never an actual town or settlement at Argos. Sidings and stations in this area were creatively named by railroad personnel using names from ancient Greece, including Troy, Homer, and Hector (Belden 1935:26). The area around Argos is located near the Lava Bed Mountains, which includes Argos Mountain located to the southeast. This area appears on the 1892 official San Bernardino County map as primarily a copper and silver site, with a few gold mining claims (Gudde 1975:192).

Argos Station, as it was known, was utilized by local mining concerns. A large deposit of celestite (strontium sulfate) is present two miles north of the station, and small-scale mining occurred in the region in the 1920s. Strontium sulfate is used primarily in the manufacturing of ceramics and fireworks (California State Mining Bureau 1921:366-367). The siding was present by 1914, when the *San Bernardino Sun* reported that a heavy cloudburst in July had damaged the tracks at Argos, necessitating the use of a large force of laborers to repair them (*San Bernardino Sun*, 17 July 1914). Argos included a section headquarters, a post office, and a passing siding (Anonymous 1940:107). By 1935, Argos was nothing more than a Santa Fe Railroad signpost east of Newberry. By that time, whatever activity had been active in the area had ceased (Belden 1935:26).

A small cemetery containing at least two burials is located at Argos south of the railroad tracks. While one grave is unmarked, the other is the final resting place of Maggie May (nee Morrison) Gane, born 1872 and died 1961. At the time of her death, nothing remained of the Argos siding and it is possible she may have been buried next to the grave of a long-deceased husband or family member (Johnson 2001). In 1978, mining work on the old Argos strontium deposits continued when a group of miners filed mineral patents to the Strontia and Strontia No. 2 lode mining claims in Sections 29 and 30, T8N, R7E. These men relied on the use of private vehicles, rather than the railroad station at Argos that serviced the miners half a century before. Today nothing remains at the Argos site other than some concrete foundations, trash deposits and the graves located south of the railroad, as detailed above, much of which has at some point been disturbed by bulldozers and looters.

The significance of historical cemeteries derives from association of persons of transcendent importance, age, distinctive design features, or association with historical events. Presently, insufficient historical information is available to evaluate the association of significant persons or events with either the cemetery or the operation of the Argos Siding, in general (Criteria A and B), and the grave feature(s) do not exhibit significantly distinctive design elements (Criterion C). This cemetery may preserve potentially significant information about the demographics of late nineteenth/early twentieth-century Mojave Desert settlers and/or railroad workers, and be eligible under Criterion D, but would not be eligible for nomination without concurrently satisfying Criteria A, B, and/or C. That said, the Argos Siding was associated with the early operation of the historic AT&SF railway, and itself would be eligible for listing under Criterion D. Far Western thus recommends that the site be considered eligible for listing but maintains that further research is necessary to ascertain whether the remains of the cemetery represent a significantly contributing element. Nonetheless, regardless of its contribution to eligibility, it is also important to consider humanistic values associated with descendent communities, and project effects to this site should be avoided.

CA-SBR-4681 (P-36-004681)

This prehistoric pavement quarry is adjacent to L-300, southwest of the Cady Mountains. It was originally recorded in 1980 as a grouping of jasper and basalt flakes thought to represent two prehistoric components – an older component (perhaps Malpais Complex, i.e., Lake Mojave) composed of the more weathered basalt flakes and a later component incorporating the fresher jasper flakes. The site was recommended eligible for listing, although the reasoning behind this recommendation was not elaborated in the site record. The site record was updated in 2008 to incorporate 14 variably-sized concentrations of CCS flakes, cores, and flaked stone tools (some of which are probable SRLs) alongside 16 individually-mapped artifacts, together totaling 350 prehistoric items; neither basalt nor other FGV artifacts were noted. A possible hearth and a probable mining claim cairn were also documented. An eligibility recommendation was not offered for this updated sited, described as an ephemeral stone acquisition and use area or surface quarry. Far Western revisited that portion of the site boundary intersected by the L-300 pipeline corridor in 2013, updated datum UTMs, and confirmed the previous site description and boundary extent were unchanged.

Far Western revisited the site in February 2018, re-located the datum, and again verified the site boundary was accurate. The previously recorded hearth feature could not be re-located anywhere in the extant site boundary, and the only artifacts observed within the APE of the current project were three CCS flakes and two pieces of shatter.

Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value in the absence of associated temporal diagnostics. The previously recorded feature may have added to the site's significance, but Far Western's inability to re-locate it suggests this recordation may have been in error. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

CA-SBR-5794/13126/H (P-36-005794)

This massive multi-component site incorporates an extensive prehistoric limited occupation associated with rock features alongside historic-era refuse. The site was originally documented in 1979 and subsequently updated and expanded on various occasions between 1982 and 2013 (Higgins et al. 2013; McGuire 1990; Nixon et al. 2010; Pigniolo et al. 2002). These expansions included merging SBR-5794 with two other sites, SBR-3693 and SBR-13126/H, as well as a few rounds of surface collection and test excavation to depths of 10–70 centimeters below surface (cmbs) that consistently revealed no buried material or nominal debitage presence in near-surface deposits (ca. 0–20 cmbs).

The prehistoric component incorporates more than 4,500 artifacts, mostly distributed among more than 50 loci, including projectile points (Pinto and Elko forms, minimally), bifaces, formed and simple flake tools, cores, core tools, hammerstones, sparse ground stone, ceramics, and abundant debitage reflecting various stages of reduction of locally acquired and imported toolstones, including CCS, FGV, obsidian, felsite, quartz, quartzite, and siltstone. More than 40 rock clusters and at least one rock ring of unclear vintage have also been noted in record iterations, described as evocative of historical constructions (e.g., survey markers, claim cairns, land boundary markers, etc.) but not conclusively identified as such. Noted historical items, variably amalgamated in a few loci, include sanitary cans and bottle glass in the thousands, domestic ceramic wares (e.g., Fiesta Ware), and miscellaneous metal hardware collectively estimated to date between 1889 and 1964.

Prior to its merging with SBR-13126/H, McGuire (1990) recommended that SBR-5794 be considered ineligible for listing due to the surficial nature of the deposit and lack of temporally diagnostic material; the site was subsequently determined ineligible for listing by the California OHP in September 1990. Pigniolo et al. (2002) further recommended that that portion of the site intersected by the pipeline also be considered ineligible for listing. Nixon et al. (2010) further recommended that that portion of the combined SBR-5794/13126/H site area intersected by the then proposed Calico Solar Project be considered ineligible for listing under all criteria. Contrary to this recommendation, BLM determined, and SHPO concurred, that SBR-13126 [sic; presumably SHPO meant SBR-5794/13126/H as a whole] eligible for listing under Criterion D (Donaldson 2010).

Far Western re-surveyed segments of the L-300 A/B pipelines that intersected the site area in 2013 and found cause to further expand the site boundary to the south to incorporate more than 1,000 CCS flakes and a single biface (Higgins et al. 2013). In 2018, Far Western again revisited those portions of the L-300 A/B pipelines that intersected the site area and found no new artifacts.

As it stands, the SBR-5794/13126/H site area encompasses a diverse and complex record. Although previous evaluations have established the lack of a substantial subsurface deposit, the nature and age of associated rock features remains unclear, and is presumably the reason BLM and SHPO determined the site eligible under Criterion D. It was the contention of Nixon et al. (2010) that these were historical mining claim cairns or modern OHV navigation markers. Similar features and other were not found in the area expanded by Higgins et al. (2013), and do not occur within the current project APE.

The site area expanded by Higgins et al. (2013) was not previously evaluated but does incorporate significant site elements. This extended prehistoric component is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). The site area also encompasses an area modeled to have low modeled sensitivity for buried prehistoric archaeology, as demonstrated by a previous evaluation of SBR-5794, and incorporated materials do not have the potential to yield significant information regarding regional research themes (Criterion D). It is therefore recommended that this expanded site area be considered a non-contributing element to the site's previously determined eligibility.

CA-SBR-5797 (P-36-005797)

The prehistoric probable SRL was originally recorded in 1985 and was noted to consist of a discrete low-density scatter of jasper debitage. A single sterile shovel test was excavated to an unreported depth and surface artifacts were completely collected. The site was revisited in 2001 and found to contain four jasper and chalcedony flakes (Pigniolo et al. 2002); it was recommended ineligible for listing.

A re-visit by Far Western in 2013 noted nothing different in character or extent from that documented in 2001 (Higgins et al. 2013). In February 2018, Far Western again revisited the site and found the site heavily impacted by previous construction activities and collections, as observed by Pigniolo et al. (2002). Only two brown and red CCS core reduction flakes were found during the current site visit.

Given the previous collection of nearly all site materials, due to the lack of temporally diagnostic artifacts in the current and collected assemblage, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, thus diminishing the site's potential contribution to regional research themes (Criterion D), Far Western concurs with previous assessments and recommends that the site be considered ineligible for listing. Moreover, the site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

CA-SBR-5798 (P-36-005798; Destroyed/Not Re-located)

This prehistoric probable pavement quarry was originally recorded in 1985 and was noted to consist of 131 CCS artifacts distributed among patches of desert pavement, including at least one "knapping station" (i.e., SRL). Five shovel test units were excavated to unreported depths across the site area and found to be sterile. All surface artifacts within the original project APE were also collected within 46, 4-x-4-meter controlled collection units. Despite this level of collection, an unspecified number of flakes, a biface, and a core were found during a 2001 site re-visit (Pigniolo et al. 2002). The site was deemed to retain poor integrity due to pipeline construction and was recommended ineligible for listing. Far Western revisited the site area in 2013 and noted no change to the condition and constituents of the site (Higgins et al. 2013). However, a subsequent re-visit by Far Western in February 2018 failed to re-locate any artifacts. It seems that the site has been destroyed.

CA-SBR-5799 (P-36-005799; Destroyed/Not Re-located)

This prehistoric pavement quarry was originally recorded in 1985. Cultural constituents were noted to include hundreds of jasper and chalcedony flakes, of which some were distributed among at least six "clusters," here interpreted to represent SRLs. Six shovel tests were excavated during that recording, of which one yielded a single flake at 11 cmbs; surface material was also extensively collected.

The site record was updated in 2001, during which time a light scatter (number unspecified) of red and white CCS flakes and a tested core were documented (Pigniolo et al. 2002). The site was deemed to be in poor condition due to the previous collections and grading of the pipeline access road transecting the site and was recommended ineligible for listing. Far Western attempted to re-locate the site in 2013, but nothing was found (Higgins et al. 2013). Far Western again revisited the site area in 2018, but again could not re-locate cultural material. It seems that the site has been destroyed.

CA-SBR-5800 (P-36-005800; Destroyed/Not Re-located)

This prehistoric probable SRL was originally recorded in 1985. Cultural constituents were noted to include an unspecified number of CCS artifacts within a 4-x-3-meter area. All surface material was captured within two 4-x-4-meter collection units, and one negative shovel test pit was excavated to an unreported depth. Far Western attempted to re-locate the site in 2013, but nothing was found (Higgins et al. 2013). Far Western again revisited the site area in 2018, but only managed to find a single CCS core reduction flake.

CA-SBR-5801 (P-36-005801; Destroyed/Not Re-located)

This prehistoric pavement quarry was originally recorded in 1985. Cultural constituents were noted to include two loci (here interpreted as SRLs) containing an unspecified number of CCS flakes, likely in the dozens, as well as core. All this material was collected in four, 4-x-4-meter controlled collection units during the initial recording, within which four negative shovel test pits were also excavated to unreported depths; all units were found to be void of buried cultural material.

The site was revisited in 2001 (Pigniolo et al. 2002) but could not be re-located due to complete collection of artifacts during the original recording; the same applied for a subsequent re-visit by Far Western in 2013 (Higgins et al. 2013). Far Western again revisited the site area in February 2018, but also failed to re-locate cultural material.

CA-SBR-5807 (P-36-005807; Destroyed/Not Re-located)

This small lithic scatter was recorded by S. Reyna in 1985. The site record describes 41 pieces of grey CCS, all of which were systematically collected. Two shovel test pits were excavated at that time, both sterile. Further attempts were made to re-locate the site in 2001 (Pigniolo et al. 2002), 2013 (Higgins et al. 2013), and 2018 (current project). None of these visits identified any cultural remains. It appears that the 1985 surface collection has obliterated this site.

CA-SBR-5808 (P-36-005808; Destroyed/Not Re-located)

A scatter of 35 basalt lithics were recorded in 1985 by E. Peterson, who carried out a systematic collection and excavated a single shovel test pit (sterile). The site was not re-located during a field visit in 2001, nor was it found by Far Western in 2013 (Higgins et al. 2013). Far Western returned to the recorded location in 2018, but again found no cultural remains. This small surface site, consisting of 35 basalt flakes, appears to have been entirely collected and no longer exists.

CA-SBR-6404H (P-36-006404)

This historic-era dirt road (Crucero Road), which connects the towns of Ludlow and Crucero, was originally recorded as an isolated resource in 1989. That record noted that the road was heavily utilized during the occupation of a military camp at Ludlow (perhaps Operation Desert Strike, 1964). That record also noted associated modern and historical road-tossed cans, as well as nearby telegraph poles.

The road was revisited by Far Western, and its record updated in 1990. That update identified the road as a site, that it remained in use, and mentioned profuse associated modern trash. A segment of the Bagdad Chase Road, which extends from Main Street in Ludlow through Ragtown and Stedman to the historical Bagdad Chase Mine, was visited in 2001 (Pigniolo et al. 2002) and was apparently considered to be an extension of SBR-6404H. Pigniolo et al. (2002) left the site unevaluated and recommended that the site be avoided or tested.

This southern extent of the Crucero/Bagdad Chase Roads was again revisited by Far Western in 2013 (Higgins et al. 2013), during which alterations to road character as documented in 2001 were not observed. Far Western also revisited and surveyed the 16-foot-wide southern extent of the road in 2018, and again observed no appreciable difference in the character of the road or its associated trash, except to say that it appeared bladed, and that some segments were washed out. An additional 3.4 miles of road segment were added to the record during the current project, along which numerous isolates and sites were identified.

Minor transportation corridors in the Mojave Desert, most of which remain in use and maintained, are rarely considered to have significant data potential or to retain integrity (e.g., Fryman 2012). This road leads to the mining town of Steadman and the associated Bagdad-Chase Mines (Schaefer and Duffield-Stoll 1996) Regional mines are typically considered significant under Criterion D, particularly as they speak to themes of mining history, the evolution of mining landscapes, and the historical ethnology of mining communities (Schaefer and Duffield-Stoll 1996:179). As an in -use and maintained road, this new segment retains some integrity of location and setting, but original or unique elements are not associated with the segment that intersects the project APE (Criterion C), this segment is not associated with a significant event or individual (Criteria A and B), and it does not significantly contribute to aspects of mine (Criterion D). Although the eligibility of the entire course of SBR-6404H was not evaluated for the current project, the newly documented segment is considered to be ineligible under all criteria. Further research is required to assess the eligibility of the route, as a whole.

CA-SBR-6515 (P-36-006515)

This prehistoric pavement quarry was originally recorded by Far Western in 1989. That record noted four SRLs composed of between 13 and 32 variously-hued CCS cortical and interior flakes in areas ranging between 0.1 and 0.4 square meters. The site was recommended ineligible for listing due to a lack of temporally diagnostic artifacts, the common regional occurrence of SRLs, and their diminished potential to preserve buried deposits (McGuire 1990). The site was subsequently determined ineligible for listing by the California OHP in September 1990.

Far Western revisited the site area in 2013 and identified additional SRLs and artifacts extending south of the previously recorded boundary (Higgins et al. 2013). As such, the site area was extended and all site constituents were re-recorded. In all, a total of 16 SRLs were observed during that recording, including three of those originally documented, alongside three simple flake tools, a formed flake tool, seven cores, and 69 CCS core reduction flakes outside of these SRLs. Observed SRLs contained between 6 and 48 CCS core reduction flakes apiece in areas ranging between 0.2 and 33 square meters; two SRLs also contain tools.

Far Western again revisited the site area in March 2018 and did not note any difference in character or condition from the previous site update. As assessed by McGuire (1990), pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. Likewise, given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, Far Western upholds the previous recommendation and determination that the site be considered ineligible for listing under all criteria. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-6530H (P-36-006530)

This historical railroad worker's camp is intersected by Crucero/Bagdad-Chase Road (SBR-6404H), which variously overlaps or parallels an abandoned railroad grade (P1532-1, the Ludlow-Southern Railroad), northwest of Ragtown. It was originally recorded by Far Western in 1989 and noted to include two rock features (a rock ring and probable historic-era hearth) next to the abandoned railroad grade and an assortment of historical refuse, consisting of a tobacco tin, a kerosene wick holder, a barrel hoop, a metal washtub, miscellaneous cans, broken glass (including amethyst, brown, and clear varieties), railroad spikes, cement blocks, and pieces of whiteware. McGuire (1990) recommended the site ineligible for listing considering that the remnant railroad grade was disturbed; the associated debris scatter was ephemeral and limited to activities related railroad construction, maintenance, and operation; and that the incorporated railroad segment was only a spur to a larger line that lacked all but local significance. The site was subsequently determined ineligible for listing by the California OHP in September 1990.

The site was revisited in 2001, and only miscellaneous debris was noted, including a few sanitary cans, wood fragments, glass, and both glass and ceramic insulators (Pigniolo et al. 2002). Neither the grade nor associated features were noted during this update, and the recommendation and determination of ineligible for listing was upheld. Far Western revisited the site in 2013 and noted no deviation in character or constituents from the Pigniolo et al. (2002) record update.

Far Western again revisited the site in February 2018 and expanded the previously recorded boundary to incorporate more than 250 clear, brown, and green glass bottle fragments; approximately 45 milk, beverage and sanitary cans; more than 15 hot rubber patching tins; and miscellaneous brown stoneware and porcelain china fragments. The possible rock hearth was re-located, but not the rock ring. It appears that ground surface reclamation associated with pipeline construction has destroyed and distributed much of the historical deposit that once existed. Given this, and considering previous recommendations and determinations, Far Western supports an assessment of ineligible for listing under all criteria. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-6693H (P-36-006693)

This historic-era railroad alignment was originally built for the Atlantic and Pacific Railroad Company by Southern Pacific in the 1880s and was purchased by AT&SF Railway in 1890. The active line runs from Mojave, California, to Topock, Arizona, and has been maintained and improved over the decades. Archaeologically, the site was originally documented in 1990 by Michael Lerch & Associates, who recorded approximately 240 miles of railroad dating to 1883. Since then, multiple projects have resulted in the documentation of additional railroad segments, including those that remain in use, and adjacent older railroad grades. Many of the segments include railroad-associated artifacts. The most recent site update by ICF, Inc., documented a pump feature with associated historic-era debris, located adjacent to the BNSF railroad in Barstow. The site was determined eligible for the National Register in 1994.

In 2018, Far Western re-visited multiple segments of this historic railroad that intersected the APE of the current project. A total of five previously recorded segments were re-visited, resulting in updates to two segments. One new segment of active railway (Segment 17), was located and documented in Essex, California. Three inactive, abandoned railroad grades were also located south of Segment 13 (Segments D–F). A total of 16 bridge/culvert features were documented along Segment 13 (Features 14–29), just east of the 13 previously recorded bridges associated with Segment 12. Additional features and artifacts were also located along previously undocumented railroad grades (Segments D and E). These segments, all located south of Ludlow, California, include associated artifacts (cans, bottle fragments, insulator fragments) of late nineteenth-century age or later. Further research is necessary to assess the contributions of newly recorded segments to this determined eligible site.

CA-SBR-8920H (P-36-008920)

This site is the historic town of Ludlow, founded in 1882 as railroad station. It lies just north of I-40 about 50 miles east of Barstow, California. Regional mining led to further development of the town in the 1890s when it became a major supply station and transport center. The site was first recorded (on a DPR form) by McKenna in 1989 and rerecorded in 2015 by Bonner et al., who describe it as a key location in the development of the Mojave Desert that served not only as a major supply stop but as a resting place for those traveling along Route 66. According to McKenna (1989), the town was occupied mostly through about 1940, though there are still standing and occupied structures there today, including the Ludlow Café. The 2015 site record by Bonner, Bonner, and Williams is complete and informative and includes information on the history of the town as well as a map of the buildings and the local cemetery.

In February 2018, Far Western revisited the site and re-located the features within the project area. These included features in Loci 1 and 2. The revisited resources were generally as previously described (see feature descriptions for details). Several new artifact concentrations and features were identified south of the railroad. Far Western expanded the site boundary to the south to incorporate these features and included them as Locus 2. All told, the site contains eight structures, two foundations, a claim marker, and 10 artifact concentrations. More research is needed to fully evaluate the eligibility of this site for listing, overall, but the project design only proposes the utilization of bladed and maintained roads through the townsite, and it is not anticipated that other elements will be affected by current project design.

CA-SBR-10637 (P-36-010637)

This prehistoric campsite was originally recorded in 2001 and noted to include at least nine multi-hued CCS flakes and a brown bifacially retouched flake, all within a 90-x-45-meter area. It was recommended ineligible for listing.

Far Western revisited the site location in 2013 and noted no deviation in character or constituents from the original record. Far Western again revisited the site in 2018 and again noted no deviation in character or extent from the original record, although the previously documented flake tool could not be re-located. Abundant natural CCS pebbles were also noted, suggesting that observed flakes could be related to local toolstone testing.

Given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage (it does not possess site-level density by project standards), and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, all of which diminish it’s potential to speak to regional research themes (Criterion D), Far Western upholds the previous recommendation that the site be considered ineligible for listing under all criteria. The site is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant figure (Criterion B), and does not embody distinctive characteristics or components (Criterion C).

CA-SBR-10649 (P-36-010649; Destroyed/Not Re-located)

This very small lithic quarry/testing area (presumably an SRL) was originally recorded in 2001 (Pigniolo et al. 2002) and was noted to consist of four CCS flakes and two cores. Pigniolo et al. (2002) recommended that the site be considered ineligible for listing. The site location was revisited in 2008, but artifacts were not found.

Far Western also revisited the site in 2013 (Higgins et al. 2013) but could likewise not find cultural resources at the documented site location. In February 2018, Far Western again revisited the site location, but again failed to find the originally recorded resource. The site is assumed destroyed and is considered ineligible for listing, as originally recommended. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-10650H (P-36-010650)

This historical refuse deposit was originally recorded in 2001 (Pigniolo et al. 2002). That record noted three barrel-hoops, miscellaneous metal wire fragments, five steel cans, and a glass bottle within a 10-x-7-meter area. Pigniolo et al. (2002) recommended that the site be considered ineligible for listing

Far Western revisited the site area in March 2018, and found the site as originally recorded. The previously recorded bottle was found to be a Clicquot soda bottle (ca. 1930s–1960s). Far Western concurs with the original recommendation of ineligible for listing. The site is a common roadside refuse deposit and does not add significant information to regional historical research themes (Criterion D). Moreover, the site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

CA-SBR-11583H (P-36-011583)

This historic-period dirt road (Old Cadiz-Parker Road, post-1896) connects the railroad villages of Cadiz and Rice. The road was originally recorded by in 2004 (Underwood 2004) and revisited in 2010 and 2011 (Higgins et al. 2013). During the 2011 update, Far Western documented a then previously unrecorded 0.25-mile segment extending north of the L-300 line and noted a couple of associated sanitary cans. The original recordation noted evidence of modern modification and an overall lack of historical integrity.

Far Western revisited a small segment of that documented by Higgins et al. (2013) in March 2018, which intersected a proposed access road extending north of Historic Route 66, south of L-300. No significant deviation from the character of the road segment documented by Higgins et al. (2013) was noted during the current update. The intersected segment (ca. 100 feet) was noted to be 15.5-feet wide and to be utilized and maintained.

Minor transportation corridors in the Mojave Desert, most of which remain in use and maintained, are rarely considered to have significant data potential or to retain integrity (e.g., Fryman 2012). The original recordation noted evidence of modern modification and an overall lack of historical integrity. Neither subsequent updates nor that completed for the current project found cause to amend this assessment. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D). The road segment is recommended ineligible for listing under all criteria, accordingly.

CA-SBR-11586H (P-36-011586)

This unnamed historic-period dirt road was originally recorded in 2004 (Underwood 2004) and noted to be 10-feet wide and been previously bladed and maintained. Far Western revisited the site in 2011 and updated the record to include a 0.5-mile segment of road that intersected the rights-of-way for L-300 A/B (Higgins et al. 2013). That update noted two beverage cans (ca. 1935–1960) and an insulator in proximity and found the width of the intersecting segment to be 12–14 feet.

Far Western revisited the previously updated road segment in March 2018 and noted no appreciable difference in character from said update, although an additional Pyrex insulator was noted. Minor transportation corridors in the Mojave Desert, most of which remain in use and maintained, are rarely considered to have significant data potential or to retain integrity (e.g., Fryman 2012). The original recordation noted evidence of modern modification and an overall lack of historical integrity. Neither subsequent updates nor that completed for the current project found cause to amend this assessment. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D). The road segment is recommended ineligible for listing under all criteria, accordingly.

CA-SBR-12918H (P-36-014405)

This is a large historic-period refuse deposit including domestic (cans, glass, and ceramic fragments) and industrial (steel straps, barrel hoops, and automobile parts) debris originally recorded in 2008. Most of the material is confined within two concentrations (Scatter 1 and Scatter 2) within a split-level railroad burrow pit on the south side of BNSF railroad tracks. The artifacts date between 1950 and 1960 based on diagnostic can and bottle glass fragments. An eligibility assessment was not offered during that recording.

Far Western revisited the site location in February 2018 and observed no appreciable deviation in site character or content from that originally recorded. Mid-century roadside refuse deposits of this kind are common and of little to no informative value regarding regional historical research themes (Criterion D). The site is, moreover, not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). This site is recommended ineligible for listing under all criteria, accordingly.

CA-SBR-12999H (P-36-014522)

This historical refuse deposit was originally recorded in 2008 as a 19-x-9-meter aggregation of 29 cans, a metal hook, four metal mounting plates, a wheel rim, and a vehicle axle probably deposited between the early twentieth century until sometime after 1945 (Nixon 2008). The site was updated and expanded in 2017 to a roughly 400-x-100-meter deposit incorporating a 12.8-x-9.5-meter concentration of 18 cans dating between 1915 and 1930 and a 1.3-x-0.9-meter rock cluster (Concentration 1). Various other artifacts were documented throughout the site area, including 46 other cans manufactured between 1897 and 1988; three crushed metal pails; seven glass bottles dating between 1870 and 1968; miscellaneous machine parts; an enamelware wash basin; and two glass transmission/telegraph insulators. The site was recommended ineligible for listing under all four criteria based on a survey-level evaluation of the updated and expanded site area.

Far Western re-surveyed the site area in February 2018, unaware that the SBR-12999H record had been expanded in August 2017. Initially three new historical refuse deposits were recorded within the updated SBR-12999H area, EM-X13, -X14, and -X15, whereby EM-X14 encompassed Concentration 1, as well as two isolates, EM-R9 (three cans and two insulators) and EM-R10 (two glass insulators). Here, we've further expanded the SBR-12999H site area to encompass the newly recorded site areas, such that EM-X13 is now Concentration 2, and EM-X15 is Concentration 3. As recently updated, Concentration 1 (47 x 26 meters) incorporates a green glass bottle base, seven tobacco tins, and miscellaneous railroad hardware, including railroad spikes and a crane hook; the previously recorded rock cairn was not observed. Concentration 2 (68 x 15 meters) was found to have two amethyst bottle glass fragments (ca. 1890s–1920), two double petticoat aqua glass insulator fragments, and three external friction cans and lids (baking powder, lard, and sanitary) estimated to date between 1900 and 1934. Concentration 3 (33 x 17 meters) encompasses eight double petticoat aqua glass insulator fragments, four Type 8 milk cans (ca. 1915–1925), two Owens-Illinois bottle bases indicating manufacture in 1947, an amethyst bottle fragment, and an oyster shell.

Based on current findings, Far Western has no basis to disagree with the previous recommendation that SBR-12999H be considered ineligible for listing under all criteria. Available data suggest this site represents a multi-episode roadside trash drop dating to the early through middle twentieth century, and/or lunch spots associated with railroad maintenance. Refuse deposits of this nature are regionally prolific and retain little significant information pertaining to regional research themes beyond chronology and do not embody distinctive characteristics or components (Criteria C and D). There is also no indication of a significant association with significant persons or events (Criteria A and B).

CA-SBR-13038/13040/H (P-36-014561)

This large multi-component site was originally recorded in 2008. The prehistoric component was noted to include CCS and FGV debitage (>600), bifaces (n=7), and cores (n=5) mostly distributed among 28 loci (probable SRLs) alongside a historic-period rock mining claim cairn.

The site was revisited and updated in 2010 to include a boundary expansion encompassing an adjacent previously recorded site (SBR-13038), which together were found to incorporate a total of 59 SRLs, seven historical mining features (a borrow pit, a prospect pit, two claim cairns, and three other cairns); five other rock clusters of unknown vintage were also observed. A possible foot trail segment was also noted but was subsequently reasoned to be a probable off-highway vehicle (OHV) route, perhaps linked to a single use-event. The site was recommended ineligible for listing at the time of this update.

In 2013, Far Western revisited a portion of the site that intersected the L-300 line and found intersecting site components to be as recorded in 2010. Far Western revisited the site again in February 2018 and re-surveyed a larger portion overlapped by a proposed hydrotest staging/laydown area. Nothing new was found. The previously identified trail was re-located and found to be a pavement surface compression alignment lacking associated rock features. Similar paths were observed in proximity that were clearly created by OHV traffic, supporting the original contention that the observed trail is likely associated with modern recreation.

Neither the prehistoric or historical components are clearly associated with a significant event or person (Criteria A and B), nor do they embody distinctive characteristics or components (Criterion C). Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value, and do not contribute significant information to regional research themes in the absence of temporal diagnostics (Criterion D). Far Western therefore finds no reason to alter the previous recommendation of ineligible for listing under all criteria regarding the prehistoric component.

Documented mining features are also regionally common and do not alone or in combination significantly enhance regional knowledge about technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy (Criterion D). Therefore, Far Western also has no basis to alter the previous recommendation of ineligible for listing under all criteria concerning the historical component.

CA-SBR-13041 (P-36-014564)

This prehistoric campsite and associated feature were originally recorded in 2008 and noted to include a total of 415 artifacts, consisting of abundant CCS and FGV debitage reflecting all stages of manufacture, 25 cores, two hammerstones, five flake tools, a biface, and a linear rock alignment, mostly distributed among 10 variably-sized loci (Loci 1–10). The possibly historical oblong rock cairn in Locus 4 was found to be oriented east and cover an area of 140 x 120 meters (sic; likely 1.4 x 1.2 meters). An eligibility recommendation was not offered during the original recordation

Far Western re-surveyed that portion of the site area that intersected the L-300 pipeline corridor in February 2013 and noted nothing new or different from the original recording (Higgins et al. 2013). Far Western again revisited the site area that overlapped the L-300 corridor, including portions of Locus 6, in February 2018, and also did not find any deviation in character, extent, or constituents.

Given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, Far Western recommends that the site be considered ineligible for listing under Criterion D. The site is also not clearly associated with a significant event or person, and is ineligible for listing under Criteria A and B. However, further research is required to assess the contribution of the site under Criterion C considering potentially significant contributions offered by the associated rock feature. That said, this feature is outside the current Project APE and will not be affected by use of the L-300 corridor as an access road.

CA-SBR-13101/H (P-36-014625)

This multi-component amorphous site consists of a historic-era refuse deposit and a prehistoric campsite. The site was originally recorded in 2008 and described a low-density scatter of historic-era refuse, including cone-top cans, "church-key" opened beverage cans, and clear glass bottle fragments. The site was revisited in 2010, resulting in the documentation of additional historic-era debris (more than 200 items total), as well as previously undocumented prehistoric lithics. The site boundary was expanded, and seven artifact concentrations were also documented, noted to include a variety of cans, tobacco tins, fish tins, miscellaneous metal debris, railroad spikes, ceramics, glass bottle fragments and window pane glass fragments. Three rock features were likewise recorded in 2010, including a rock stack associated with railroad debris, a mound of historical construction debris and rubble, and a small cairn. The prehistoric component was noted to include 96 red, yellow, brown CCS core and biface reduction flakes, and one early stage red CCS biface.

The prehistoric component was interpreted as possibly representing a single reduction event incorporating the creation, refinement, and sharpening of a few artifacts, such as blades or projectile points. The historical component was interpreted to represent several episodes of refuse discard, including that possibly associated with a temporary railroad workers camp. Historical artifacts were estimated to date from the late nineteenth century to the modern era. An eligibility recommendation was not offered during the original recordation or based on a subsequent update. Far Western revisited the site in 2018 and found the site boundary and cultural constituents as previously documented. Neither the prehistoric or historical components are clearly associated with a significant event or person (Criteria A and B), nor do they embody distinctive characteristics or components (Criterion C). Given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, the prehistoric component does not contribute significant information regarding regional research themes (Criterion D). Far Western therefore recommends that the prehistoric component be considered ineligible for listing under all criteria.

Similarly, observable historical debris is not unique, is otherwise unassociated with evidence of distinctive camp landscaping, and does not speak to aspects of socio-economic differentiation in railroad work camps, and therefore also does not contribute significant information regarding regional research themes (Criterion D). The historical component is, moreover, not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). The historical component is therefore also recommended ineligible for listing under all criteria.

CA-SBR-13103/H (P-36-014627)

This multi-component site was originally recorded in 2008, and initially noted to encompass a 34-x-30-meter CCS debitage and flaked stone tool scatter. The site was revisited and updated in 2010 to incorporate an amorphous distribution of prehistoric short-term occupation debris (biface reduction debitage, bifaces, and a cobble tool) and sparse historical machine parts, domestic debris, and roadside trash estimated to date to the early-to-mid twentieth century (ca. 1935–1952); a roadside marker was also found.

Far Western revisited the site area in 2018. Site components were not found within the APE of the current project, and the extant boundary doesn't overlap Likewise, the site record datum did not appear to match that on the ground. New UTMs were secured at the mapped datum location, and two previously recorded bifaces (A2 & A3) were re-located in proximity.

Previous records did not offer eligibility recommendations, although the potential for buried prehistoric deposits was deemed to be negligible. Far Western's prehistoric sensitivity modeling does not dispute this. As such, and considering the lack of prehistoric temporal diagnostics, and likely uninformative nature of either component regarding regional research themes (Criterion D). Moreover, neither the prehistoric or historical components are clearly associated with a significant event or person (Criteria A and B), nor do they embody distinctive characteristics or components (Criterion C). Far Western therefore recommends that the site be considered ineligible for listing under all criteria.

CA-SBR-13114H (P-36-014875)

This 12-kilovolt transmission line was constructed in 1961 (Southern California Edison), associated 207-foot-long segment of access road, and proximate sparse refuse deposit was recorded in 2008. That record noted that the transmission line corridor is a modest example of similar utility lines well-documented throughout the region, and that it is unassociated with significant persons/events and likewise has little potential to contribute significant historical information. It was recommended ineligible for listing as a result.

Far Western revisited a segment of the utility line that crossed the L-300A/B corridor in March 2018 and did not identify anything that alters character of the site as originally recorded. However, the previously recorded road segment was not observed in the updated segment. Far Western has no reason to change the previous recommendation of ineligible for listing. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-13115H (P-36-014876)

This resource is the Southern California Edison 220-kV North Transmission Line (also referred to as the SCE North or Hoover-Chino No. 1) that was built in the 1930s. URS documented a segment of this resource in 2008 and recommended the line eligible to the National Register under Criterion A and to the California Register under Criterion 1. The site was revisited by URS in 2010 and the eligibility status was confirmed (Nixon et al. 2010). Nixon et al. (2010) did not find any evidence of association with significant persons and did not consider the line to have the potential to yield significant information, and the line was recommended ineligible for listing under Criteria B and D, accordingly. However, they reasoned that further research was necessary to evaluate the line's eligibility under Criterion C.

Far Western revisited that segment in 2013 and found it as previously described. In 2014, a single tower (#M190-T1 Lugo-Pisgah #1) was subsequently recorded and was recommended as not eligible to the National Register despite the fact that the tower is in its original condition and is one of many along a line that was recommended as eligible. In February 2018, Far Western revisited the location where this resource intersects with the current study area and found the transmission line to be as previously described. We have no basis to alter the existing recommendation of eligible under Criterion A, nor did we find anything that would change the site's ineligibility under Criteria B and D. We did conduct further research to assess the site's eligibility under Criterion C.

CA-SBR-13116H (P-36-014877)

This resource is the Southern California Edison 220-kV South Transmission Line (also referred to as the SCE South or Hoover-Chino No. 2) that was built in the 1930s. URS documented a segment of this resource in 2008 and recommended the line eligible to the National Register under Criterion A and to the California Register under Criterion 1. The site was revisited by URS in 2010 and the eligibility status was confirmed. Nixon et al. (2010) did not find any evidence of association with significant persons and did not consider the line to have the potential to yield significant information, and the line was recommended ineligible for listing under Criteria B and D, accordingly. However, they reasoned that further research was necessary to evaluate the line's eligibility under Criterion C.

In February 2018, Far Western revisited the location where the transmission line crosses the current study area, 0.9 miles northeast of the intersection of Pisgah Crater Road and the National Trails Highway in Pisgah, California. The transmission line appeared as previously described, and no additional features or associated artifacts were observed. We have no basis to alter the existing recommendation of eligible under Criterion A. Moreover, we did not find anything that would change the site's ineligibility under Criteria B and D, nor did we conduct further research to assess the site's eligibility under Criterion C.

CA-SBR-13117H (P-36-014878)

This resource is the Pisgah Substation, located 0.8-mile northwest of the intersection of Pisgah Crater Road and the National Trails Highway, in Pisgah, California. It is a Southern California Edison switching station constructed in 1940 and first recorded by Erickson in 2008. Erickson found that the three buildings which comprise the substation retained their historical integrity and, as a component of the Southern California Edison 220-kV North and South Transmission Lines, recommended the substation eligible to the National Register under Criterion A and to the California Register under Criterion 1 as a significant contributing element to the eligibility of the Southern California Edison 220-kV South Transmission Line. The site was revisited by URS in 2010 and the eligibility status was confirmed (Nixon et al. 2010). The eligibility of the station was not specifically assessed under Criteria A, C, and D, but Nixon et al. (2010) referenced evaluation justifications presented in the SBR-13115H and SBR-13116 records. Namely, they did not find any evidence of association with significant persons and did not consider the line to have the potential to yield significant information, and thus recommended these sites ineligible for listing under Criteria B and D, accordingly. They also reasoned that further research was necessary to evaluate the line's eligibility under Criterion C.

In February 2018, Far Western revisited the site and found it as previously described, with no additional features or associated artifacts observed. We have no basis for altering the existing recommendation of eligible under Criterion A. As with SBR-13115H and SBR-13116H, we did not find anything that would change the site's ineligibility under Criteria B and D, nor did we conduct further research to assess the site's eligibility under Criterion C.

CA-SBR-13118H (P-36-014879)

Hector Road was originally documented as four separate road segments of variable length, located within and surrounding the town of Pisgah, California (Nixon 2008). The road was thought to have provided access to mining areas or for the construction of the SCE 220-kV North and South Transmission Lines. Segments 2–4 consisted of a one-lane, graded dirt road, while Segment 1, which was located closest to Highway 40, consisted of a two-lane paved road. No artifacts or additional features were observed during the original documentation efforts. At that time, the road was recommended as ineligible to the National or California Register under all criteria.

In 2013, Far Western revisited Segment 1, surveying and documenting a 0.6-mile segment of Hector Road as a bladed and maintained gravel road measuring 20 feet wide. No artifacts or features were observed adjacent to the road. GIS data from the SCCIC has connected the four segments of Hector Road, resulting in a larger linear feature approximately seven miles long and traveling north and northeast from Pisgah, California.

In February 2018, Far Western revisited Hector Road for the current project, noting that the segment of the road intersecting the project APE aligns with the originally documented Segment 1. The observed gravel road measures 18 feet wide and has low berms from recent blading. The paved portion of Hector Road starts at the Highway 40 and extends 0.1 mile north and enters the southern portion of the PG&E staging area. It follows the section line between Sections 9 and 10 (T08N/R05E); this alignment is not depicted on the 1955 USGS Hector 15-minute quadrangle, suggesting it is a more recent (i.e., post-1955) feature. Far Western made no observations that would alter the previous recommendation of ineligible for listing. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-13119H (P-36-014880)

This segment of Pisgah Crater Road was originally documented in 2008 by URS Corporation, and includes a 24-foot-wide, 1.7-mile-long segment of paved road. The road was recommended as ineligible for the listing in the National Register and the California Register under all criteria. Far Western revisited the site in 2013 during a survey of the L-300 A/B right-of-way. During this revisit, the road appeared as previously described and followed the previously documented alignment.

In February 2018, Far Western revisited the site again, and once again the road appeared as previously described. No additional features or cultural constituents were noted. The eastern portion of the historic-era segment is a PG&E access road used for pipeline maintenance and upkeep. The road does not appear on the 1955 Cady Mountains 15-minute USGS quadrangle, which does show a double "pipeline" alignment in this location. It seems likely that the road is a relatively modern (i.e., post-1955) access route for the pipeline. Far Western has no basis for altering the previous recommendation that this resource is ineligible for listing. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-13449/H (P-36-020872)

This very large, amorphous multi-component site is south of the BNSF railroad and north of I-40. It was initially recorded in 2009 as an amalgamation of previously recorded sites SBR-13087, -13108H, -13109, -13110, and -13112 and previously documented isolates P-36-014803, -014854, and -014857. The site is also transected by an old alignment of the National Trails Highway (SBR-2910H).

The prehistoric component was noted to include 41 loci (many of which are probable SRLs), within which three-quarters of the more than 1,300 prehistoric artifacts documented were incorporated. Observed artifacts included CCS and FGV flakes, which comprised 97% of the assemblage, alongside cores, bifaces, flake tools, tested cobbles, and at least one millingslab. The historical component was noted to include seven features and eight concentrations of refuse, which contained a quarter of the more than 600 artifacts observed, including miscellaneous cans (food, beverage, paint, and oil), jar and bottle glass, ceramic tableware fragments, miscellaneous metal hardware, and construction debris. Documented features included four rock clusters, of which one incorporated a wooden fence post, a concrete pad, a metal and wood windsock base, and a large geoglyph composed of local stones that read "Pisgah 2077-30." The prehistoric component was interpreted to be a multiple activity area and the historical component a mix of roadside dumping dating between 1912 and 1930, construction of a nearby substation and transmission lines between 1938 and 1940, World War II-era aerial military training, and post-1950s recreational use. An eligibility recommendation was not offered at the time of recordation.

The northeastern sector of the site was revisited, and its record updated in 2015 as part of a larger regional inventory, the APE of which only intersected roughly a quarter of the site. Three of the previously recorded prehistoric SRLs, two previously recorded historical loci, and three of the seven previously documented features were fully re-recorded during that effort. An additional historical refuse locus was also documented. Observed artifacts and features were not appreciably different from their original records, save one of the previously documented rock clusters, which was found to be a 2010 BLM cadastral marker. That record did not offer an eligibility assessment of the entire site but noted that intersected components were not significant, and that the intersected area would not be considered eligible.

The APE of the current project intersects the far eastern portion of the site, the 15-meter off road-edge buffer which encompasses Locus 38 (a 12-flake SRL) and Features 5 and 6, which were updated as a haphazardly-assembled cluster of rocks and a concrete pad and considered to be insignificant and ineligible site components. Nothing new was found during Far Western's February 2018 re-survey of that portion of the site intersected by the current project APE. Far Western therefore finds no reason to dispute the previous recommendation that the northeastern site area be considered non-contributing. Likewise, single SRLs and multi-SRL pavement quarries are regionally prolific, highly redundant, and of little informative value. The site also occupies an area modeled to have the lowest potential to preserve buried archaeological deposits. Far Western therefore recommends that Locus 38 also be considered an insignificant and ineligible component of the site under Criterion D. Moreover, the prehistoric component is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Further research is required to assess the eligibility of the site's historical component.

CA-SBR-13619H (P-36-021095)

This resource is located 0.7-mile west of the intersection of Mac Tul Road and the National Trails Highway, in Chambless, California. It was originally documented in 2009 by Far Western as a 2.5-mile-long dirt road and two associated loci (designated A and B) consisting of wood planking laid on the gravel road base and scattered historic-era refuse. The road was originally built to provide transportation between the Iron Hat Mine and the railroad siding at Altura. The road was seven feet wide at the top and nine feet wide at the base, with 0–12-inch berms; it was located primarily south of the National Trails Highway.

In 2013, Far Western revisited the site as part of a survey of the L-300 A/B right-of-way. During this revisit, the recordation was extended approximately 0.6 miles to the north. This segment of unimproved dirt road included scattered historic-era cans (hole-in-cap) and more recent cans ("church-key" opened beverage cans, sanitary food cans). An updated records search for the current project showed that the Information Center GIS data extends the road an additional 1.2 miles to the north.

In February 2018, Far Western revisited the site once again, noting that the resource appears as previously documented; however, the portion that crosses the pipeline corridor is partially washed out. The section north of the pipeline corridor is 35 feet wide, with one-foot berms, while the section to the south is 37.5 feet wide, with 1.5-foot berms. Additional details regarding the historic-era debris scatter were also collected: the scatter includes 23 cans, one colorless glass bottle, and miscellaneous metal debris. The section of road connecting the National Trails Highway in the south with the pipeline in the north is a planned PG&E access road for upcoming hydrostatic testing.

The Iron Hat Mine is depicted on the 1956 Cadiz 15-minute quadrangle, but no information was found on the mine in Clark (1970) or Swope and Gregory (2017). Both the mine and the road are depicted on the 1956 Cadiz 15-minute USGS quadrangle, and a search of the GLO patent records show patents being issued to Arthur Doran of Los Angeles for Iron Hat Mines #1, #2, #4, #5, and #6 in July of that same year. It would appear, then, that the road dates to the mid-twentieth century. The segment recorded for this study contains no associated engineering features (culverts, bridges, retaining walls, etc.), and the artifacts found in association are common, mass-produced items found along almost any rural roadway in the region. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D). It is an unremarkable example of a common resource and is recommended ineligible for listing under all criteria.

CA-SBR-13768 (P-36-021435)

This prehistoric pavement quarry is situated between the L-300 A and B pipeline corridors. It was originally recorded in 2010 as a lithic procurement and initial reduction locality consisting of 19 multi-hued jasper flakes and a tested cobble; distinct SRLs were not observed. The site was noted to be in poor condition due to pipeline construction and subsequent use of the overlying access road. It was recommended ineligible under all criteria.

Far Western revisited the site area in 2013 and observed no deviation in site character, extent, or condition from that originally recorded. Far Western again revisited the site in February 2018 and observed several more flakes extending northeast of the documented site area, for which a new boundary was captured.

Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. This site also encompasses an area modeled to have the lowest potential for buried archaeological deposits and, moreover, it appears to have been significantly impacted by pipeline construction and subsequent use of the overlying dirt access road, further diminishing its potential to preserve significant information regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Far Western therefore finds no reason to alter the previous recommendation of ineligible for listing under all criteria.

CA-SBR-15114H (P-36-023926)

This road was originally documented in 2009. It is depicted on the 1956 USGS Danby 15-minute quadrangle, following the present-day alignment of Skeleton Pass Road from the current Danby Road (recorded as EG-X18) in the north to Cadiz Road in the South. It does not appear on the only other readily available historical map, the 1856 GLO plat. Fryman (2012) notes that original Danby-Parker Road was a major north-south connecting route prior to the construction of the Santa Fe Parker Branch Railroad and Cadiz-Rice Road (SBR-11583H) and was primarily utilized after 1893 to service transport of salt from Danby Dry Lake by the Crystal Salt Company. The 13-mile segment documented in 2009 was noted to range between 15 and 22 feet wide; associated cultural constituents or additional features were not documented. The 2009 site record indicates that the road had been improved and graded and was deemed to be mostly in good condition. Fryman (2012) contends that the documented segment possessed minimal potential to yield archaeological data, but that it may be important as a historical or engineering source. An eligibility recommendation was not offered, however.

The road was revisited in 2013 by Far Western, who examined a 0.6-mile-long, 16-foot wide segment that intersected the L-300 pipeline corridor. Church-key opened cans and flat top beer cans (1950s) were observed adjacent to the road, attesting to the use of the current route of Skeleton Pass Road since at least the mid-twentieth century.

In February 2018, Far Western surveyed a 1.3-mile section of Skeleton Pass Road extending between the Danby townsite (SBR-3278H) and a proposed work area associated with hydrostatic testing of L-300. This bermed (ca. 12 feet wide x 1.5 feet tall) 22-foot-wide segment is regularly bladed and maintained. Sparse road-tossed litter was observed, including church-key-opened beverage cans and a couple of bottles bearing Owens-Illinois and Hazel-Atlas makers marks dating between 1924 and 1960, further attesting to use of this route since the mid-twentieth century.

Segments of intact asphalt and parallel rock alignments were observed adjacent to the main bladed road and likely represent an abandoned portion of the original Danby-Parker Road. The abandoned road bed is approximately 8 feet wide, with the two paralleling rock alignments comprising low berms each two feet wide and consisting of golf ball-to-softball-sized local cobbles. Visible asphalt sections incorporate igneous cobbles and look to have been re-surfaced at some point prior to abandonment (presumably before 1956). Sparse square-cut nails (pre-1910) and fragments of church-key-opened beverage cans were found in association, the latter of which are probably linked to use of Skeleton Pass Road.

Minor transportation corridors in the Mojave Desert, most of which remain in use and maintained, are rarely considered to have significant data potential or to retain historical integrity. Such is the case with current unpaved course of Skeleton Pass Road (SBR-15114H), which is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), does not embody distinctive characteristics or components (Criterion C), and does not significantly contribute to region al research themes (Criterion D). It is therefore recommended ineligible under all criteria.

The adjacent preserved portion of the paved Danby-Parker Road does, however, possess some integrity of location, setting, design, materials, and workmanship, and is part of a resource known to have been an important transportation corridor that has made a significant contribution to the history of regional mining and settlement. This segment is therefore eligible for listing under Criterion A. It does not possess any characteristics qualifying as eligible under Criteria B, C, or D.

CA-SBR-15115H (P-36-023927; with Mary Maniery)

This historic-era segment of Sunflower Spring Road was originally documented in 2012 as extending 5.5 miles south of Essex, California (McKenna 2012). The road was measured at 30 feet wide and noted to be variably composed of either hard packed, or loose sands, with some exposed rock. No additional features or cultural constituents were observed. The road was associated with a buried pipeline and was regularly used as a dirt access road for said pipeline. The record notes that the road may date to the late 1800s and may have been used to access nearby mines, but it was not considered to be older than 1883, the year that the town of Essex was established. An eligibility recommendation was not offered at the time of initial recordation.

In 2013, Far Western revisited a small segment of the road that intersected the L-300 right-of-way and the road was observed as originally described; multiple church-key-opened beverage cans were also found in association.

In February 2018, Far Western surveyed the current course of the road from its intersection with the L-300 corridor to Essex for use as a proposed access road for the current project (Hatch 861C). The road appears to have been bladed in the past but is notably washed-out in some areas. Sections of the older two-track were observed adjacent to the modern bladed road. The segment that overlaps the L-300 pipeline corridor is 19 feet wide, with 1.5-foot berms, and associated artifacts were not observed within the APE. Two associated isolated resources were identified north of the L-300 corridor, including a mid-twentieth-century Pepsi bottle (EM-R49) and a milk can that could date anywhere between 1917 and 1985 (NS-R22), and a probable mid-twentieth-century recreational camping site (EM-X43).

Today, Sunflower Springs Road extends from the community of Essex and National Old Trails Highway (Route 66) to the southeast, into the Old Woman Mountains. Essex was located on the line of the Atlantic and Pacific Railroad, purchased by the AT&SF Railroad in 1884. The AT&SF bought the tracks between Needles and Barstow to link its main line tracks to Los Angeles. The establishment of Essex facilitated the success of the Bonanza King Mine and others (Swope and Gregory 2017:2.19).

The road is not depicted on Perris' Miner's Map from 1896, nor is it depicted on Mendenhall's 1907 map of watering holes in the desert. A 1913 BLM GLO plat map (GLO 1913) depicts a segment of the Sunflower Springs Road and it is labeled as the "Road to Essex." The earliest USGS map that depicts Sunflower Springs Road is the 1954 Needles, California, 1:250,000 scale map, and it is clear from this map that Sunflower Springs Road is named after nearby Sunflower Spring. Weaver's Well and the Gold Fleece Mine are depicted adjacent and to the west of the road, just before the road splits and heads to Danby to the west and Essex to the north. The road was likely used to access mines like the Golden Fleece Mine, Copper King Mine, and Oro Plata Mine.

As noted in the original record, Sunflower Springs Road appears to have been constructed in the mid-1880s, a time when completion of the railroad led to a mining boom in the region. The road connected the mines in Old Woman Mountains to the Essex Railroad Station. It appears to have been the main road from Essex into the mountains and led directly to the Copper King Mine. Secondary roads branched off Sunflower Springs Road to other mines in the area. The completion of the railroad triggered increased mining in the area and roads were constructed throughout the region to facilitate transporting ores to railroad sidings at Daggett, Essex, Lavik, Bagdad, and others (Fryman 2012; Swope and Gregory 2017).

While associated with mining in the area, it is not the first road built and other mining districts, such as Calico near Daggett, were more productive than Old Woman Mountain mines. Therefore, it does not meet Criterion A. The builder of the road is unknown and it does not satisfy Criterion B. The road is a dirt access road with few features and does not exhibit unusual engineering design or methods of construction, and therefore does not qualify as eligible under Criterion C. Artifacts along the road post-date 1935 and represent roadside disposal by passers, and do not, as such, qualify under Criterion D. The road has also been widened, graded, and maintained through the years to accommodate installation and maintenance of existing pipelines and utilities and no longer has the appearance of a nineteenth-century route used by freight wagons to transport ore. Given the lack of importance under any criteria and compromised integrity, the Sunflower Springs Road is considered ineligible for listing.

CA-SBR-15439 (P-36-024257)

This prehistoric campsite is just north of a west-bound I-40 rest area and just southwest of the Oasis Intaglios (SBR-15442). It was originally recorded in 2011 as a moderately dense lithic scatter consisting of 28 brown and red/yellow CCS flakes as a biface, situated atop and adjacent to a terminal portion of the Pisgah Crater Lava Flow (Lloyd and Earle 2011). An eligibility recommendation was not offered at the time of recordation.

Far Western revisited the site area in February 2018 and observed no deviation in site character, extent, or condition from that originally recorded. Given the lack of temporally diagnostic prehistoric artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, the site does not significantly contribute to regional research themes (Criterion D). It also is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history, (Criterion A), is not obviously linked to a significant historical figure (Criterion B), and does not embody distinctive characteristics or components (Criterion C). Far Western therefore recommends that this site be considered ineligible for listing under all criteria.

CA-SBR-15440/H (P-36-024258; with Mary Maniery)

This multi-component site was originally recorded in 2011 (Lloyd and Earle 2011). The historical component was noted to include thousands of cans, bottles, ceramics, miscellaneous metal, building materials, and tires comprising a massive dump dating between the 1930s and 1950s that was surmised to have possibly been associated with a roadhouse, restaurant, or garage along US Route 66, which is one-quarter mile south of the site. The prehistoric component was noted to include 100–200 CCS biface thinning flakes and shatter, three cores, two bifaces, and two simple flake tools. Historical debris was noted to be dispersed throughout the site area, but efforts were extended to map the highest densities of debris, and the full extent of the prehistoric component. Test pits were not excavated, but soil probes confirmed that the site area encompassed pockets of sediment extending to at least 50 cmbs. An eligibility recommendation was not offered during the original recordation.

Far Western revisited that portion of the site intersected by the L-300 pipeline corridor in 2013 and did not identify anything different in character or condition from that observed during the original recording. Far Western again revisited the site in 2018, resurveyed the western and eastern site areas overlapped by proposed hydrotesting work areas, and inventoried a connecting access road. Again, nothing different from that originally recorded was identified in the surveyed areas, and the two documented bifaces were re-located.

Given the lack of temporally diagnostic prehistoric artifacts, considering the low diversity of the observable prehistoric assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, the prehistoric component lacks the potential to significantly speak to regional research themes (Criterion D). Moreover, the prehistoric component is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, Far Western recommends that the prehistoric component of this site be considered ineligible for listing under all criteria.

The historical component of site SBR-15440/H consists of a refuse deposit likely associated with the operation of an historical roadside stop known as the Mojave Water Camp, located along Route 66. It was one of several roadside stops or stations established to serve travelers. These roadside stations offered travelers a place to fuel up, grab a bite to eat, and rest. The Mojave Water Camp also had a small garage to fix minor repairs, a general store (for purchasing snacks, cold drinks, and perhaps souvenirs), and cabins for overnight stays. The Mojave Water Camp was constructed by 1939 and may have been in use until at least 1955, based on archival research and historical USGS topographic maps (University of California 2018; USGS 1955). Diagnostic artifacts from the site, including embossed and ACL soda bottles, a toilet tank lid, and lithographed cans, suggest a primary deposition date in the late 1940s to early 1950s, a time when travel along Route 66 was extremely popular.

According to the NPS, "U.S. Highway 66—popularly known as Route 66 or the Mother Road—holds a special place in American consciousness and evokes images of simpler times, mom and pop businesses, and the icons of a mobile nation on the road" (NPS 2018). Crossing through 2,000 miles of America, the section of road between Barstow and Needles was considered brutal; the hottest leg of the route, on any road in America. In the early days of its use, vehicles often overheated and numerous rest stops sprang up along the route to provide respite from the heat, as well as fuel, car repairs, and much needed water.

Artifacts in this deposit reflect the various functions/amenities of this roadside station, including a garage and gas station (spark plugs, tires, head gaskets, Mac's Stop Leak, oil cans); café (restaurant-wares, drinking glasses, stemware, cooking oil, pie tins); and rest area (toilet tank lid, medicine bottles, light bulb bases, mattress springs). Goods were produced from a variety of places; including Southern California, Arizona, Oklahoma, New Mexico, Texas indicative of the use of Route 66 as a national route. The assemblage numbers in the thousands and is located north of where the former buildings stood. The deposit has many identifiable manufacturing marks, brand labels, and other diagnostic materials. While primarily confined to the surface, the site appears to retain horizontal stratigraphy related to depositional episodes and there is a clear distinction between garage, household, and restaurant materials. Many similar sites along Route 66 have been cleaned up or picked over by treasure hunters, increasing the research value of this intact deposit. Based on this assessment, the site meets the AIMS-R conditions set forth in the research design, has a clear association with the Mojave Water Camp and Route 66 and contains a variety of functionally distinct artifacts.

While the site is associated with the Mojave Water Camp and Route 66, all associated buildings, vegetation, and evidence of the rest stop have been removed. Therefore, the site does not have adequate physical characteristics and integrity to qualify under Criterion A. Under Criterion D, the site retains integrity of location, setting, materials, workmanship, association and feeling with Route 66. It also meets the AIMS-R questions and contains a wide variety of materials and functional items to address ongoing research questions regarding use of Route 66, operation of a small rest stop along the route, and garage activities. The site is recommended as eligible for listing at a local level with a period of significance of ca. 1935 (estimated date of the rest stop construction) to 1960, when the main use period ended.

CA-SBR-15443/H (P-36-024261)

This multi-component site consists of a prehistoric lithic reduction station and historical refuse deposit, situated just north of I-40 and south of a terminal extent of the Pisgah Crater Lava Flow, was originally recorded in 2011 (Lloyd and Earle 2011). At the time of recordation, it was deemed to be an update of P-36-001804-12, an unspecified grouping of flakes identified as "Troy Lake II" possibly documented as part of Simpson's (1965) Troy Lake inventory. The primary number was subsequently changed to P-36-024261 in 2012.

As documented in 2011, the prehistoric component was noted to consist of a dozen CCS core and biface reduction flakes and interpreted to represent a temporary tool manufacturing and refurbishing site. The historical component was noted to include more than 200 fragments of clear, aqua, brown, and yellow glass; white earthenware; fiesta ware; and porcelain fragments interpreted to reflect an early twentieth-century episode of roadside dumping. An eligibility recommendation was not offered during the original recordation.

Far Western revisited that portion of the site intersected by the L-300 pipeline corridor in 2013 and did not identify anything different in character or condition from that observed during the original recording (Higgins et al. 2013). Far Western again revisited the site in February 2018 and was able to re-locate six of the 12 originally documented flakes. Additional historical material was not identified, but a GIS boundary was secured around historical artifacts and identified as Concentration 1. In addition, Far Western identified a thermal feature eroding out of a sand dune: a cluster of about 30 pieces of lava rock and FGV, in association with pieces of CCS debitage.

Despite the lack of temporally diagnostic prehistoric artifacts or a diverse assemblage, the presence of a partially buried thermal feature indicates the potential for additional features, artifacts, and perhaps datable organic remains that are not visible on the surface. The prehistoric component therefore warrants further research to fully assess its eligibility for listing, including limited test excavation.

The historical roadside refuse deposits, however, are recommended ineligible under all criteria. Sites of this kind are common and of little to no informative value regarding regional research themes (Criterion D), nor do they speak to significant historical events or persons (Criteria A and B). Moreover, the site does not embody distinctive characteristics or components (Criterion C).

CA-SBR-15857H (P-36-024816)

This is a high-voltage transmission line depicted on the Sawtooth 15-minute topographic maps dating to 1950 and 1951. A small segment of the resource was initially recorded by in 2011, and it was noted that this resource currently transmits electricity from Parker Dam (Lake Havasu) to a substation near Water Road (off I-40, California). Far Western later recorded a previously undocumented half-mile segment of the line that intersected the L-300 pipeline corridor (Higgins et al. 2013). It was also noted to be active and maintained, and it did not appear to be eligible for listing.

Far Western re-visited the segment of the site that intersected the L-300 corridor in 2018 and noted nothing different in character or condition from previous updates. Further research is needed to assess the eligibility of the entire line.

CA-SBR-16742H (P-36-026544)

This is a segment of Mac Tul Road in Chambless, first documented by Far Western in 2013. That record also noted two refuse deposits and suggested that the road probably continued beyond the survey corridor. In 2018 Far Western revisited the site, re-locating and recording the two refuse deposits and identifying a third, and also recording two overhead utility lines. An updated records search also indicated that the road continues another two miles to the north.

The refuse deposits include domestic items: vent-hole milk cans, tobacco tins, meat and fish tins, coffee cans, sanitary food cans, ceramic fragments, bottle glass, window pane glass, "church-key" opened beverage cans, buttons, a metal spoon. The three deposits lie near along the eastern side of Mac Tul Road. Artifacts suggest deposition dates in the 1940–1960 range.

The road itself is a dirt and gravel alignment up to 35 feet wide with four- to six-inch berms. It appears to be moderately well used but infrequently maintained. It runs north from Route 66, crosses the L-300 pipelines, and branches into three smaller roads at the location of a "Water Tank" and three other structures depicted on the 1956 Cadiz 15-minute quadrangle. The central of the three branches continues north to end at the foot of the Marble Mountains near the Iron Hat Mine and several unnamed mining locations. As noted above in the description of resource SBR-13619H, the Iron Hat Mine is not mentioned in Clark (1970) or Swope and Gregory (2017), suggesting that it was never a major or important operation. On-line GLO patent records show patents being issued to Arthur Doran of Los Angeles for Iron Hat Mines #1, #2, #4, #5, and #6 in 1956, suggesting that the road was built around that same time.

Although the road appears to be associated with mining, there is no evidence that the mines for which it provided accesses ever developed into noteworthy operations; therefore, it would not have played a major role in the development of mining (or transportation) in the region (Criterion A). Nor is it associated with known groups or individuals of historical significance (Criterion B). The road does not contain distinctive or unique characteristics but is one of a great many dirt and gravel roads crisscrossing the region (Criterion C). The refuse dumps found along the road are made up of common, mass-produced items from the mid-twentieth century that lack association and rarity and therefore have little data potential (Criterion D). The road and the adjoining dumps are therefore recommended ineligible under all criteria.

CA-SBR-16759H (P-36-026457)

This small historic-era refuse dump was recorded by Far Western in 2013. It is located adjacent to the Line 300A access road (P-36-026456, see above). Far Western revisited the site in 2018 and found no changes. The refuse consists of domestic items, including about 40 cans (mostly "church-key" opened beverage cans, 1930–1960s), decorated porcelain and earthenware ceramic fragments, two Evenflo-brand baby bottles (mid-twentieth century to present), car parts, and several hundred fragments of colorless, brown, and green bottle glass. Diagnostic marks include a 1938–ca. 1960 Anchor Hocking mark on a colorless cylindrical bottle base, two Obear Nestor Glass Company marks on brown cylindrical bottle bases (1915–1978, probably 1961 and 1962), a 1934–ca. 1968 Glass Container Corporation mark on the base to a green cylindrical bottle, and a brown cylindrical bottle base with a 1961–1962 American Wheaton Glass Corporation mark. All indications are that this is a domestic refuse dump dating to the early 1960s.

The refuse dump cannot be linked to any known individual, household, or other entity, and it played no important role in the settlement of the area (Criteria A and B). There are no engineering, design, or construction features, and the data potential is quite limited, beyond the data already recorded (Criteria C and D). This dump site is therefore recommended ineligible for listing under all criteria.

CA-SBR-16773 (P-36-026488)

This prehistoric lithic reduction station was recorded by Far Western in 2013 (Higgins et al. 2013) It was noted to consists of sparse scatter of approximately 32 CCS flakes; neither tools nor features were observed. The site was deemed to have been minimally impacted by pipeline construction. An eligibility recommendation was not offered at the time of recordation.

Far Western revisited the site if February 2018, and observed additional debitage, including a total of 47 variegated CCS biface and core reduction flakes, requiring an expansion of the site boundary to the east and west. No new features or tools were observed, nor were additional site impacts. Although the site lacks temporally diagnostic prehistoric artifacts and the observable assemblages possesses low diversity, the site encompasses an area modeled to have high sensitivity for buried archaeological deposits. As such, further research, including limited excavation is necessary to assess site eligibility.

CA-SBR-16782 (P-36-026514)

This Pinto-era campsite was originally recorded by Far Western 2013 (Higgins et al. 2013). A Pinto projectile point, a biface fragment, and approximately 70 CCS and FGV flakes were documented within a 93-x-20-meter area adjacent to a standing barbed-wire fence. The site was deemed to be in fair condition due to nearby pipeline construction, the erection of the aforementioned fence, and use of a nearby access road. An eligibility recommendation was not offered at the time of recordation.

Far Western revisited the site in February 2018 and found it to be mostly as recorded in 2013. Two new tools, including a 6.3-x-3.4-x-1.4-centimeter CCS fine percussion biface and a 5-x-4.5-x-3-centimeter bifacial core, along with additional flakes were observed outside the previously recorded site boundary. The site boundary was therefore expanded to the north and west to capture the full extent of the observable assemblage.

The site is not clearly associated with a significant event or individual (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Although the site is associated with a temporally diagnostic artifact, it encompasses an area modeled to have the lowest potential to preserved buried archaeological deposits and possesses a comparably low diversity artifact assemblage. The site can provide a moderate amount of information regarding Middle Holocene land use and subsistence patterns but does not overall satisfy eligibility requirements (Criterion D). The site is therefore recommended ineligible for listing under all criteria.

CA-SBR-16784H (P-36-026516)

This resource is a small historical refuse scatter and rock ring along the southern edge of the L-300 pipeline corridor, roughly 1.5 miles southeast of Pisgah. It was recorded by Far Western in 2013 as a can scatter; crews revisiting the site in 2018 identified the rock ring. The ring is roughly three feet in diameter (outside edge to outside edge) and made up of 20 large cobbles and small boulders. Sparse charcoal is visible inside the ring, along with small burnt long bone fragments from an unidentified mammal. The date of the ring is unknown, but the artifacts found nearby include a cone-top beverage can (1935–1950s), several "church-key" opened cans (1935–1960s), two sanitary food cans, and two bottles (Wesson Oil and a vinegar-type bottle, neither with maker's marks). All indications are that the resource is a ca. 1940s campsite with campfire ring.

There is no way to link this small site to any of the historical themes identified in the research design (Criterion A), nor to a known group or individual who may have been important in local, regional, or extra-regional history (Criterion B). The only feature is the rock ring, and it does not demonstrate distinctive or unique characteristics of engineering, design, or construction (Criterion C). The data potential of this tiny assemblage is minimal, as it cannot provide new or important information to address regional research issues (Criterion D). Therefore, Far Western recommends the site ineligible for listing under all criteria.

CA-SBR-16785 (P-36-026517)

This prehistoric pavement quarry was originally recorded by Far Western in 2013. Cultural constituents were noted to include eight red and yellow CCS biface and core reduction flakes in a 14-x-7-meter area. The site lacked obvious impacts and was in good condition. An eligibility recommendation was not offered at the time of recordation.

Far Western revisited the site area in February 2018, and found additional material, including two SRLs, a formed flake tool, and 44 additional CCS flakes outside of the SRLs. The site boundary was therefore expanded to capture the full extent of the observable assemblage. The SRLs contain between 10 and 11 red CCS core reduction flakes apiece within areas of 1.6 and 3.5 square meters, respectively.

Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. The site also encompasses an area modeled to have low potential for buried archaeological deposits. As such and given that the site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D), this site is recommended ineligible for listing under all criteria.

CA-SBR-16786H (P-36-026520)

This resource was first recorded by Far Western in 2013 as a sparse can scatter dating to the 1950s–1960s era and lying adjacent to an access road for the L-300 pipeline. The 80+ cans were mostly food cans. During the 2018 revisit for the current project, Far Western expanded the site boundary to include metal gas and oil cans (Continental and Quaker State) to the southeast. Cylindrical all-metal oil cans typically date to the 1940s–1950s.

This mid-twentieth century can dump may represent casual household dumping from one of the nearby communities, or it may be associated with construction/maintenance of the pipeline. There is no evidence to link it definitively with any major historical trend or theme, however (Criterion A), nor with a known company, household, or individual (Criterion B). It does not contain any characteristics of engineering, design, or construction (Criterion C). While a more-complete recordation might provide information on the full range of cans present (e.g., numbers of multi- versus single-serving cans), the lack of a clear association would greatly limit the usefulness of that information for addressing important historical research questions (Criterion D). The site is therefore recommended ineligible under all criteria.

CA-SBR-16787H (P-36-026521)

These are concrete mounts/foundations and a diffuse scatter of cans located 0.5 mile north of the former community of Bagdad, recorded by Far Western in 2013. There were two small concentrations noted at the eastern end of the site. A previously recorded older alignment of the National Trails Highway (SBR-

2910) is located roughly 75 feet to the north. In February 2018, Far Western revisited the site and found the site boundary and description to be accurate. The feature remains unchanged and the two concentrations are as described. Artifacts noted in 2018 included two small concentrations of "soft-top" pull-tab cans (1960s–1970s), "church-key" opened cans (1935–1960s), and a few single-serving sanitary food cans. The concrete feature measures 20.5 x 10.5 feet, and there are rebar anchors embedded at all corners. The proximity of the concrete features to the old highway suggests that they are the remains of a structure related to travel (e.g., service station, café); however, neither the 1954 nor the 1986 Amboy Crater 7.5-minute quadrangle map shows any structures or other features along the road in this location. Additional research is required to identify the age, association, and potential significance of these features.

CA-SBR-17101H (P-36-027086)

This is the historic town of Bagdad, founded around 1883 along the historic AT&SF Railway. It was recorded by Tierra Environmental in 2001, at which time very little of the town remained. The depot, water tower, coal bins, restaurant, post office, general store, stables, residences, and government buildings that once made up the town are now gone (although the 2001 sketch map does show at least one concrete foundation). The All-American Pipeline was built through the town, leaving a 100-foot-wide swath of disturbance; the 2001 record notes that "the rest of the site may be in better condition."

Far Western revisited the site in 2018 for the current project, adding two features to the site record: a possible railroad spur/road, and a concentration of concrete, plywood, window screen fragments, key-wind fish tins, and brown bottles with 1940s-era maker's marks. The current project APE mostly misses the recorded site, overlapping slightly at the very northern edge only because of the site boundary revision to include the refuse dump and road segment. The locations of the cemetery and a few structures shown on the 1954 Amboy Crater and Bagdad southwest 7.5-minute quadrangles are well outside the APE.

While the townsite of Bagdad may be an eligible property, to our knowledge it remains unevaluated. The newly recorded features, however, are non-contributing elements of the townsite. They date to the mid-twentieth century, well after the establishment and peak of occupation of the town, and so are not associated with the town's potential significance under Criteria A or B. They include no distinctive or unique features that might be eligible under Criterion C, and the common, mass-produced items in the refuse deposit have little to add to our understanding of regional research issues (Criterion D).

CA-SBR-29795H (P-36-029795)

This site is a dispersed scatter of food and beverage cans and brown bottle glass fragments about 100 feet east of the BNSF railway corridor and along the edge of an access road for the Lugo-Mojave transmission line. In 2016, archaeologists recorded 19 cans, mostly "church-key" opened flat top beverage cans (1935–1960s) in an area measuring 60 x 49 meters. They noted that the debris dated largely to the late 1950s-early 1960s and recommended it ineligible for the National Register. Far Western revisited the site in 2018, finding the resource as documented. We have no reason to alter the existing recommendation of ineligible. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-29796H (P-36-029796)

Far Western recorded this refuse deposit in 2013, noting about 55 cans, 42 fragments of glass beverage bottles, and two scraps of milled lumber, located along a dirt access road and overhead transmission line 4.2 miles east of the intersection of Highway 40 and Hector Road in Pisgah. Far Western revisited the site in 2018 for the current project, updating the record and site map to include additional cans and another bottle fragment. The cans include 31 flat-top cans with "church-key" opening (1935–1960s), a five-gallon fuel can, a one-pound coffee can, two cardboard oil cans (post-1940s), two hole-in-top cans (1900–1930), and miscellaneous other debris. The refuse is temporally mixed and appears to represent more than one episode of dumping during the twentieth century. The 2013 record recommends the site ineligible; we concur with this recommendation. The site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

CA-SBR-29798H (P-36-029798)

In 2016, this historical resource was recorded as a dispersed scatter of cans, bottles, and miscellaneous other debris in an area 227 x 45 meters between Route 66 and the BNSF railroad corridor, roughly 0.8 miles northwest of the intersection of the highway and Pisgah Crater Road. That site record provides a detailed description of constituents, noting that the refuse is temporally mixed and includes items from the late nineteenth/early twentieth century to the 1980s or later. This temporally mixed scatter was recommended ineligible for listing.

Far Western revisited the site for the current project, recording several additional artifacts and redrawing the site boundary, but nothing altering the character of the site as recorded. Associated artifacts have little data potential beyond recordation and are insignificant regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Far Western thus concurs with the original recommendation, and echoes that the site should be considered ineligible for listing under all criteria.

CA-SBR-31747H (P-36-031747)

This site, situated between the BNSF railroad and Pisgah Road, was recorded in 2017 as an 87-x-51-meter historic-era refuse deposit consisting of 45 cans dating between 1904 and 1976, five bottles dating between 1923 and 1989, metal straps, medium gauge wire, metal straps, and a ceramic pipe. The site was recommended ineligible for listing under all four criteria.

This site was introduced to Far Western by the BLM after the survey for the current project was completed. That survey did not identify anything within that portion of the documented site boundary that overlaps the current APE, and Far Western did not re-visit other portions of the site. Far Western has no basis to dispute the 2017 recommendation that this site be considered ineligible for listing under all criteria based on the current project

P-36-020271 (No Trinomial Assigned)

The historic Lavic/Kenton Mill road was originally documented in 2014 by MCAGCC. The unimproved dirt road measured 17 feet wide and appeared to have been periodically bladed by the Marine Corps to improve the road surface. It starts in the north at the National Trails Highway and travels south for approximately 3.66 miles, crossing another historic road (P-36-026494) and the historic BNSF railroad (P-36-006693). Hale and McDonald (2004) notes that road has been continuously used and upgraded as an access route for recreational use of BLM lands and by the Marine Corps. He further notes that the route of the road has almost certainly migrated through repeated shortcutting and work-arounds resulting from natural erosion.

In February 2018, Far Western re-visited the site during a survey of the PG&E 300 pipeline right-of-way. During this revisit, the road was observed as previously described and follows the current documented alignment; however, the section visited was 15 feet wide with one-foot berms, indicating that the road had been recently bladed. A 150-foot section in the north intersects the PG&E 300 right-of-way and is part of a planned PG&E access road.

According to Hale and McDonald (2004), the road is depicted on a 1902 map produced by the California State Mining Bureau, and on a 1915 *Automobile Road Map of San Bernardino County* produced by the Automobile Club of Southern California (both at such a small scale, however, that the exact route cannot be determined). It also shows as an unimproved road on the 1955 USGS Lavic Lake 7.5-minute quadrangle, with the same alignment as the modern road. Hale does not venture an eligibility recommendation, although his emphasis on the road's continuous use and upgrading suggests that he considered it to lack historical integrity. As such, it would have played no significant role in the development of the local or regional transportation system (Criterion D). This segment not clearly associated with a significant event (Criterion A), is not obviously linked to a significant historical figure (Criterion B), and does not embody distinctive characteristics or components (Criterion C). Although the entire resource has not been formally evaluated, the small section that crosses the current project corridor has no artifacts or engineering features; it is considered a non-contributing element of the larger historic-era resource.

P-36-026456 (No Trinomial Assigned)

This road, designated BLM Road 6707, is 11 miles east of Ludlow, California. The recorded segment is 1.5 miles south of the intersection of Rd 6707 and the National Trails Highway. In 2013, Far Western recorded the road segment as a maintained, in-use bladed dirt road that linked State Route 66 with the L-300A access road, terminating at the pipeline. Far Western revisited the resource in 2018 for the current study and found no changes from the previous recordation. The road is bladed and maintained, with no berms.

The road is depicted on the 1955 Ash Hill and 1955 Ludlow southeast 7.5-minute USGS quadrangles, the earliest available USGS maps of a large enough scale to show this level of detail. No artifacts were noted along the recorded segment. Because the road terminates at the pipeline, it most likely was constructed specifically as a pipeline access route. As such, it would have played no significant role in the development of the local or regional transportation system (Criterion D). Nor does the road have unique or distinctive engineering or design characteristics (e.g., rock retaining walls, stone culverts). As a segment of a larger, unevaluated resource, this feature is recommended as a non-contributing element. This segment not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), and does not embody distinctive characteristics or components (Criterion C).

P-36-026459 (No Trinomial Assigned)

This resource is an unnamed dirt road depicted on the 1956 USGS Essex 15-minute topographic quadrangle, 14 miles southeast of the town of Essex and five miles west of Homer Wash. The site was recorded by Far Western in 2013 and revised in 2018 for the current project. There are two features here: a recently bladed, 17.5-foot-wide dirt road with 16-inch-high berms, 100 feet east of an active utility line (recorded as P-36-026460); and an abandoned two-track running along the project APE to the east of the larger road. Several off-shoots of the main road lead to the nearby utility towers. Fourteen non-diagnostic sanitary cans and one 12-ounce flat-top beverage can (ca. 1940s–1960s) were noted along the recorded segment, likely road-toss items. The 1956 USGS map depicts only one road but shows it as an "improved" road continuing for several miles; this suggests that it is the larger of the two routes observed in the field.

Because the road follows the utility line for several miles, it most likely was constructed specifically as a utility access route. As such, it would have played no significant role in the development of the local or regional transportation system (Criterion D). Nor does the road have unique or distinctive engineering or design characteristics (e.g., rock retaining walls, stone culverts; Criterion C). The site is not clearly associated with a significant event or person (Criteria A and B). As a segment of a larger, unevaluated resource, this feature is recommended as a non-contributing element.

P-36-026460 (No Trinomial Assigned)

Previously recorded by Higgins et al. (2013), this site is an active utility line depicted on the 1956 USGS Essex 15-minute topographic map. The line runs adjacent to a dirt road (recorded as P-36-026459, see above) about 100 feet to the east that is also depicted on the 1956 map. Higgins et al. (2013) state that the line does not appear to be eligible to the National Register.

Far Western revisited the site in February 2018 and found the resource intact and as previously described. No artifacts were noted during either visit. The towers along the line are of a high-voltage steel lattice design and probably have replaced the original mid-twentieth-century towers. While the line as a whole has not been formally unevaluated, we have no basis for altering Higgins et al.'s (2013) recommendation that the recorded segment is ineligible (i.e., non-contributing), due to the loss of integrity to the period of construction. Moreover, the site is not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and does not have the potential to yield significant data (Criterion D).

P-36-026468 (No Trinomial Assigned)

This historic-era dirt road was originally recorded by Far Western in 2013 during a survey of the L-300 A and B pipeline corridors (Higgins et al. 2013). It was recorded as a bladed road approximately 10–16 feet wide, with six to 12-inch berms, 3.2 miles south of the intersection of Bagdad Chase Road and Main Street, south of the town of Ludlow. The road is depicted on the 1955 USGS Ludlow 7.5-minute topographic quadrangle. The recorded segment runs northwest for 0.4 miles from Bagdad Chase Road. No artifacts or engineering features were observed.

On March 5, 2018, Far Western re-visited the site for the current project. The road appears to continue northeast for another 0.3 miles, for a total length of 0.7 miles; the new segment is 26 feet wide with six-inch-high berms and has a BLM sign reading #NS7824. The road runs between an unnamed northwest/southeast-trending dirt road just south of the pipeline and the Los Angeles-Amarillo Airway Beacon.

As a minor connecting route, this road likely played no significant role in the development of the regional transportation system (Criterion D). It contains no engineering features and exhibits no distinctive design or construction characteristics (Criterion C); instead it is an unremarkable example of a very common resource type. The site is also not clearly associated with a significant event or person (Criteria A and B). The lack of associated artifacts makes it impossible to date the feature beyond the "circa-1950" date provided by the USGS map. For these reasons, Far Western recommends the site ineligible for listing under all criteria.

P-36-026469 (No Trinomial Assigned)

This resource is a segment of unnamed dirt road that begins and the National Trails Highway and leads north for 0.6 mile to an unnamed mining site on Dish Hill, crossing over the AT&SF (now BNSF) railway and past the site of Trojan along the way. The southern section of the road is bladed and 10 feet wide; the northern section is a dirt two-track route 12 feet wide. No artifacts were observed along the road, although milled lumber, glass fragments, and cans were noted at the unnamed mining site. The road and the mining site are depicted on the 1954 USGS Bagdad southwest 7.5-minute topographic map. The only patent that appears in the on-line GLO database is for the entire Section 16 (where the unnamed mine is located) to the State of California in 1857.

Far Western revisited the site in 2018, noting a sparse scatter of sanitary cans and "church-key" opened cans near the mining site. No artifacts or features were observed along the road. This resource is an unremarkable example of a common feature type, with no engineering elements (e.g., retaining walls, stone culverts, bridges) and no directly associated artifacts. It is a minor connecting route that would have had no significant role in the development of the regional transportation system (Criterion C). The site is also not clearly associated with a significant event or person (Criteria A and B). While it did provide access to a mining site, that site is unnamed and is not recorded in historical Land Patent records, indicating that it did not develop into an important operation. The road also has no data potential beyond its recordation (Criterion D), and is recommended ineligible for listing under all criteria, accordingly.

P-36-026470 (No Trinomial Assigned)

This resource is a dirt road depicted on the 1954 USGS Amboy Crater 15-minute topographic map, at the intersection of Route 66 and B&B Avenue in Amboy. It was recorded by Far Western in 2013 as a 10-foot-wide, unimproved two-track road that had been partly destroyed by a series of washes. A revisit by Far Western in 2018 found the site to be as previously described, re-locating a colorless glass bottle neck and five fragments from a Bireley's soda bottle. No other artifacts were noted.

The road shown on the 1954 quadrangle map diverges from Route 66 at Amboy and runs north for about 1.5 miles, crosses, bending around a landing strip and continuing to cross over the L-300 pipelines. North of the pipelines the road forks, with the left (western) fork continuing for about two miles before it becomes a four-wheel-drive trail, and the right (eastern) fork continuing due north for about a mile to dead-end at an unnamed hill feature; there are no mines or other destination points shown on either the 1954 or the 1985 topographic map.

As a dead-end road of unknown date, this feature would not have played a significant role in the development of the larger regional or extra-regional transportation system (Criterion D); instead it appears to be a road used (and perhaps created) by recreational ATV users to access the washes north of Amboy. There are no engineering features (Criterion C), and the only artifacts observed were the colorless bottle fragments. The site is also not clearly associated with a significant event or person (Criteria A and B). This road is recommended ineligible for listing under all criteria.

P-36-026486 (No Trinomial Assigned)

This asphalt-paved road was originally recorded by Far Western in 2013 during a survey of the L-300 A and B pipeline corridors and revisited for the current project in 2018. The two-lane road starts at the National Trails Highway and runs north for 0.5 mile to the historic AT&SF Railroad (SBR-6693H), crossing both I-40 and the pipeline corridor. This segment is depicted as "Newberry Road" on the 1955 Newberry 15-minute topographic map. Current GIS information from the information center extends the road approximately 3.3 miles north to Valley Center Road, and 1.3 miles south to an unnamed dirt road loop, with a total length of 5.3 miles. The road is 25 feet wide at the top, with a base measuring approximately 40 feet wide (the original site record mistakenly records the road as 10 feet wide). No additional features, artifacts, or impacts were observed.

The road runs due north/south between the Mojave River on the north and two unnamed quarries to the south. From Route 66 north, it runs past the Newberry School and several scattered residences before ending on the south side of the river. The road is built along section lines, a common practice in rural areas. The section within the current project area is only a small segment of the much longer road. Additional research is necessary to assess the role this road may have played in the development of the area and determine its National Register eligibility.

P-36-026490 (No Trinomial Assigned)

This road segment is 0.2 mile east of the Oasis Rest Stop on Highway 40. It was recorded by Far Western in 2013 as a 1.2-mile segment of unnamed dirt road connecting Highway 40 with the L-300 pipeline corridor to the south and the 300B pipeline corridor to the north. It was recorded as a bladed and highly traveled road 12 to 18 feet wide; no artifacts or engineering features were observed.

In 2018, Far Western returned to the site for the current project, noting that conditions were as previously recorded and adding additional detail. Part of the road crosses a lava field, and residual lava rock from the road cut forms the road surface. This portion of the road varies from 12 to 25 feet in width and includes push-piles six inches to three feet in height. Just beyond the lava field, the road becomes an eight- to 10-foot-wide unmaintained dirt road with smaller push-piles. Some sections of the road have been washed out, and others are in very poor condition. The road crosses through several other sites, including P-36-024258 (historic), EG-X9 and EG-X10 (prehistoric), and P-36-001804-1 (prehistoric).

Four concentrations of historic-era debris were noted along the southern part of the route, near Highway 40 and multi-component site P-36-024258; the refuse may be associated with that extensive refuse scatter. The debris consists of pocket tobacco tins, "church-key" opened beverage cans, bottle glass, and sherds of domestic ceramic wares. At least one bottle base has an embossed "The Christian Brothers" on the base, indicating a wine bottle; two others have Latchford-Marble Glass Co. marks dating to the period 1939–1957. These items and the "church-key" beverage cans indicate that these refuse concentrations date to the same period as the refuse at adjacent site P-36-024258.

The 1955 USGS Newberry and Cady Mountains 15-minute topographic maps show this road continuing northeast to the corridor of the historic AT&SF Railroad and then paralleling the railroad eastward to the town of Hector, where it links to road P-36-014879 (Hector Road, described elsewhere in this report). Currently, however, the road turns at the railroad grade from a lightly-used two-track vehicle route to a barely discernable dirt track. Given that most of the route follows the railroad corridor, the road probably was originally meant to access the railroad for maintenance. Its role in the development of the regional transportation system would have been minor, at best (Criterion D). No engineering features were observed along the roadway (Criterion C), and the refuse dumps consist of mass-produced, common items dating to the mid-twentieth century. The site is also not clearly associated with a significant event or person (Criteria A and B). This feature is therefore recommended ineligible for listing under all criteria.

P-36-026491 (No Trinomial Assigned)

This road was originally recorded by Far Western in 2013 (Higgins et al. 2103). That record noted two segments of an unnamed dirt road depicted on the 1955 Cady Mountains 15-minute and Lavic lake 7.5-minute topographic maps. The 0.3-mile-long segments (0.6 miles total) were approximately six to 10 feet wide. A short section, or "spur" was noted at the end of the north-oriented segment, which retained a series of peripheral wooden lathes. The road was noted to be heavily overgrown with vegetation and showed evidence of erosion from heavy water flow.

Far Western revisited the road in 2018. The two previously recorded segments, northern spur, and wooden stakes were all re-located and documented in further detail. The segments are 14 feet wide each, berm-to-berm, with top elevations approximately six inches below the edge of the pipeline corridor. The northern spur appears to be a bladed section of road with cut-and-fill sections excavated into the adjacent hillside, evincing 1.5-foot-high push-piles further downslope. The wooden stakes are along both road edges, placed every 10 feet (not 50 feet as previously recorded). The stakes measure 2-1/2 x 1 inches and extend 1.5 feet above the ground surface. The previous site record notes that the roads terminate at the pipeline corridor; however, while the road segments are not discernible within the pipeline right-of-way, a two-track road appears further north of the north-oriented road. This two-track continues north for 500 feet and is defined by parallel cobble and gravel low berms. This new road extension is difficult to discern due to vegetation overgrowth and erosion activity. No artifacts were observed adjacent to the previously or newly recorded dirt road segments.

Minor transportation corridors in the Mojave Desert, most of which remain in use and maintained, are rarely considered to have significant data potential or to retain historical integrity. Such is the case with the current unnamed dirt road. The road is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), and does not embody distinctive characteristics or components (Criterion C). The road also has no data potential beyond its recordation (Criterion D), and is recommended ineligible for listing under all criteria, accordingly.

P-36-026492 (No Trinomial Assigned)

This linear resource is located approximately 8.2 miles northwest of the intersection of Highway 40 and Crucero Road in Ludlow. It is an unnamed dirt road depicted on the 1955 USGS Lavic Lake 7.5-minute quadrangle connecting the L-300 corridor and Highway 40. The road was recorded by Far Western in 2013 as two-track route, six to 10 feet wide, with no associated artifacts or engineering features. It was revisited in 2018 for the current project and found to be 17 feet wide, with berms six inches to one foot high. Many sections have been washed out, and in some places, it is discernable only as a wide, flat corridor through the brush.

This connecting road between Highway 40 and the pipeline corridor probably was constructed specifically to provide access to the pipeline during construction and/or maintenance. As such, it did not play a significant role in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The simple two-track road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). No artifacts or features were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for the National Register under all criteria.

P-36-026493 (No Trinomial Assigned)

This site is a dirt road that is depicted on the 1955 Lavic Lake 7.5-minute quadrangle connecting the railroad corridor at Argos to the L-300 pipeline corridor. It was recorded by Far Western in 2013 as a two-track, measuring six to 10 feet wide and one-quarter mile long, with no artifacts or engineering features observed. Far Western revisited the site in 2018, finding it as previously described.

This connecting road between the railroad and the pipeline corridor probably was constructed specifically to provide access to the pipeline during construction and/or maintenance. As such, it did not play a significant role in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The simple two-track road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). No artifacts or features were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for the National Register under all criteria.

P-36-026494 (No Trinomial Assigned; with Mary Maniery)

This road was originally recorded by Far Western in 2013 (Higgins et al. 2013). It was documented as a segment of unnamed, but maintained and bladed dirt road associated with miscellaneous refuse, including sanitary, beverage, oil, and kerosene cans. The documented segment was approximately 10 to 12 feet wide, originated at the L-300 B corridor and traveled west through the L-300 A corridor, paralleling the Atlanta and Pacific Railroad (SBR-6693H) for 0.25 miles. The road is depicted on the 1955 Lavic Lake 7.5-minute topographic map but is not visible on the 1953 USGS map of the area.

In February 2018, Far Western surveyed a proposed access road (Hatch 8633) that overlapped a previously undocumented 2-mile-long segment of this road extending southwest of I-40 toward Lavic Lake Road, of which roughly 1.3 miles parallels SBR-6693H to the north. The extended segment was found to be 15–16 feet wide, with 1–2-foot-wide berms along either edge. Portions of the road showed improvement, including asphalt, gravel, and sand laydown. The previously recorded roadside refuse was also found to continue along this new course, consisting of roughly 100 pull tab aluminum cans and church-key-opened beverage cans, along with extensive modern debris. Survey of the extended segment also revealed two new sites, a historical utility line and associated refuse (SR-X11) and an unremarkable small refuse deposit (KR-X1), as well as a few separate isolated resources, including two small SRLs (KR-R40 and -R44), a single CCS flake (KR-R42), and one each aqua and amethyst bottle drops (KR-R39 and -R48) The road segment continues to be used as an access road for both railroad and PG&E pipeline maintenance, although portions that extend west of Lavic Road do not appear to be widely utilized or maintained.

This road was constructed after 1950, a time of increased road network expansion throughout California and the desert. It is unclear if the road was associated with railroad maintenance or utility line work. Therefore, it does not appear to meet Criterion A. No construction records were found and the company or builder of the road is unknown, precluding its importance under Criterion B. The road is of common design with no features such as rock retaining walls, culverts, or cut/fill areas and does not meet Criterion C. Physical attributes of the road were captured during the recordation stage through measuring and photography; additional research value is limited (Criterion D). The integrity of the road has been altered through grading, partial paving, and the addition of gravels and sands. The road is recommended as ineligible for listing given its lack of importance and compromised integrity.

P-36-026495 (No Trinomial Assigned)

This is a segment of the East Mojave Heritage Trail (conceived in 1985 and incorporating existing roads) located just north of the Little Piute Mountains. It was recorded by Far Western in 2013 and revisited for the current project in 2018. The feature is depicted on the 1956 USGS Essex 15-minute quadrangle as an unimproved road continuing south for many miles from the recorded segment in Section 19, ending at "Weavers Well" and passing by several mining sites in the Old Woman Mountains along the way. To the north it converges with two other roads to become Highway 62. The part of the road south of the pipeline does not appear on the 1954 Needles 1:250,000 map, probably because the scale is too small to show minor roads. Given the length of this road, and the fact that it links several mining sites, further research is needed to fully assess its significance and determine its eligibility for listing.

P-36-026496 (No Trinomial Assigned)

This resource is a segment of two-track dirt road recorded by Far Western in 2013, revisited by Rincon Associates in 2016, and revisited by Far Western for the current project in 2018. It is 0.3-mile long and 10 feet wide, with a small berm along the western edge. It appears on the 1956 USGS Essex 15-minute quadrangle as an unimproved road running between the L-300 pipeline corridor and a paved road to the north that skirts the base of the Little Piute Mountains. There are no engineering features or artifacts along the route.

This connecting road between the pipeline corridor and a paved road probably was constructed specifically to provide access to the pipeline during construction and/or maintenance. As such, it did not play a significant role in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The simple two-track road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). No artifacts or features were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for the National Register under all criteria.

P-36-026499 (No Trinomial Assigned)

This is a segment of US 95 labeled "Parker Road" on the 1903 Needles 30-minute topographic map. It is also shown as US Route 95 on the 1950 Sawtooth Range 15-minute topographic map. The-recorded segment, originally documented by Higgins et al. (2013) is a paved two-lane highway with graveled shoulders. More than 50 associated historic-era beer cans were also observed during that recording, distributed within the surveyed section of the L-300 pipeline corridor as a continuous scatter of roadside trash. It was noted to be a major transportation route transecting the Mojave Desert, and was considered eligible for listing.

Far Western revisited the segment that intersected this corridor in March 2018 and did not find any deviation from this original recording regarding its character or condition. However, considering that this segment is not associated with features less than 50 years old or those that could otherwise elaborate upon significant aspects of highway engineering or linked historical events and individuals of significance (Criteria A and B), otherwise provide significant information about route evolution or embody distinctive characteristics or components (Criterion C), or contribute significantly to regional research themes (Criterion D) it is recommended that this segment be considered ineligible for listing under all criteria. The overall significance of the route was not assessed for the current project.

P-36-026518 (No Trinomial Assigned)

This well-traveled dirt and gravel road runs north from the National Trails Highway near Lavic and ends at the base of the Sleeping Beauty Mountains, crossing the L-300 corridor along the way. It is shown on the 1955 Lavic Lake 7.5-minute quadrangle map. The segment recorded for the current project is in generally good condition and appears to be bladed periodically. The road width varies from 20 to 24 feet wide and one to three feet deep. No features or artifacts were observed along the roadway.

This is a local road that terminates in the nearby landscape. As such, it would not have played a significant role in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). No artifacts or features were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for the National Register under all criteria.

P-36-026519 (No Trinomial Assigned)

This resource is an east/west-running dirt road that is depicted on the 1955 Lavic Lake 7.5-minute quadrangle map. It begins at the historic Lavic/Kenton Mill road (P-36-020271, described elsewhere in this report) and runs eastward for 5.7 miles to connect to another unnamed road near the town of Ludlow. A section of this undeveloped two-track road has been destroyed by the National Trails Highway and Highway 40. No engineering features were observed, and only four artifacts: a "church-key" opened beer can (1935–1960s), a motor oil can, and a kerosene can. These were noted during the original recordation in 2013 by Far Western.

This is a local, minor connecting road that would have played no important part in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). Only a few scattered "road toss" artifacts were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for the National Register under all criteria.

P-36-026532 (No Trinomial Assigned)

This resource is a segment of unnamed and unimproved road nine miles west of I-95 near the California/Arizona border. The road is depicted on the 1956 USGS Stepladder Mountains 15-minute quadrangle, connecting the L-300 pipelines to Turtle Mountain Road, about 11 miles to the south. On the 1956 map, the road intersects with another unimproved road running along the northern edge of the pipeline; that road is not called out on the modern (1985) quadrangle.

The resource was recorded by Far Western in 2013 as "an unimproved road that travels from the gas pipelines to a network of roads that lead to various mining areas." In 2018 Far Western revisited the site for the current project, noting that the road measures 10 feet wide with no berms and appears to be in use and maintained. No features were noted along the recorded segment and only one artifact: a "large, unidentified metal fragment" noted in 2013 but not re-located in 2018.

This road appears to have been constructed specifically to provide access to the pipelines from the south. As such, it would not have played any significant part in the development of the larger regional transportation system or settlement (Criterion A), nor can it be linked to any known group or individuals of historical significance (Criterion B). The segment within the project APE contains no engineering, design, or construction features (Criterion C), and there is no data potential inherent in the road or the few scattered cans (Criterion D). While the much longer road remains unevaluated, that portion in the APE is recommended as a non-contributing element of the larger resource.

P-36-026541 (No Trinomial Assigned)

This linear resource is a segment of BLM Road 317, first recorded by Far Western in 2013. It intersects the National Trails Highway about six miles east of Chambless. The dirt road has been bladed at some point but is still in use. Two non-diagnostic sanitary cans were the only artifacts noted along the recorded segment. Far Western returned to the resource in 2018, finding no change since the earlier recordation. The recorded segment is 0.5-mile-long, nine to 12 feet wide, and six inches deep.

The road appears on the 1956 USGS Danby 15-minute quadrangle map, heading south from Route 66 to connect to the historic AT&SF railway at Siam. No structures or other features are indicated on the map. As a local, minor connecting route, this road would have played no important part in the development of the larger regional transportation system (Criterion A), and there is no evidence to link it to an important individual or entity (Criterion B). The road has no distinctive or unique characteristics of engineering, design, or construction (Criterion C). Only two "road toss" sanitary cans were observed along the roadway, and it has little to contribute to our understanding of local, regional, or extra-regional history (Criterion D). The road is recommended ineligible for listing under all criteria.

P-36-026542 (No Trinomial Assigned)

This linear feature is a segment of BLM Road NS 001, one-half mile east of Bagdad. It was recorded by Far Western in 2013 and revisited in 2018 for the current project. The bladed dirt road appears to be actively maintained and used. It is 22 feet wide and has 18-inch berms, with no associated features. The road is depicted on the 1954 USGS Amboy Crater 7.5-minute quadrangle, connecting the L-300 pipelines to Route 66. The only artifact, noted in 2013, was a mid- to late twentieth-century sanitary can.

It is likely that this road serves solely to provide access to the pipelines. As such, it would have had no significant role in the development of a larger regional or extra-regional transportation system (Criterion A). It cannot be linked to any known group or individual of historical importance (Criterion B). The road does not contain engineering, design, or construction features (Criterion C), and it lacks data potential for addressing regional research questions (Criterion D). The road is recommended ineligible under all criteria.

P-36-026543 (No Trinomial Assigned)

First recorded in 2013 by Far Western, this dirt road includes part of the older alignment of Kelbaker Road five miles east of Amboy. It was revisited in 2018 for the current project, at which time Far Western re-located 20 cans of various types noted on the 2013 record: "soft-top" ring-pull beer cans (1960s–1970s), flat-top, "church-key" opened cans (1935–1960s), six single-serving sanitary food cans, and a rectangular screw-top can. Fragments of aqua glass were also noted in 2018. The road retains fragments of asphalt paving but is heavily degraded.

The road is depicted as an unnamed road on the 1956 Cadiz 15-minute topographic map that runs north from Route 66 near Amboy and links to a network of unimproved roads near Granite Pass. Minor transportation corridors in the Mojave Desert, most of which remain in use and are maintained, are rarely considered to have significant data potential or to retain historical integrity. Such is the case with this route, which is not clearly associated with a significant event and makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B) and does not embody distinctive characteristics or components of engineering, technology, design, or construction (Criterion C). It also lacks data potential (Criterion D) and has compromised integrity due to heavy erosion. The road segment is therefore recommended ineligible under all criteria.

P-36-027530 (No Trinomial Assigned)

This resource was recorded in 2015 by First Carbon Solutions as part of the historic Ludlow & Southern Railroad. However, both the 1955 Ludlow 7.5-minute quadrangle and the very small-scale map included in the 2015 record indicate that Crucero Road/Bagdad Chase Road is the old railroad alignment. The 1955 map shows nothing at all in the location of this recorded feature. It appears, instead, to be one of the water-control/dike features constructed along these low-lying desert highways. Additional research is necessary to determine the date of the feature and assess its significance.

P-36-027752 (No Trinomial Assigned)

The Eldorado-Lugo 500 kV transmission line was originally documented in 2013, and subsequently updated in 2016. The line runs 177 miles between Southern California Edison substations in Boulder City, Nevada and Hesperia, California, and incorporates nine "cinched-waist" (i.e., possessing a wide base, narrow mid-point, and extended horizontal cross areas) tower types among 768 total towers erected between 1968 and 1969. The original record recommended the line be considered ineligible for listing based on survey evaluation, but the 2016 record update suggested the line be considered eligible under Criterion A, given that it retains integrity of location, design, setting, materials, workmanship, and feeling.

Far Western revisited a small segment of the line that crosses the L-300 pipeline corridor in February 2018 and did not find any alterations or impacts to the character or condition of the line or intersecting towers. Far Western has no basis to alter the updated recommendation of eligible for listing under Criterion A. As with other regional transmission lines, this resource is not associated with significant persons and does not have the potential to yield significant information, and are recommended ineligible under Criteria B and D. Further research would be necessary to evaluate the site under Criterion C.

P-36-027757 (No Trinomial Assigned)

This linear resource is a high-voltage transmission line on Highway 40 about eight miles northwest of Argos. It was recorded by Pacific Legacy in 2015 as the Lugo-Mojave line spanning 175 miles between the Southern California Edison (SCE) Lugo Substation in Hesperia, California and the SCE Mojave Substation in Laughlin, Nevada. The 2015 site record indicates that the line is a contributing element of the

Eldorado 500 kV Transmission Line system, which Pacific Legacy recommended as eligible for the National and California Registers under Criterion A. Urbana Preservation and Planning reiterated this recommendation in 2016. Far Western revisited the site in 2018 and found it to be as previously described. We have no basis for altering the existing recommendation of eligibility under Criterion A. As with other regional transmission lines, this transmission line is not associated with significant persons and does not have the potential to yield significant information, and are recommended ineligible under Criteria B and D. Further research would be necessary to evaluate the site under Criterion C.

NEWLY IDENTIFIED SITES

A total of 99 newly found sites, including 19 prehistoric resources, four multicomponent, and 76 dating to the historic era were documented and assessed for eligibility during the current project. Newly recorded historic-era sites include the Essex townsite, a foundation, four mining sites, two railroad grades, 51 refuse deposits (of which seven are associated with other historical features or prehistoric isolated artifacts), seven road segments, eight rock feature sites (mining or recreation related), a telegraph line, and a late nineteenth-century Chinese worker's camp. These variably date between the late nineteenth and mid- to late twentieth century. The historical components among multicomponent sites include foundations associated with refuse, two other refuse deposits, and a road segment.

Prehistoric sites include a complex occupation with charcoal visibly surrounding surface ground stone, eight campsites (of which two also contain FAR), five lithic reduction stations, and five pavement quarries or single SRLs surrounded by diffuse debitage scatters. Among multicomponent sites, prehistoric components include two campsites, a pavement quarry, and a lithic reduction station. Temporally diagnostic prehistoric artifacts were not found with any of these prehistoric components, although the complex occupation and two campsites with FAR have the potential to yield direct dates. These 99 new sites are described below.

AU-X1

This likely historic-era or modern rock cairn is east of Skeleton Pass Road. The cairn measures 2 x 1.3 feet, is nine inches tall, and includes nine cobbles 4–6 inches in maximum dimensions. Associated artifacts were not observed. Isolated historical/modern cairns are regionally prolific, and can reflect any number of purposes, including mining claims, roadside markers, shooting targets, etc.

Cairns such as these that lack diagnostic artifacts and/or claim papers offer little to no information tying them to significant persons or events (Criteria A and B), do not exhibit unique or significant artistic or engineering qualities (Criterion C), and are uninformative regarding regional research themes (Criterion D). Accordingly, this site is recommended ineligible for listing under all criteria.

AU-X2

This historical refuse deposit is just east of Skeleton Pass Road, south of its intersection with the L-300 pipeline corridor. Cultural constituents include 12 variably cut sections of 2-x-4-inch and 4-x-6-inch milled lumber boards (likely a deconstructed pallet), two metal buckets, sections of heavy gauge (ca. 3-inch) cable, two 2-foot-10-inch-diameter 1- and 4-inch sections of torch-cut 1-inch-thick steel pipe, sections of rebar, and an oil can that probably dates to the mid-twentieth century. Temporally diagnostic artifacts were not found, and historical features are not shown in this location on available historical topographic maps or GLOs.

This resource is probably a small dump associated with the construction of the pipeline. There are no features in association, and it lacks integrity, association, and data potential. The site is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), nor does it embody distinctive characteristics or components (Criterion C). This site is also uninformative regarding regional research themes (Criterion D). The site is therefore recommended ineligible for listing under all criteria, accordingly.

AU-X3

This historical refuse deposit includes cans, bottles, tile, and other miscellaneous debris, located east of site SBR-15440/H. Three isolated CCS flakes were also observed within the site. Historic-era refuse is concentrated in four small dumping areas, including a refuse/burn pile with small cobbles and pebbles; a dump with about 50 unmarked bottle caps (crown-type), white hexagonal bath tile, metal springs, and wire mesh; another dump with approximately 75 cans and bits of glass; and a dump with 10 cans and more than 250 fragments of glass. Identifiable items included the badly decomposed external-friction lid to a large can embossed with "[BLA]CK BLASTING POWD[ER]/EXPLOSIVES/DANGEROUS5 LBS./[illegible]/[illegible]," a bottle base embossed with "EASTSIDE" inside a shield (unknown maker), and fragments of a "7-Up" bottle.

This assemblage is a temporally mixed collection of common, mass-produced items with no known associations and little data potential beyond recordation. The site is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), nor does it embody distinctive characteristics or components (Criterion C). This site is also uninformative regarding regional research themes (Criterion D). The site is therefore recommended ineligible for listing under all criteria, accordingly.

EG-X7

This prehistoric campsite with associated FAR feature is north of I-40 and the L-300 pipeline corridor. Cultural constituents include three CCS bifaces, consisting of rough and fine pressure forms, more than 40 CCS and FGV core and biface reduction flakes, and a 1.2-x-0.9-meter concentration of approximately 50 burned FGV cobbles, interpreted to be a deflated hearth feature.

While not possessing temporally diagnostic artifacts, ground stone, or a particularly diverse artifact assemblage, observable surface materials are associated with a fire feature that may preserve dateable organics or those that may otherwise provide significant data regarding prehistoric hunter-gatherer diet. Furthermore, the site is in an area modeled to have moderate potential to preserved buried archaeological deposits. Further investigations, including limited artifact collection, test excavation, and radiocarbon dating (if possible), are necessary to assess the eligibility potential of this resource.

EG-X8

This site is a prehistoric camp north of I-40 and the L-300 pipeline corridor. Cultural constituents include one each CCS and FGV flakes alongside a 5.7-x-3.1-x-1.5-centimeter rough percussion CCS biface. While not possessing temporally diagnostic artifacts, ground stone, or a diverse artifact assemblage, the site is modeled to encompass an area modeled to have high potential to preserve buried archaeological deposits. Further investigations, including limited artifact collection and test excavation are necessary to assess the eligibility potential of this resource.

EG-X9

This prehistoric campsite incorporating sparse historical trash is north of a terminal extent of the Pisgah Crater lava flow and southeast of a small catchment. Prehistoric cultural constituents include thousands of CCS biface reduction and thinning flakes, four bifaces (consisting of two fine pressure pieces, a fine percussion specimen, and a rough percussion form), and a formed flake tool, most of which was found within one of two concentrations (Concentration 1 and 2) atop lava scree. The historic-era component consists of 17 crushed single- and multi-serve sanitary cans, six crushed church-key-opened beverage cans (ca. 1935–1960s), two Pepsi bottles, three glass jars and jugs, and miscellaneous small gauge wire and milled lumber, all in Concentration 2. Throughout the rest of the site are more than 150 shards of clear and aqua bottle and window glass. A historic-era road (ca. 1955; P-36-26490) bisects the western portion of the site between the two concentrations. The eastern portion of the site has also been impacted by three bull-dozer excavations.

While not possessing temporally diagnostic artifacts, ground stone, or a particularly diverse artifact assemblage, and although the site encompasses an area modeled to have low potential to preserve buried archaeological deposits, further research, including limited test excavations and artifact collections, are necessary to assess the eligibility of this resource. Despite the modeled low potential, the bull-dozer spoils piles incorporate flakes, speaking to the potential for the presence of at least near-surface buried deposits in the eastern portion of the site.

The historical component is a temporally mixed collection of common, mass-produced items with no known associations and little data potential beyond recordation. This component is not clearly associated with a significant event, makes no contribution to the broad patterns of regional history (Criterion A), is not obviously linked to a significant historical figure (Criterion B), nor does it embody distinctive characteristics or components (Criterion C). This site is also uninformative regarding regional research themes (Criterion D). The historical component is therefore recommended ineligible for listing under all criteria, accordingly.

EG-X10

This prehistoric site consists of a variably dense CCS debitage scatter (ca. 200 biface reduction and thinning flakes) and a rough pressure biface fragment. The flake density ranges from one to four flakes per square meter. The site is located along an access road connecting the National Trails Highway and the L-300 pipeline corridor, which appears sporadically bladed and continues to be in use and which has resulted in the re-deposition of debitage within and adjacent to the road.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Given this, and considering the lack of temporally diagnostic artifacts, the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EG-X11

This site is a sparse debitage scatter (n=12 red CCS biface reduction flakes) and a fine pressure biface fragment. The site is situated on a small catchment near the Pisgah lava flow along the southern edge of the L-300 pipeline right-of-way. Vehicle activity is not evident within the site boundary, but the site has been minimally impacted by natural erosion and deflation.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EG-X12

This prehistoric pavement quarry consists of two SRLs surrounded by a sparse debitage scatter (n=30 flakes). The site is situated along the northern edge of the L-300 pipeline right-or-way, next to a low rise, and within a deflated, poorly developed desert pavement. The SRLs cover between 0.2 and 2 square meters apiece and contain three FGV and 50 CCS core reduction flakes each, respectively. The right-of-way intersects the southern portion of the site and represents a continual impact to the site.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. As such, given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EG-X13 (with Mary Maniery)

This site is at the base of the Old Dad Mountains, 4.1 miles northeast of the intersection at the National Trails Highway/Historic Route 66 and Bagdad Way, in Bagdad, California. The site is situated within the PG&E 300 pipeline right-of-way, north of the BNSF Railroad and east of a historic-era road recorded as P-36-026469. Even though the site is surrounded by PG&E access roads, there is no evidence of site impacts. Historic-era mining is known to have occurred both north of the site in the Old Dad Mountains and to the south in the Bullion Range.

The site consists of a red lava rock pavement with minimal vegetation. There are seven ore exploration sorting pile features and a sparse scatter of historic-era refuse. The features include piles of discarded and concentrated rock averaging around 4 x 4 feet in size. No artifacts were observed at any of the features. Three artifacts were, however, recorded on the surface of the site: one sanitary can (post-1950) and two amber beer bottles with base marks from the Latchford-Marble Glass Company that date the bottles to the period 1939–1957.

No documentary evidence was found for the site, which has no known association with a particular claimant or operation (Criteria A and B). While the discarded rock suggests mineral extraction, most of the mining that occurred in this area took place in the surrounding mountains, and so this small and relatively late operation would not have played a significant role in the development of mining in the region. The rock piles do not exhibit unique or distinctive characteristics of engineering, design, or construction; rather, they are unremarkable examples of a common activity (Criterion C). The only artifacts found at the site indicate a date in the 1950s, but they have no data useful for addressing important regional research issues (Criterion D). Given the lack of importance in local history, engineering or architecture, and limited data potential, the site is recommended ineligible for listing under all criteria.

EG-X14

This resource is a section of possible railroad running roughly parallel to the historic AT&SF (now BNSF) railway near the site of Trojan. It is not depicted on the 1954 Bagdad southwest 7.5-minute quadrangle map or on the available GLO plat maps. The grade has been largely covered over and a concrete retaining wall built along one site; however, a wooden trestle/double culvert is exposed at one point. Two artifact concentrations are located adjacent to the grade: a dump containing at least 50 railroad spikes and bits of lava rock, possibly ballast, and a small dump with five knife-opened milk cans, two sanitary cans, and a brown cylindrical bottle with a maker's mark from the Obear Nestor Glass Company, probably dating to 1941 or 1947. A metal tie plate was also noted. The presence of a wooden bridge/culvert suggests that other engineering or construction features may lie buried along this grade and may be preserved due to the protective covering. The USGS quadrangle shows a series of dikes in the vicinity, and it is possible that the grade was buried as part of that water control system. Further research is necessary to determine the age and function of this grade, and to fully assess its eligibility for listing.

EG-X15

This probable historical mining claim cairn is on the west facing slope of a prominent ridge. The site is located within the L-300 pipeline right-of-way, northeast of an associated access road. The cairn measures 3 x 2.2 x 3 feet and is composed of approximately 15 granitic cobbles. It appears intact, and associated artifacts were not found. The proximate area is subject to very little vehicle activity due to the steep terrain.

Mining claim cairns such as these that lack diagnostic artifacts and/or claim papers offer little to no information tying them to significant persons or events (Criteria A and B), do not exhibit unique or significant artistic or engineering qualities (Criterion C), and are uninformative regarding regional research themes (Criterion D). Accordingly, this site is recommended ineligible for listing under all criteria.

EG-X16

This historical site consists of a railroad grade, associated wood-timber retaining wall, four 6-x-6-inch notched wood posts remnant of a 495-foot span of now downed fence (ca. 30 feet north or the retaining wall), the concrete base of a control or light switch, and sparse refuse, located just north of the historic AT&SF (now BNSF) railroad near the site of Trojan. The railroad grade is approximately 3,270 feet long, 13–46 feet wide, and 7.5 feet above ground surface.

As with site EG-X14, much of the grade has been intentionally buried, possibly as part of the dike system shown on the USGS quadrangle (1954 Bagdad southwest 7.5-minute). The four-foot-high wooden retaining wall parallels the grade to the north, and the small refuse deposit observed in the north-central site area, situated between an extant road and the railroad grade, contains 25 non-diagnostic bottle bases, about 15 railroad spikes, and a ceramic plate fragment bearing a Bauscher trademark dating to 1915. Further historical research is required to evaluate the eligibility potential of this resource.

EG-X17

This multi-component site is situated along the southern edge of the L-300 pipeline right-of-way. The historic-era component consists of an unimproved dirt road that follows a prominent wash, and an associated amethyst bottle base. A pipeline is shown in this approximate location on the 1956 Bagdad southwest 7.5-minute USGS quadrangle, but no road is depicted here. The prehistoric component consists of a sparse concentration of five FGV core reduction flakes that, along within the bottle base, are at the western extent of the documented road segment.

The site is not clearly associated with a significant prehistoric or historical event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). The prehistoric component lacks temporally diagnostic prehistoric artifacts, has a low diversity assemblage, and encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D). As such, Far Western recommends that the prehistoric component of this site be considered ineligible for listing under all criteria.

Similarly, minor transportation corridors in the Mojave Desert, most of which remain in use and/or are maintained, are rarely considered to have significant data potential or to retain integrity (e.g., Fryman 2012). This local unimproved road is not linked to historical events or individuals of significance (Criteria A and B), nor could it or its associated bottle provide significant information (Criterion D). The historical component also does not embody distinctive characteristics or components. Therefore, the historical component is also recommended ineligible for listing under all criteria.

EG-X18

This historical refuse deposit and associated abandoned segment of road, possibly SBR-15114H (Danby-Parker Road), is northwest of the Danby townsite (SBR-3278H). An isolated prehistoric Colorado Buffware vessel body fragment was also observed within the site area. Most refuse is within one of two concentrations at either end of the site that range between 491 (Concentration 1) and 3,214 (Concentration 2) square feet in dimension.

Concentration 1 encompasses numerous crushed sanitary cans, variously-hued glass, and brick fragments estimated to have been deposited between the 1910s and 1960s, as well as the aforementioned ceramic sherd. Concentration 2 incorporates a similar range of historical debris as found in Concentration 1, alongside earthenware pieces and miscellaneous metal fragments; it appears to have been deposited within the same time frame as Concentration 1. The documented road segment (1,040 feet) runs parallel to the contemporary paved (but not well-maintained) course of Danby Road. The discontinuous segment of asphalted road is 30 feet wide and possesses 36-x-10-inch berms on either side.

Fryman (2012:93) documented a 13-mile segment of the unpaved but utilized and maintained Danby-Parker Road south of Skeleton Pass, extending from Danby (SBR-3278H) to Ehrenberg (see back to *Previously Recorded Sites and Updates*, page 71). Fryman (2012) notes that Danby-Parker Road was a major north-south connecting route prior to the construction of the Santa Fe Parker Branch Railroad and Cadiz-Rice Road (SBR-11583H) and was primarily utilized after 1893 to service transport of salt from Danby Dry Lake by the Crystal Salt Company. Fryman (2012) further described the documented segment of the Danby-Parker Road as possessing minimal potential to yield archaeological data, but that it may be important as a historical or engineering source.

The historical refuse concentrations found during the current project are probable roadside trash drops, do not convey association with significant events or persons (Criteria A and B), nor do they embody distinctive characteristics or components (Criterion C), and do not contribute significant information regarding regional research themes (Criterion D); as such, they are not considered contributing elements to the potential significance and eligibility of the Danby-Parker Road. The incorporation of a prehistoric vessel sherd with historical trash is curious but does not otherwise enhance the significance of these deposits.

If, however, the abandoned asphalted road segment is a portion of the old Danby-Parker Road, it may significantly speak to aspects of route evolution and engineering developments (Criterion C), particularly given that another segment of this road documented during the current project is limited to a two-track paralleling the modern course of Skeleton Pass Road. Further research is necessary to assess the eligibility potential of the abandoned road segment.

EG-X19

This probable historic-era rock feature complex is situated along the western edge of Skeleton Pass Road (P-36-023926) south of Danby. It consists of a 50-x-50-foot rectangular, single-course alignment of softball- and basketball-sized cobbles, with a smaller rectangular rock pad (20 x 10 feet) in the western part of the larger one. No historic-era debris was observed on the surface, but sand has partially covered the rock features and may also have covered any associated artifacts. The feature is not depicted on the 1956 USGS Danby 15-minute topographic quadrangle.

This site may represent a single- or multi-use recreational campsite for several small groups of people, but further research is necessary to assess this, its age, and the overall historical significance and eligibility of this resource.

EG-X20

This multi-concentration historic-era refuse deposit is situated along the southeastern edge of a dirt road that roughly parallels the BNSF railroad. Observed historic refuse includes beer (flat-top steel and cone-top forms) and sanitary food and milk cans (n=140 total), at least one bottle base fragment, and burned railroad spikes (n=10) in eight concentrations measuring between 2.4 and 38.5 square feet. Rock features include an 8-x-5-foot cluster of 35 cobbles (probable deflated hearth); a 22-x-2-foot "F-shaped" single course alignment of 60 cobbles (possible tent surrounds); and an 8-x-3-foot east-west oriented, single course of 15 cobbles intersecting a diminutive wash (possible dam). No artifacts were observed in associated with these features or found outside of the debris concentrations, other than a single lathe found with the largest rock alignment.

Available data suggest this site served as a single- or multi-use recreational campsite for several small groups of people between the mid-1950s and early 1960s. Site constituents do not convey association with significant events or persons (Criteria A and B), and do not embody distinctive characteristics or components (Criterion C). While adding another data point to the vast landscape of mid-twentieth-century recreational use of the Mojave Desert, associated trash and features retain little to no informative value pertaining to regional research themes (Criterion D). The site is recommended ineligible for listing under all criteria, accordingly.

EG-X21

This historic-era refuse deposit is situated east of the BNSF railroad. It consists of two concentrations of historic-era debris, each containing 10 crushed milk, food, and beverage cans (ca. 1910–1980s) and surrounded by a diffuse scatter of other refuse, including 25 whole and crushed sanitary cans, a bottle base (Hazel-Atlas, ca. 1920–1964), and three whiteware fragments.

This site probably reflects one or more mid-twentieth-century roadside trash drops or is associated with a single instance of recreational camping. Site constituents do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). While adding one more data point to the vast landscape of mid-twentieth-century recreational use of the Mojave Desert, associated trash retains absolutely no informative value pertaining to regional research themes (Criterion D). The site is recommended ineligible for listing under all criteria, accordingly.

EG-X22

This historic-era refuse deposit is situated east the BNSF railroad and adjacent to a dirt road. It consists of one discrete (8-x-6-foot) deposit of clear and brown glass bottle fragments (n=100), "church-key"-opened beer cans (n=10) and pull-tab beer cans, single-serve sanitary cans (n=5), and milk cans (n=2).

Available data suggests this site represents a single roadside trash drop dating to the early-to-mid 1960s. Mid-twentieth-century roadside trash deposits of this nature are regionally prolific and retain absolutely no significant information pertaining to regional research themes (Criterion D). Site constituents do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). The site is recommended ineligible for listing under all criteria, accordingly.

EG-X23

This historic-era refuse deposit is situated east the BNSF railroad and adjacent to a dirt access road. It consists of two discrete, 20-square-foot concentrations of sanitary and food cans (n=32), "church-key"-opened beverage cans (n=6), and variously hued beverage and condiment bottle fragments (n=74). Two bottle bases with Owens-Illinois trademarks dating to 1948 and a cone-top beer can (1935–1950s) were individually piece-plotted outside of these concentrations, and another bottle base with Owens-Illinois mark (dating to 1946 or 1956) was also observed.

This site probably reflects one or more mid-twentieth-century roadside trash drops or is associated with a single instance of recreational camping. Site constituents do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). While adding one more data point to the vast landscape of mid-twentieth-century recreational use of the Mojave Desert, associated trash retains absolutely no informative value pertaining to regional research themes (Criterion D). The site is recommended ineligible for listing under all criteria, accordingly.

EG-X24

This historic-era refuse deposit is adjacent to a dirt access road paralleling the western side of the BNSF railroad. Historic-era debris consists of four rectangular (9-x-7-inch) cut wood post remnants, various wood scraps, a small concrete slab (not *in situ*), 14 cans (10 milk, three meat, and one oil), 20 whiteware fragments, one aqua bottle, miscellaneous metal, and an aqua bottle neck with a relatively early "crown" finish. Some of the observed milk cans were vent-hole types manufactured between 1915 and the 1930s.

This site probably reflects one or more early twentieth-century roadside trash drops. Refuse deposits of this nature are regionally prolific and retain absolutely no significant information pertaining to regional research themes (Criterion D). Site constituents also do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). The site is recommended ineligible for listing under all criteria, accordingly.

EG-X25

This refuse deposit is adjacent to a dirt access road paralleling the western side of the BNSF railroad. Constituents include 30 cans (12 milk, three multi-serve sanitary, and 15 single-serve sanitary) and 50 glass shards (clear pane, clear bottle, white ["milk"], and brown). The cans date from the 1910s–1980s and two bottles with Owens-Illinois maker's marks (one with "Duraglas") date to either 1943 or 1953.

This site probably reflects one or more mid-twentieth-century roadside trash drops. Mid-twentieth-century roadside trash deposits of this nature are regionally prolific and retain absolutely no significant information pertaining to regional research themes (Criterion D). Site constituents also do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). The site is recommended ineligible for listing, accordingly.

EG-X26

This resource is another refuse deposit adjacent to a dirt access road paralleling the BNSF railroad. Debris consists of approximately 30 cans (25+ pull-tab and three "church-key"-opened beverage) and five glass vessels, represented by upwards of 75 green, clear, and brown shards. The milk cans were manufactured between 1931 and 1948; the pull-tab cans date to the 1960s or later.

This site reflects multiple mid-twentieth-century roadside trash drops, a ubiquitous phenomenon along rural roads throughout the region (and beyond). Such deposits provide no significant information pertaining to regional research themes (Criterion D). Site constituents also do not convey association with significant events or persons (Criteria A and B) and do not embody distinctive characteristics or components (Criterion C). The site is recommended ineligible for listing, accordingly.

EG-X27

This likely historic-era or modern rock cairn is next to a bladed dirt road. It is composed of roughly 20 local cobbles and measures 3.5 x 3 feet and one foot tall. No associated artifacts were observed. Isolated historical/modern cairns are regionally prolific and can reflect any number of purposes, including mining claims, roadside markers, shooting targets, etc.

Cairns such as these that lack diagnostic artifacts and/or claim papers offer little to no information tying them to significant persons or events (Criteria A and B), do not exhibit unique or significant artistic or engineering qualities (Criterion C), and are uninformative regarding regional research themes (Criterion D). Accordingly, this site is recommended ineligible for listing under all criteria.

EG-X28

This historical mining claim cairn is adjacent to the L-300 pipeline route. It is composed of approximately 50 local cobbles stacked in a pile measuring 5 x 4 feet and 1.5 feet high, with the decomposing remnants of a wooden post. Cairns such as these that lack diagnostic artifacts and/or claim papers offer little to no information tying them to significant persons or events (Criteria A and B), do not exhibit unique or significant artistic or engineering qualities (Criterion C), and are uninformative regarding regional research themes (Criterion D). Accordingly, this site is recommended ineligible for listing under all criteria.

EG-X29

This historical mining claim cairn is associated with two mechanically excavated prospect pits and adjacent push piles near the base of the Marble Mountains. The claim marker measures 4 x 4.5 feet and incorporates 30 local cobbles and milled lumber pieces. The prospects appear to have been excavated with a bulldozer and probably reflect mining activities conducted in the 1960s. A bottle base with an Anchor Hocking mark dating to 1961 provides a likely date for the features.

The technology employed in this mining venture is not outstanding or rare; prospect pits are found throughout the region, and they show no distinctive or unique characteristics of engineering, design, or construction. The features do not exhibit unique or significant artistic or engineering qualities and have no potential to significantly enhance our understanding of regional research issues beyond their recordation (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). Far Western therefore recommends that the site is ineligible for listing under all criteria.

EG-X30

This historical resource is an open mine shaft with associated waste rock piles, situated north of the National Trails Highway at the base of the Marble Mountains. The shaft collar is reinforced with variously sized pieces of milled lumber (2 x 12 and 4 x 4 inches) and railroad ties. The base of the construction measures 4.6 feet x 1 foot and is built of two 6-x-6-inch milled beams and galvanized metal. A wooden ladder extends into the shaft, which is estimated to be 100 feet deep. The open shaft is surrounded by a scatter of sanitary cans and "church-key"-opened beverage cans (mid-twentieth-century), which likely post-date the construction of the mine. Further research is required to assess the eligibility potential of this resource.

EG-X31

This historical refuse deposit is adjacent to an access road on the west side of the BNSF railroad route. Historical refuse consists of 15 Type 3 hole-in-cap sanitary cans (ca. 1885–1903), five hole-in-cap multi-serve sanitary cans, and a meat can, all of which are slightly crushed.

The early estimated date of this deposit suggests it is related to a short-term camp or lunch spot associated with the construction of the railroad. Although providing an indirectly dateable component likely related to railroad construction, observable debris is not unique, is otherwise unassociated with evidence of distinctive camp landscaping, and do not speak to aspects of socio-economic differentiation in late nineteenth/early twentieth-century work camps (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X16

This historical refuse deposit is just south of the BNSF railroad, near an adjacent dirt access road. Cultural constituents include 20 brown glass fragments representing at least five vessels, an aqua bottle base with a trademark indicating manufacture between 1906 and 1914, three Type 9 milk cans (ca. 1915–1930), and an externally-soldered hole-in-cap can bearing a stamp reading "Extra/Select."

Available data suggest this site represents a single- or multiple-use roadside trash drop dating to the early twentieth century or was perhaps related to a work camp for railroad maintenance. Observable debris is not unique, is otherwise unassociated with evidence of distinctive camp landscaping, and do not speak to aspects of socio-economic differentiation in railroad work camps (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X17

This historical refuse deposit is just south of the BNSF railroad, west of Ludlow. Cultural constituents include approximately 140 sanitary cans (including milk, meat, and other food; ca. 1915–1930) and roughly 30 glass bottles (ca. 1930–1956) distributed among six concentrations ranging between 21.9 and 253.6 square feet.

This site probably represents one of many dumps utilized during the occupation of the historical town of Ludlow (SBR-8920) between the early and mid-twentieth century. The refuse associated with these dumps is common and lacks the diversity to speak to aspects of community demographics or socio-economic differentiation and do not embody distinctive characteristics or components (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X18

This prehistoric pavement quarry is north of I-40 within the L-300 pipeline corridor. Cultural constituents include 14 brown CCS and FGV core reduction flakes distributed among two SRLs ranging between 1.6 and 7.7 square meters. These SRLs are surrounded by 24 other CCS flakes, two FGV flakes, and a core fragment.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. As such, given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X19

This prehistoric lithic reduction station is north of I-40 and just outside the L-300 pipeline corridor. Cultural constituents include 10 red CCS biface reduction flakes and two bifacial cores of the same material. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X20

This prehistoric lithic reduction station is north of I-40 and just outside the L-300 pipeline corridor. Cultural constituents include seven red CCS flakes. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X21

This prehistoric campsite is north of I-40 and is within the L-300 pipeline corridor. Cultural constituents include 60 CCS flakes and a 7-x-3-x-2-centimeter CCS formed flake tool. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X22

This prehistoric SRL and surrounding flake scatter is north of I-40 and is within the L-300 pipeline corridor. The SRL measures 3 x 2 meters and incorporates 10 red CCS core reduction flakes and a 9.2-x-7.2-x-7.5-centimeter bifacial core of the same material. A total of 25 other flakes surround the SRL. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X23

This prehistoric campsite is north of I-40 and is within the L-300 pipeline corridor. Cultural constituents include 24 red CCS flakes, a 6.5-x-5.1-x-3.5-centimeter CCS formed flake tool, and a 15-x-6-x-3-centimeter tabular tested cobble. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X24

This historical refuse deposit or railroad work camp is north of the BNSF railroad, adjacent to a parallel dirt access road. Historical refuse consists of 60 pocket tobacco tins, four boot heels with hob nails, a track spike keg, an enameled metal kettle, and multiple clear, brow, and amethyst bottle fragments that indicate manufacture between 1903 and 1929, as well as miscellaneous torch-cut metal debris and railroad hardware, most of which is distributed across a clear patch of ground that as a possible workshop area. Modern trash was also observed. Further research is necessary to assess the eligibility potential of this site.

EM-X25

This late nineteenth- to early-twentieth-century Chinese railroad worker's camp is south of the BNSF railroad, adjacent to a paralleling dirt access road. Historical refuse includes two complete and one broken/burned Chinese coins possibly dating between 1736 and 1795 (i.e., rule of the Qianlong Emperor, 6th Emperor of the Qing Dynasty), 10 broken fragments of a brown/green earthenware soy sauce vessel, an opium pipe damper rod, and five 3" square-cut nails. The site is transected by a 130-foot section of a 16-foot-wide bladed road. This site likely dates to 1882, when the SPRR construction effort reached this section of the route across southern California. The railroad construction effort included crews of Chinese workers, who lived in portable camps along the route. Further research is necessary to assess the eligibility potential of this site.

EM-X26

This historical refuse deposit is north of the BNSF railroad, adjacent to a paralleling dirt access road. Constituents include a small concentration of three milk cans dating between 1915 and 1930, surrounded by a scatter of 10 single-serve sanitary cans.

Available data suggest this site represents a single- or multiple-use early-twentieth-century roadside trash drop or was perhaps related to a work camp for railroad maintenance. Observable debris is not unique, is otherwise unassociated with evidence of distinctive camp landscaping, and does not speak to aspects of socio-economic differentiation in railroad work camps (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X27

This historical refuse deposit is south of the BNSF railroad, adjacent to a paralleling dirt access road. A total of three single serve sanitary cans, 22 Type 8, 9, and 19 milk cans (ca. 1915–1930), 17 fragments of window glass, approximately 20 fragment of bottle glass, including a base dating between 1924 and 1926, a green glass mixing bowl, and a Hemingray double petticoat clear glass insulators.

Available data suggest this site represents a single early-twentieth-century roadside trash drop or is perhaps associated with a work camp for railroad maintenance. Observable debris is not unique, is otherwise unassociated with evidence of distinctive camp landscaping, and do not speak to aspects of socio-economic differentiation in railroad work camps (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X28

This historical refuse deposit is east of Ludlow and south of the BNSF railroad, encompassing two paralleling dirt access roads. Cultural constituents include 30 Type 8, 9, and 10 milk cans (ca. 1915–1937); clear glass fragments, including at least one Hazel-Atlas bottle dating between 1920 and 1964; miscellaneous metal hardware and other cans concentrated in a 14-x-13-foot area; and a trail marker, consisting of a railroad tie driven vertically into the ground (44 inches tall). Road blading has impacted the condition of the site.

This site probably represents one of many dumps utilized during the occupation of the historical town of Ludlow (SBR-8920) between the early and mid-twentieth century. The refuse associated with these dumps is common and lacks the diversity to speak to aspects of community demographics or socio-economic differentiation and does not embody distinctive characteristics or components (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X29

This historical refuse deposit is east of Ludlow and south of the BNSF railroad, adjacent to a paralleling dirt access road. Cultural constituents include at least 15 Type 8, 9, 13, and 17 milk cans (ca. 1915–1948); various glass bottle fragments, including three with makers marks indicating manufacture between 1920 and 1970; and miscellaneous metal hardware.

This site probably represents one of many dumps utilized during the occupation of the historical town of Ludlow (SBR-8920) between the early and mid-twentieth century. The refuse associated with these dumps is common and lacks the diversity to speak to aspects of community demographics or socio-economic differentiation and do not embody distinctive characteristics or components (Criteria C and D). Available data also do not indicate a significant association with significant persons or events (Criteria A and B). The site is therefore recommended ineligible for listing under all criteria.

EM-X30

This large historical refuse deposit is east of Ludlow and south of the BNSF railroad, encompassing two paralleling dirt access roads. Cultural constituents include approximately 3,000 artifacts (including food and beverage cans, beverage and condiment bottles, white ware, crockery, milled lumber, and clothing fragments) reflecting early- to mid-twentieth-century dumping outside of Ludlow, largely distributed among one four loci (Loci 1–4). Diagnostics indicate deposition between 1915 and 1964. Several bladed roads intersect these loci and have impacted their integrity.

This site probably represents one of many dumps utilized during the occupation of the historical town of Ludlow (SBR-8920) between the early and mid-twentieth century. Unlike other nearby dumps, however, this deposit incorporates diverse artifacts that could speak to aspects of community demographics and economic differentiation. Further research is necessary to assess the significance and eligibility potential of this resource.

EM-X31

This site includes an abandoned structure (Feature 1), a loose concentration of tamarisk branches (Feature 2), and two loci of historic-era refuse (Loci 1 and 2). It lies just east of the town of Ludlow, one-quarter mile southwest of the intersection of Main Street and the National Old Trails Highway. State Route 40 is roughly 0.3 miles to the north. The structure is a circular, rock-lined pit with three visible courses of rock and heavy timber framing (with wire nails) around the entrance. The pit has a total outside diameter of 10 feet and an inside diameter of six feet; depth is difficult to determine because of significant in-filling.

It may have been roofed at one time, but only a single possible roof board remains. The opening to the pit faces the adjacent wash. Eleven feet to the east is a concrete and rock pad measuring 7.5 feet in diameter.

Feature 2 is a scatter of about 200 tamarisk branches harvested with an axe from an adjacent tree trunk. In the vicinity are 15 single-serving and 10 multi-serving sanitary cans and five vent-hole milk cans with a date range of 1917–1929. Artifacts in the two loci include bottle and jar fragments (aqua, brown, cobalt, olivine, colorless), sanitary and vent-hole milk cans, barrel hoops, lumber fragments, broken plates and cups of white improved earthenware, a ceramic crucible, a piece of chrome with a "Dodge" vehicle logo, oil cans, and miscellaneous metal fragments. Diagnostic items suggest site occupation in the 1910s–1930s.

Although the artifacts at this site are common, mass-produced items, the assemblages has variety. The features are somewhat unusual, and the in-filling suggests that more structural remains and more artifacts are likely to be buried here. Further research is therefore necessary to assess the significance and eligibility potential of this resource.

EM-X32

This resource consists of single-course rock alignments placed to form "room" outlines. The site is 440 feet southeast of the intersection of Main Street and Elliot Street in the town of Ludlow. The rocks are small and unmortared, placed into rectangles four to six feet across. There are no artifacts in association with the feature. One possibility is that the site represents a play area for local children. Given the absence of artifacts or actual "built" structural remains, the resource is unlikely to have associations with identifiable historical events or individuals (Criteria A and B), does not reflect distinctive engineering, design, or construction characteristics (Criterion C), and provides no data to address regional research issues (Criterion D). It is therefore recommended ineligible for listing under all criteria.

EM-X33

This resource is a roadside dump of some 200 domestic artifacts immediately below Bagdad Chase Road, south of the town of Ludlow. The artifacts include mostly cans (milk cans, single- and multi-serving sanitary food cans, spice tin, coffee tin); fragments of window glass; glass bottles, jars, and tableware (cup, drinking glass); and a few sherds of ceramic tableware, including a molded whiteware cup marked "[illegible]/JAPAN" and a shallow bowl or soup plate with a Steubenville mark from the 1930s. One maker's mark on a base from a panel bottle identifies it as made by the Long Beach Glass Company between 1920 and 1933; another mark from an aqua cup-bottom base may be from the Latchford-Marble Glass Company, ca. 1939–1957. A single "church-key" opened beverage can dates to sometime between 1935 and 1962. All indications are that the artifacts were deposited (probably from a vehicle parked on the adjacent road) in the 1930s or early 1940s, at a time before most rural communities had routine garbage pick-up services.

Because the refuse cannot be linked to any known individual, household, or other entity, it qualifies as an isolated historic-era refuse deposit. The common, mass-produced artifacts exhibit little variety and no association. The site is not clearly associated with a significant event or person (Criteria A and B) does not embody distinctive characteristics or components (Criterion C), and is uninformative regarding regional research themes (Criterion D). The site is therefore recommended ineligible for listing under all criteria.

EM-X34

This site lies approximately 300 feet south of the BNSF Railroad and 2.5 miles west of the town of Ludlow. It consists of and a scatter of broken bottles, cans, and miscellaneous metal refuse along an original alignment of the AT&SF Railroad. One of the artifacts is the base from an aqua, post-bottom mold-blown bottle with an embossed "AB. Co." mark from the American Bottle Company, 1906–1914; another bottle base of similar style is embossed with "W. F. & S. MIL," which could be William Franzen & Sons (1900–1930; Whitten 2018) or Northern Glass Works (1896–1900; Society for Historical Archaeology 2018). A dark-brown cup-bottom beverage bottle base had a partial mark "...G. & B. CO." – possibly Rhodes Glass & Bottle Co. 1901–1920 (Society for Historical Archaeology 2018). Cans included one hand-soldered hole-in cap can (pre-1880s) and two machine-soldered hole-in-cap cans (1880s–early twentieth century). Three upright pocket tobacco tins were also noted; these date no earlier than 1907.

The refuse deposit appears to date to the late nineteenth and early twentieth centuries and – judging by the hand-soldered can and possible pre-1900 bottle mark – may reflect more than one episode of dumping. Its location along an abandoned segment of the Santa Fe Railroad suggests that it is related to the railroad and may represent a small-scale work or construction camp. Despite its relatively early date, however, and the likely association with the railroad, the lack of other features (foundations, structure remains, etc.) and the apparent mix of dates limit the data potential of this site beyond its recordation. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C), and is uninformative regarding regional research themes (Criterion D). It is therefore recommended ineligible for listing.

EM-X35

Roughly 0.22 miles south of the intersection of Main Street and Bagdad Chase Road in the town of Ludlow is a small deposit of glass bottle fragments, barrel hoops, and vent-hole milk cans dating to the period 1915–1925 (Simonis 1997 – Type 8). No features were observed in the vicinity, making this an isolated historic-era refuse deposit. This deposit lacks association, quantity, and variety, and is made up of common, mass-produced items with little potential to address regional research questions (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is one of many similar dumping features in the area and is therefore recommended ineligible for listing under all criteria.

EM-X36

This resource is another small historic-era refuse deposit consisting of mostly cans and broken bottles. It lies north of the BNSF Railroad (site SBR-6693H) at a point 0.44 miles southwest of the intersection of Main Street and Bagdad Chase Road in the town of Ludlow. The artifacts are domestic in nature and include fragments of brown, amethyst, and colorless bottle glass; single- and multi-serving sanitary food cans; pieces of a ceramic cup and plate; one Type 1 tall milk can; one hole-in-cap food can; two upright pocket tobacco tins; a piece of wire; a brick; an aqua glass insulator; a piece of clay sewer pipe; and miscellaneous metal. The items reflect more than one dumping event: one brown bottle fragment bears an Owens-Illinois maker's mark from 1957, while the hole-in-cap food cans date to no later than the 1930s and the Type 1 milk can dates to the 1875–1885 period.

This temporally mixed deposit contains common, mass-produced items that add little to our ability to address important research questions. Although it lies near the railroad grade, it cannot be definitively linked to that feature or to any particular operation, individual, household, or other entity, and thus lacks variety, quantity, and association (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing.

EM-X37

Four miles northwest of the town of Amboy is a two-track dirt road/trail that runs between (and parallel to) the BNSF Railroad and the National Trails Highway for a distance of 1.6 miles. Several roadside refuse scatters were noted along the way and recorded as resources EM-X38 through 41, EM-X55, and EM-X57. The road is clearly visible as a compacted, two-track route but includes no associated engineering or structural features (culverts, rock retaining walls, etc.); instead it was "constructed" simply by removing rocks and placing them to the sides. The road does not appear on the earliest available USGS topographic quadrangle (Amboy Crater 7.5-minute, 1954). The 1921 GLO plat shows two routes labeled "National Old Trails Highway"—one about half a mile to the north of the "A.T. and S.F. Ry." and the other immediately to the south of the railroad, paralleling it closely. This southern route may correspond to the recorded resource. The six refuse deposits recorded along the route (described immediately below) contain mostly cans and broken bottles typical of "road-toss" deposits. The artifacts suggest multiple dumping events from the 1910s to the 1950s–1960s.

The recorded resource is one segment of a much longer route that apparently has been in existence since 1921 or before, and which probably was an important early travel (wagon/stage) route through this part of the Mojave region. A separate, ineligible, post-1954 road (*RB-X12*) parallels this course, and is the access road proposed by PG&E Additional archival research is needed to determine when the route was first in use and how significant a role it may have played in the development of settlement and the regional and inter-state transportation system, especially as a potential very early segment of SBR-2910H. If so, this segment would be a significantly contributing portion of said resource under at least Criterion C. Further research is necessary to evaluate the site under this criterion, as well as Criteria A, B, and D.

EM-X38

This small refuse deposit lies between the BNSF Railroad and the National Trails Highway about 4.5 miles northwest of Amboy. It is adjacent to recorded two-track road/trail EM-X37. The artifacts include one hole-in-cap milk can, possibly a Type 2 (1885–1903); two vent-hole milk cans (ca. 1900–1930); nine "church-key" opened beverage cans (1935–1960s); a broken horse or mule shoe; barrel hoops; an aqua glass insulator; a few sanitary cans; and a section of railroad rail imbedded vertically into the ground and probably serving as a marker for the adjacent historic road/trail.

These common, mass-produced items have little data potential beyond recordation, as they cannot be linked to a specific individual, household, or other entity and thus lacks variety, quantity, and association (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B), and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X39

Half a mile southeast of EM-X38 is another small refuse dump along the historic route between the BNSF Railroad and the National Trails Highway containing 16 vent-hole milk cans (ca. 1900–1930); two single-serving sanitary food cans and a square fish tin; barrel hoops and bits of wire; part of an aqua glass vessel; and a railroad rail section embedded vertically into the ground as a marker for the historic road/trail (EM-X37).

These common, mass-produced items have little data potential beyond recordation, as they cannot be linked to a specific individual, household, or other entity and thus lacks variety, quantity, and association (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X40

This small can dump lies along the historic road/trail (EM-X37) between the BNSF Railroad and the National Trails Highway, about 4.8 miles northwest of the town of Amboy. It includes two cone-top cans (probably 1935–1950s); two "church-key" opened beverage cans (1935–1960s); five single-serving and four multi-serving sanitary food cans; two rectangular meat tins; and a one-inch-wide metal strap or belt that is roughly 10 feet long. This deposit appears to represent a single dumping event in the early/mid-twentieth century.

These common, mass-produced items have little data potential beyond recordation, as they cannot be linked to a specific individual, household, or other entity and thus lacks variety, quantity, and association (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X41

This resource is another of the road-side refuse deposits located between the Burlington Northern Santa Fe Railroad to the north and the National Trails Highway to the south. It lies 4.3 miles northwest of the town of Amboy. The deposit is mostly cans, including vent-hole milk cans dating any time between 1917 and 1985; 11 single-serving and seven multi-serving sanitary food cans; three larger cans with external or internal friction lids; one "church-key" opened beverage can dating from sometime between 1935 and the 1960s; a brown bottle base with an Owens-Illinois makers mark (1929–1960); and miscellaneous crushed cans, a tab top (1962–1970s), wire, and bottle glass. One area is littered with slag and fire-altered rock, possibly part of the railroad ballast (a common use for slag in the early and mid-twentieth century).

The mass-produced items at this roadside dump have a relatively broad temporal range, from ca. 1930 to the 1960s. They have little data potential beyond recordation, as they cannot be linked to a specific individual, household, or other entity and thus lacks variety, quantity, and association (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X42

This resource is located 100 west of Sunflower Springs Road, approximately 5.5 miles southeast of the town of Essex. It consists of a mound of concrete chunks and rubble measuring 17 x 13 feet and four feet high, with a one-inch-thick concrete slab. A single-serving sanitary can lies next to the pile; it is the only artifact noted. The earliest available USGS topographic map (1954 Needles 1:250,000) does not show any structures along Sunflower Springs Road. The next available USGS map is the 1985 Essex 7.5-minute quadrangle, which shows three structures at the intersection of Sunflower Springs Road and the pipeline. No structures exist here today. Presumably the structure(s) represented by the concrete slab and chunks was built sometime between those two dates (1954–1985).

The exact origins and function of the concrete rubble are unknown and has little data potential beyond recordation, as it cannot be linked to a specific individual, household, or other entity and thus lacks variety, quantity, and association (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X43 and EM-X44

These two resources, though nearly a kilometer apart, are quite similar and are unique among the resources recorded for this stretch of the project. At both locations are two parallel sets of stones, one course high and more than 100 meters long, extending outward from Sunflower Springs Road. The stones appear to have been carefully hand-set to create a corridor six- to eight-feet wide and quite uniform. At both locations the corridors branch into smaller paths and pad-like areas, suggesting possible camp sites. The only artifacts noted on the surface were a few soft-top beverage cans and sanitary food cans, and fragments from rubber tires. Nothing is shown at these locations on the earliest available USGS topographic map (1954 Needles 1:250,000).

The features are interpreted as the remains of roadside camping facilities, probably dating to the mid-twentieth century. Lacking true artifact assemblages or other temporal/functional data, they have little data potential beyond recordation (Criterion D). There is no evidence to link them to important events or individuals (Criterion A and B), and they do not contain important technological, engineering, or design characteristics (Criterion C). Both sites are therefore recommended ineligible for listing under all criteria.

EM-X45

This is the historic railroad town of Essex, at the intersection of the National Trails Highway and Essex Road. The town began as a station along the Atchison, Topeka, & Santa Fe Railroad line in the early 1880s, when the Southern Pacific Railroad's construction effort reached this section of the route across southern California, and eventually developed into a town along Route 66. Eventually I-40 bypassed the town, leading to its decline.

Five resources were documented during this recordation: one enclosure made of wooden fence posts and wire, with cans, tree branches, and other debris (Feature 1); a wooden shack with horizontal board siding and corrugated metal roof (Feature 2); a part mortared stone, part wooden shack that once served as a post office (Feature 3); a mobile home with outbuilding (Feature 4); and a small residence with attached plywood "annex" and replaced windows (Feature 5). None of the structures are presently in use. No historic-era artifacts were observed. This somewhat complex site will require additional research to assess its significance and eligibility for listing.

EM-X46

This resource is a tiny can dump with one glass bottle base, located 0.23 miles south of the intersection of Essex Road and the National Trails Highway in the town of Essex. It lies south of the Burlington Northern Santa Fe Railroad tracks and Watson Wash. There are 26 vent-hole milk cans and the base to a colorless octagonal condiment bottle in a tight concentration. The milk cans are Simonis Type 11291 (1917–1985) dating to the earlier end of that range.

There are no features in association, and the lack of association, variety, and quantity makes this tiny can dump insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X47

This site is located 0.34 miles south of the Burlington Northern Santa Fe Railroad corridor and Watson Wash. It is a small refuse deposit probably dating to the 1940s era, with one cone-top can, nine "church-key" opened beverage cans, a one-gallon square dry goods can, two bottle bases (Maywood Glass Company "MG" inside box [1930–1959] with an embossed 12/70 that could represent 1942; and one Hazel

Atlas mark on a colorless condiment jar base dating 1920s–1964), a wash pail with wire handle, and a mop or broom stick. The artifacts have little data potential beyond recordation and are insignificant regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X48

This small refuse dump is located 1.2 miles southwest of the intersection of Essex Road and the National Trails Highway in the town of Essex, south of the Burlington Northern Santa Fe Railroad corridor and Watson Wash. It consists of two small concentrations of cans, broken bottles, and miscellaneous metal debris. One concentration includes 12 Type 9 milk cans (1915–1930) and a bent and repurposed horseshoe with wire nails the other contains five Type 9 milk cans and 10 single-serving sanitary food cans. The debris dates to the first few decades of the twentieth century and probably represents "road-toss." The resource has little data potential beyond its recordation and is insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X49

Two small scatters of cans were recorded 4.4 miles south of the intersection of Essex Road and the National Trails Highway in the town of Essex, between the BNSF railroad corridor and a dirt access road south of Watson Wash. One of the scatters consists of 12 upright pocket tobacco tins (ca. 1907–1960) and the other includes five Type 9 vent-hole milk cans (1915–1930). Another 15 cans are more widely scattered around these two loci. The resource is an early/mid-twentieth-century dumping site, one of many similar can dumps in the vicinity, has little data potential beyond recordation, and is insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X50

This refuse deposit includes four small refuse concentrations and a more dispersed scatter of debris about 40 meters to the southwest of resource EM-X49, between the BNSF Railroad corridor and a dirt access road. The artifacts are very similar to those at EM-X49, suggesting that the two resources might be a single, discontinuous scatter. The four concentrations contain a total of 64 vent-hole milk cans (Type 9) dating to the period 1915–1930, and 11 single-serving sanitary food cans. The dispersed scatter consists of aqua and brown bottle glass, slag (possibly railroad ballast), miscellaneous cans, and metal hardware. This scatter and the nearby refuse at EM-X49 probably represent dumping from the adjacent railroad and/or the dirt access road. They have little data potential beyond their recordation and are insignificant regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X53

This sparse prehistoric campsite is just north of the L-300 pipeline corridor. Cultural constituents include a 6.5-x-5.5-x-3-centimeter red CCS simple flake tool and three CCS flakes distributed over a 10-x-10-meter area. The site is in fair condition due pipeline construction. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

EM-X55

A tiny refuse deposit of one crushed meat tin, one vent-hole milk can (Type 8; 1915–1925), one knife-cut sanitary can, a barrel hoop, and one square amethyst "HEINZ" bottle base (pre-1930?) was recorded 2.5 miles west/southwest of the town of Bagdad and immediately south of the BNSF Railroad. This deposit probably reflects a single dumping event around 1920. The lack of association, variety, and quantity of the assemblage greatly limits its potential to add to our understanding of consumer behavior or similar research questions (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X56

Roughly three miles south/southeast of the town of Bagdad, this site consists of a base and finish fragment from a dark brown post-bottom mold beer/ale bottle with metal seal still intact and an embossed base mark reading "R & CO.2" (Reed & Co., ca. 1885–1904), a small lap-seam can with key-wind tab still in place, and fragments of aqua window glass. These few artifacts have little data potential beyond their recordation and are insignificant regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X57

The sparse historic-era debris scatter is just south of the BNSF Railroad consists of one amethyst condiment or milk bottle finish and base with an embossed "7"; one ceramic cup fragment; two Type 11291 milk cans (ca. 1917–1985); two-barrel hoops; and one square meat tin. The amethyst bottle probably dates to before 1930, suggesting an early twentieth-century date of deposition for these common mass-produced items. As with the other small roadside dumps recorded along this route, the assemblage lacks association, variety, and quantity, has little in the way of data potential beyond recordation, and is insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

EM-X58

This resource consists of a sparse scatter of broken glass insulators (aqua and colorless), bits of wire, and fragments of milled lumber. It is located immediately adjacent to the BNSF railway, northeast of the town of Danby. The resource is clearly a pile of refuse from a communications line, probably deposited during repair or replacement of the adjacent line that parallels the railroad. It has little data potential beyond recordation, cannot be dated precisely, and no longer retains any integrity. It is insignificant regarding regional research themes (Criterion D), is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

KR-X1

This historic-era refuse deposit lies just north of an unimproved dirt road and 1.1 miles southeast of the intersection of Lavic Road and I-40, and east of massive multi-component site SBR-2328/H (described later in this report). Historical refuse includes 40 pieces from a tooled-lip aqua glass bottle with an early crown finish. An isolated brown CCS core reduction flake was also observed in the site area. Available data suggest this site represents a single-use late nineteenth/early-twentieth-century roadside trash drop. The assemblage lacks association, variety, and quantity, has little in the way of data potential beyond recordation, and is insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). It is therefore recommended ineligible for listing under all criteria.

MM-X1

This resource is another small historical refuse deposit adjacent to the corridor of the AT&SF (now BNSF) railroad. It is 3.5 miles northwest of the intersection of the National Trails Highway and Bagdad Road at Bagdad. Artifacts include a few sanitary cans, "church-key" opened beverage cans (1935–1960s), an upright pocket tobacco tin, shards of olivine and aqua glass, an enamelware cup, a Hemingray glass insulator from the late nineteenth century, a mold-blown bottle base probably also from the late nineteenth century, a shoe sole, barrel hoop, bits of wire and burnt lumber, and miscellaneous railroad hardware. The insulator and bottle base found together with the sanitary and "church-key" opened cans indicate multiple episodes of dumping several decades apart.

This debris may be associated with maintenance of the railway and/or the adjacent utility line. However, this association does not elevate the debris scatter to eligibility for listing: it consists of a temporally mixed assemblage of common, mass-produced items with little data potential regarding regional research themes beyond its recordation (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Similar debris can be found along virtually every stretch of rural railroad and road in the region and beyond. This scatter is recommended ineligible under all criteria.

NS-X1

This resource consists of cans, bottle fragments, nails, and miscellaneous refuse (metal spring, metal handle, wire, asphalt). It is located 0.8 mile southwest of the intersection of Crucero Road and Highway 40, in Ludlow, along the berm of a PG&E pipeline access road that connects the pipeline to Ludlow Road. There are three vent-hole milk cans (Simonis Type 10 – 1917–1929), one key-wind rectangular meat can, one sanitary can, two cut nails and 20 wire nails, and shards of aqua, brown, olivine, and colorless bottle glass. The assemblage appears to date to ca. 1920, but it lacks quantity, variety, rarity, and clear association, has little in the way of data potential beyond recordation, and is insignificant regarding regional research themes (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). This tiny collection of common, mass-produced items is therefore recommended ineligible under all criteria

NS-X2

This is a refuse deposit made up of 10 sanitary cans and one jar base, east of a PG&E access road that links the 300 pipeline corridors with Highway 40 near Essex. The jar base is from a colorless glass vessel with an Owens-Illinois mark dating to 1951; the cans are undateable, beyond saying they are from the twentieth century. It is likely that this deposit represents a single dumping event from the early 1950s. It has no other data potential beyond recordation: the assemblage lacks variety, rarity, quantity, and association; it is made up of common-mass produced items of the type found along any rural road in the region, the state, or the nation. It is insignificant regarding regional research themes (Criterion D), it is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C), and is therefore recommended ineligible under all criteria.

RB-X2

This prehistoric campsite is on hardpacked sediment between two large coppice dunes north of Memorial Drive and east of Troy Road. Cultural constituents include 13 pieces of FGV core reduction debitage, five CCS core reduction flakes, a -7-x-3.5-x-1-centimeter rough percussion FGV biface associated with scattered pieces of FAR.

The site encompasses an area modeled to have the highest potential to preserve buried archaeological deposits and visibly retains evidence of a potentially dateable fire feature, although its integrity appears to have been destroyed. Based on this, further research, including limited test excavation and surface collection, is necessary to assess site eligibility.

RB-X6

This resource consists of three well-maintained segments of dirt and gravel road north of Highway 40, where Pisgah Road turns to the northeast. It runs adjacent to the power station (R-36-14878) and to the BNSF railroad corridor. The road, which is depicted on the 1955 USGS Cady Mountain 15-minute quadrangle, runs beneath high-voltage utility lines. It continues both southwest and northeast for several miles, well beyond the project corridor. The road segments are 14 to 18 feet wide, with one-foot-tall berms on both sides. No artifacts or engineering features were observed.

Judging by the 1955 USGS topographic quadrangle, the recorded road segments are part of a much more extensive transportation corridor that has existed for at least 63 years. Further research is necessary to determine what role this corridor may have played in the development of regional settlement, transportation, and economics.

RB-X10

This dirt road connects the National Trails Highway with an unnamed road to the south, crossing the BNSF Railroad corridor along the way. The recorded segment is 1.3 miles long and appears as a maintained and moderately used two-track road. It is depicted on the 1955 Ludlow 15-minute quadrangle. The segment is 16 feet wide and has berms on each side measuring one foot wide and one to two feet tall. The only road feature observed was a large concrete double-box culvert/underpass at the railroad, stamped with the date "1923." There are very large piles of lava rock along either side of the road, undoubtedly placed as rip-rap to shore up the banks where the road crosses under the railroad grade. The concrete culvert is more appropriately considered a feature of the railroad than of this dirt two-track road. No artifacts were observed along the 1.3-mile segment.

This resource appears to be a minor connecting route between larger transportation corridors; as such, it is not likely to have played a significant role in the development of the local or regional transportation system or the economic development of the area. The only engineering feature is the 1923 double-box culvert that is part of the railroad grade, and the dirt road itself exhibits no distinctive or unique characteristics of design, engineering, or construction, and is insignificant regarding regional research themes (Criteria C and D). No artifacts were observed along the route, and there is no evidence to link it to any important construction entity or individual (Criteria A and B). This resource is therefore recommended ineligible under all criteria.

RB-X11

This resource is a road connecting the National Trails Highway to the town of Ludlow (site P-36-008920, described later in this report), where it ends at a "T" intersection at Main Street. The road is depicted on the 1955 Ludlow 15-minute quadrangle. Currently it is paved, but some parts have fallen into disrepair. This 0.2-mile stretch of road is directly (and solely) connected with the town of Ludlow, which has been recommended as requiring further research to determine its eligibility for listing. It is recommended that this access road for the town be considered a feature of that larger site and evaluated accordingly.

RB-X12

This linear resource is a northwest/southeast-oriented road that parallels the southern side of the historic AT&SF Railroad. The documented segment measures 3.1 miles and is an actively used dirt road. The 1921 GLO map (T6N, R11E) shows a road running parallel to and immediately south of the railroad near this location, with the label "Old Trails Highway." Said road may correspond to what is now Route 66/the National Trails Highway. The recorded resource, which is not an old segment of Route 66 but has likely compromised remnants of said route (possible EM-X37), runs between/parallel to the railroad and Route 66. It is not depicted on the 1954 USGS Amboy Crater 7.5-minute quadrangle, suggesting that it is a later access road for the railway. The documented segment is 3.1 miles long. No artifacts or engineering features were observed.

As a probable post-1954 dirt access road, with no engineering features, artifacts, or map depictions, this resource has no clear associations with important events, trends, or persons (Criteria A and B). It is a common resource type with no distinctive or unique engineering, design, or construction characteristics, and is insignificant regarding regional research themes (Criteria C and D). The lack of associated artifacts and map depictions makes it impossible to determine exactly when the road was constructed, or why. Therefore, Far Western recommends the road ineligible for listing under any criteria.

RB-X13

This 1.2-mile road connects Route 66 at Amboy to the pipeline access roads to the north. It is depicted on the 1956 Cadiz USGS 15-minute topographic map as an unimproved road running along one side of a dike (one of several built along this portion of the highway). No associated features or artifacts were observed during recordation. Because the road ends at the pipelines, it would have served only as a minor access route, thus playing no significant part in the development of the larger regional transportation system. While it may have been associated with the development of the pipelines themselves, its role would have been minor. With no distinctive or unique characteristics of engineering, design, or construction (Criterion C); with no clear link to significant historical events or individuals (Criteria A and B); and with no associated artifacts that could speak to regional research themes (Criterion D), the resource does not meet any of the criteria for listing and is recommended ineligible.

SN-X13

This prehistoric complex occupation occupies a sandy, gently sloping east-facing swale, approximately south of a dirt access road and the L-300 pipeline corridor. Cultural constituents include four partially buried FGV millingslabs, four FGV unifacial handstones, two bifacially-worked CCS flake tools, a 5.5-x-3.7-x-1.8-centimeter CCS biface, fragments of fire-altered rock, and a sparse scatter of approximately 70 red and red/brown CCS flakes, most of which are within a 10-x-10-meter concentration. Charcoal is evident in the sediment surrounding the millingslabs and FAR. The site appears to be in good condition.

Although the site occupies an area modeled to have the lowest potential to preserve buried archaeological materials, the observable assemblage incorporates directly-dateable organics in association with food-processing artifacts that have the potential to yield significant information regarding prehistoric hunter-gatherer settlement-subsistence patterns. It is therefore recommended that the site be considered eligible for listing under Criterion D. The site is not clearly associated with a significant event or person and does not embody distinctive characteristics or components and is therefore recommended ineligible under Criteria A, B, and C.

SN-X14

This prehistoric lithic reduction station consists of a sparse scatter of 12 brown, red, grey, and yellow CCS core reduction flakes. The site is situated along a sandy berm, adjacent to a dirt access road and within L-300 pipeline corridor. Multiple dozer rock push-piles are present, suggesting a disturbed context.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

SN-X15

This prehistoric lithic reduction station consists of a small, sparse scatter of 28 reddish-brown and yellow CCS core and biface reduction flakes. The site is atop an aeolian capped fan-flat, southwest of an unimproved dirt road and the L-300 pipeline corridor. The site appears relatively undisturbed.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

SN-X16

This resource is a collapsed rock cairn standing 10 meters west of a dirt access road for the PG&E 300 pipeline corridor, 2.5 miles south of the intersection of Highway 40 and Crucero Road in Ludlow. The cairn is constructed of 21 fist-sized and larger cobbles of various local material, with no sign of a post and no artifacts anywhere nearby. It sits atop a low pile of gravels and dirt. No mine or other features are shown at this location on the available historical maps.

As a common, unremarkable, and undated feature with no associated artifacts, this resource cannot be linked to any known event, development, activity, or persons (Criteria A and B). It has no unique or distinctive characteristics of engineering, design, or construction; nor can it inform any of the research themes identified for the region (Criteria C and D). This single cairn is recommended ineligible under all criteria.

SN-X17

This is a small, sparse scatter of cans, bottle fragment, and wood. It is located 1.9 miles south of the intersection of Highway 40 and Crucero Road, in Ludlow, and six meters west of a dirt road that accesses the L-300 pipeline. Most of the artifacts were found within a sandy wash, suggesting they may have eroded from up-slope. Artifacts include four brown bottle bases with makers' marks: a Thatcher Manufacturing Co. mark dating between 1944 and 1985, with an embossed "56" possibly representing the date of manufacture; another brown bottle base with a ca. 1930–1959 "MG" mark for the Maywood Glass Company; a "flask"-type alcohol bottle with "…PINT" embossed at the heel and a keystone mark on the base (possibly 1930s–1968); and two "church-key" opened beverage cans dating to between 1935 and the 1960s. A five-gallon bucket, a five-gallon oil can, and two pieces of milled lumber with wire nails were also noted. The scatter is located between Crucero Road (P-36-006404) and Bagdad Chase Road (depicted on the 1955 USGS Ludlow 7.5-minute quadrangle as an "Old Railroad Grade"). It probably represents casual dumping from one of these routes.

As a relatively late (1950s-era) dumping event with no evidence to connect it to a known household, company, or individual, this small assemblage has little data potential beyond its recordation. It is a ubiquitous resource type, found along virtually any rural road in the region, the state, or the nation. There are no features in association, other than the two roads. It is insignificant regarding regional research themes (Criterion D), it is also not clearly associated with a significant event or person (Criteria A and B) does not embody distinctive characteristics or components (Criterion C), and is therefore recommended ineligible under all criteria.

SN-X19

This prehistoric small SRL and associated artifacts is on a desert pavement between two dirt roads within the L-300 pipeline corridor. The SRL measure 3.3 x 2 meters and incorporates 13 white CCS flakes and a tested cobble of the same material. Two bifaces of the same material, including a rough percussion piece (9.7 x 4.4 x 3.4 centimeters) and a roughout form (10.8 x 7.6 x 2.9 centimeters), are just outside of the SRL. The site is in good condition but has suffered minimal impacts from nearby vehicle traffic.

Single SRLs and multi-SRL pavement quarries are regionally prolific, highly redundant, and of little informative value. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

SN-X20

This resource consists of a small scatter of cans and car parts at the edge of a sandy wash, 2.6 miles east of the intersection of the National Trails Highway and Kelbaker Road in Chambless. Artifacts include a military-issue "Desenex" foot powder (fungicidal) can with a perforated "sprinkle" external friction lid; a fuse, a U-joint and cap seal, and about 20 cans (one-gallon, multi-serve, and single-serve), all opened with a rotary can opener. The items appear to date to the mid-twentieth century, but no more-precise dating is possible. The site is located immediately north of the L-300 pipeline and might be associated with construction or repair of the line (though this is conjecture).

As one of thousands of regional mid-twentieth-century rural refuse dumps, with no clear associations, no features, and minimal potential to speak to research themes beyond its recordation (Criterion D), this resource is recommended ineligible under any criteria. The site is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C).

SN-X22

Resource SN-X22 is a segment of dirt road with two right-of-way markers. It is located 3.7 miles east of Kelbaker Road and the National Trails Highway/Historic Route 66 in Chambless. The road segment is 0.4-

mile-long and 10–17 feet wide; it connects present-day Route 66 with an older alignment of that route. The road is not depicted on the 1956 USGS Cadiz 15-minute quadrangle. However, the two right-of-way markers are the 6.5-x-6.5-inch "C" block concrete post type installed from 1914 to the 1930s or later, depending on the district. These markers are likely associated with Route 66/National Trails Highway, and not associated with SN-X22, which is probably younger than 1956. As with the many other mid-century dirt roads throughout the Mojave Desert, this resource appears to be a minor connecting route between larger transportation corridors; as such, it is not likely to have played a significant role in the development of the local or regional transportation system or the economic development of the area. With no distinctive or unique characteristics of engineering, design, or construction (Criterion C); with no clear link to significant historical events or individuals (Criteria A and B); and with no associated artifacts that could speak to regional research themes (Criterion D), this road segment does not meet any of the criteria for listing and is recommended ineligible for listing under all criteria.

SN-X23

This resource consists of three discrete but adjacent can dumps with other miscellaneous debris, located 0.3 mile north of Route 66 and just east of Mac TUL Road in Chambless. The three dumps are made up of food cans (evaporated milk vent-hole type, key-wind coffee, single- and multi-serving sanitary fruit/vegetable type, oval meat tins); "church-key" opened beverage cans; condiment jars; bottle fragments of colorless, brown, aqua, green, and at least one piece of selenium glass; domestic whiteware; automobile parts (fender, exhaust pipe and muffler, seat springs); motor oil cans; and tobacco tins. Surrounding the three concentrations is an extensive scatter of about 75 cans, 60 bottle fragments, bits of rubber and ceramic sherds. The refuse dates to ca. 1930s–1960s and represents more than one episode of dumping.

The 1956 Cadiz 15-minute quadrangle shows an unimproved road running through this location, although the road (Mac TUL) is slightly farther to the west than the dump. This resource probably represents casual roadside dumping during the mid-twentieth century. The materials are common, mass-produced items of the sort found along rural roads throughout the region, the state, and the nation. While the assemblage has some variety and quantity, it lacks rarity and association, and is insignificant regarding regional research themes (Criterion D). The site is also not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics or components (Criterion C), and is therefore recommended ineligible under all criteria.

SN-X24

Twenty-five meters to the southwest of SN-X23 and 35 meters east of Mac TUL Road is another small but dense concentration of cans and bottle glass. There are 11 vent-hole evaporated milk cans (ca. 1900–1930s), 26 single-serving and seven multi-serving sanitary food cans, about 20 meat/fish tins, five tobacco tins, metal stove parts, a coat hanger, and pieces of colorless, brown, and green bottle/jar glass. The jars include condiment and canning types. One catsup bottle base is embossed with a Heinz mark dating to the period 1890s–1946 and probably dates to the 1920s–1940s; there is also the upper half of a light-green bottle with an early crown finish and embossing around the shoulder that reads "BEECHNUT//CANAJOHARIE, N.Y." and dates to ca. 1920–1940. Also noted in the sparse scatter around the concentration were a few 12-ounce beverage cans with "church-key" openings, dating to ca. 1935–1960s. Taken together, this domestic assemblage appears to date to the 1920s–1930s period, with the 12-ounce beverage cans possibly reflecting a later dumping event.

This site, together with adjacent site SN-X23, represents episodes of domestic dumping from the first half of the twentieth century, a period when most rural communities had no organized refuse collection system. Most residents in these communities either buried their trash on their property or hauled it out to remote locations such as this one. There is no evidence to link this deposit to any particular household or individual(s), and so its data potential is very limited (Criterion A and B). The artifacts are common, mass-produced items of the type found along rural roadways throughout the region, the state, and the nation. It does not embody distinctive characteristics or components (Criterion C) and is insignificant regarding regional research themes (Criterion D). This site is therefore recommended ineligible for listing under all criteria.

SN-X27

This is a scatter of cans, bottle glass, vehicle parts, and metal pipe in a drainage along the PG&E 300 pipeline corridor and access road. It is 1.3 miles northeast of the intersection of the National Trails Highway and Mac TUL Road in Chambless. There are at least 56 cans, including 18 "church-key" opened beverage cans (some with Coors branding) dating to the mid-twentieth century, one aerosol can (1947 or later), a motor oil can, and a few sanitary food cans. Bottles include a clear glass base with a Maywood Glass Company mark dating to the period 1930–1959, a brown bottle base and a complete bottle with Obear Nestor Glass Company marks dating to the period 1915–1978, a post-1940 brown Coors beer bottle, and a brown beverage bottle with an American Wheaton Glass Company mark that dates to 1961–1962. Also present are an exhaust pipe with muffler, car seat springs, vehicle trim, a gas tank, a second exhaust pipe, and tire parts. Also noted were bed springs, miscellaneous wire, and segments of 3.5-inch-diameter pipe.

This site appears to be another of the ubiquitous mid-twentieth-century refuse scatters found throughout the region. The materials are common, mass-produced items with little data potential beyond their recordation. They have no clear association with a known event, company, or individual of significance, or with an identified historical research theme (Criteria A, B, and D). It also does not embody distinctive characteristics or components (Criterion C) and is therefore recommended ineligible for listing under all criteria.

SN-X29

Eight artifacts make up this historical resource: four bottles with Owens-Illinois maker's marks, two brown bottles, a metal coffee can lid, and a metal panel from a vehicle, in a 40-x-50-foot area adjacent to a dirt road. The artifacts were found 3.6 miles northeast of the intersection of Kelbaker Road with the National Trails Highway in Amboy. The Owens-Illinois bottles have "Duraglas" marks dating to 1940 or later. The other bottles are 16-ounce beverage bottles with no marks. The scatter lies 14 meters east of the dirt road recorded as SN-X22 (see above).

This small scatter of common, mass-produced items lacks association, quantity, variety, and rarity. It is one of many such scatters along the rural roads in this region and has very little data potential regarding regional research themes beyond its recordation (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Similar debris can be found along virtually every stretch of rural railroad and road in the region and beyond. This scatter is recommended ineligible under all criteria.

SR-X6

This prehistoric pavement quarry is situated along distal alluvial fans incorporating naturally occurring CCS cobbles, with some evidence of some natural rock weathering and associated spalling. The two identified SRLs measure 4.7 and 19.6 square meters apiece and contain eight and 20 red CCS core reduction flakes each, respectively. The unidirectional CCS core (9 x 5 x 2 centimeters) is outside of the SRLs as are a few additional flakes. The site appears to be in good condition.

Pavement quarries of this character are regionally prolific, highly redundant, and of little informative value. The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have low sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

SR-X7

This multi-component site is just east of a historical road segment (P-36-026518) south of the L-300 pipeline corridor. A drainage runs the entire length of the southeastern site boundary. The prehistoric component includes four SRLs and a 4.2-x-2.6-x-1.8-centimeter CCS formed flake tool; two probable modern collector's piles were also observed. The collector's piles range between 0.2 and 0.8 square meters and contain numerous rocks and multi-hued flakes. The SRLs range between 8.5 and 20.4 square meters and contain between eight and 20 variegated CCS core reduction flakes and pieces of shatter apiece.

The historic-era component consists of eight "church-key"-opened and pull-tab beer cans (1935–1960s and 1960s or later, respectively) and a meat tin. The site is subject to heavy vehicle and recreational traffic, and modern debris, such as milled wood, metal hangers and bottle glass, was observed throughout the site. Local rockhounding is prolific, and recreationalists and modern flintknappers are known to have been visiting nearby SBR-2328/H since the 1930s.

The prehistoric component is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). Pavement quarries including SRLs like those at this site are regionally prolific, highly redundant, and of little informative value, particularly without associated temporal diagnostics, and are insignificant regarding regional research themes (Criterion D). That the region has been continuously visited by rockhounding enthusiasts also detracts from much of its potential to preserve intact prehistoric components. The prehistoric component is recommended ineligible under all criteria, accordingly.

Furthermore, the historical refuse found during the current project is common, probably reflects historical and modern recreational use of the area and does not contribute significant information regarding regional research themes (Criterion D), nor does it speak to significant events or persons of significant historical interest (Criteria A and B). This component also does not embody distinctive characteristics (Criterion C). Far Western therefore recommends that the site be considered ineligible for listing under all criteria.

SR-X8

This prehistoric lithic reduction station consists of a sparse scatter of 13 red and brown CCS core reduction flakes, comprised mostly of shatter. Artifacts are atop alluvial fans emanating from the Cady Mountains. There is evidence of heavy vehicle and dirt bike tracks throughout the site, suggesting the area is used for recreational activities.

The site is not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). As such, and given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the site be considered ineligible for listing under all criteria.

SR-X10 (with Mary Maniery)

This site consists of a historic-era refuse deposit and an isolated flake tool. Historical refuse is scattered along the northern edge of the Atlanta and Pacific Railroad (SBR-6693H). The Cady Mountains are to the north and the Bullion Mountains are to the south of the site. The historic-era component includes a diffuse scatter of approximately 600 artifact fragments (representing 80–100 whole artifacts) spread in a linear area nearly one mile in length. The isolated prehistoric artifact is a single, red CCS flake tool, located in the center of the site; all are north of the railroad. An unnamed historic-era dirt road (P-36-026494), which runs east-west and parallels the railroad, bisects the southern boundary of the site, running east-west. The road was constructed sometime after 1950 and may have been used for either railroad or utility line maintenance. The L-300 pipeline corridor aligns with this dirt road.

The site is located about a mile west of Argos, a historic railroad station/siding associated with the AT&SF, first built as a dirt and gravel road in the 1910s, and later paved in the late 1920s. Argos (see back to *CA-SBR-4165H*) was one of many Santa Fe railroad stations/sidings associated with mining activity on the route between Barstow and Needles, some of which remain while many others are nothing more than locations on a map (Palmer 1985).

Historical artifacts include White Improved Earthenware (WIE) sherds, about 60 cans (half of which are sanitary seam cans; others include milk and hole-in-top food cans and a pocket tobacco tin), metal hardware (railroad spikes, wire, and iron railroad clamps), a glass insulator fragment, and green, amethyst, aqua, and brown glass bottle fragments. Diagnostic artifacts include a Prince Albert pocket tobacco tin (1910–1938 [Wesseler 2015]); aqua Coca-Cola bottle (1923–1955 [Lockhart and Porter 2010]); and a WIE vessel with Homer Laughlin Hudson mark (1908–ca. 1928 [Gates and Ormerod 1982:134]), among others. The deposit also includes a fragment of a WIE plate marked with "Trade/Expressly For/Santa Fe/Dining Car Service922" and a crushed pail embossed with "Santa Fe Route."

These artifacts appear to have been deposited around the 1920s–1930s and may represent roadside dumping or, as the Santa Fe Dining Car dish and pail suggest, were discarded out the window of a train. As such, the site is recommended ineligible for listing under Criteria A and B, as it lacks clear association with historical events or individuals. There are also no architectural remains at this site, rendering it ineligible under Criterion C. The site was fully documented in the field and additional research will not be likely to yield further information on early transportation history in the area, therefore, the site is does not qualify under Criterion D. This site is recommended as ineligible for listing, accordingly.

SR-X11 (with Mary Maniery)

This historic-era utility site was recorded by Far Western in 2018 and consists of utility pole remnants (Features 1–12), segments of transmission wires, scattered glass insulator fragments and sanitary cans. The site generally parallels along the route of the historic Atlanta and Pacific Railroad (SBR-6693H) and intersects multiple segments of historic-era dirt and paved roads (e.g., SBR-2910H and P-36-026494). The site is approximately 3.2 miles long and aligns with the L- 300 pipeline right-of-way. The Cady Mountains are to the north and the Bullion Mountains are to the south of the site.

The utility pole remnants include older cut square posts and more recent circular posts, with a sparse scatter of wood fragments spanning the entire length of the site. Poles have been cut off at the base, within a few inches of the ground level. Feature 6 contains two posts in a berm that extend vertically about one to two feet above ground.

Segmented wire insulator fragments scattered under the pole line throughout the site, especially between Feature 9 and Feature 12. Glass insulators were found at four of the pole locations and are composed of aqua, blue, and colorless glass. Several of the insulators are embossed and were made by the Hemingray

Glass Company. One has a patent date of May 2, 1893; the patent was for the design of the drip points on the insulators, rounded points at the base that draws moisture off the surface of the insulators and allows it to drip. These artifacts are all threaded glass pintype insulators (McDougald and McDougald 2017). The Hemingray Glass Company operated between 1848 and 1972 and was the largest manufacturer of glass insulators in the world. The insulators found on site were made from the 1880s through 1915 (Hemingray 2018).

Available data suggest that SR-X11 represents the remnants of a telegraph line associated with the railroad. Typically, construction of the telegraph line would occur concurrent with, and slightly ahead of, laying of railroad tracks. The line likely connected the siding at Argos with stations to the east and west. While not depicted on maps, the line likely was laid in 1881 or 1882 when the railroad was built and may have been maintained into the 1950s or 1960s, probably servicing both telegraph and telephone communication lines.

Telegraph lines were common utility elements, paralleling railroad routes across the nation. This line was built over a decade after the first transcontinental telegraph line and railroad were completed. By the early 1880s building telegraph lines associated with railroads was commonplace. As such, the site does not meet Criterion A. The company who built the line is unknown and it does not meet Criterion B. The line was constructed in a typical style built across the nation and does not represent the work of a master or unique engineering accomplishments under Criterion C. Apart from the partially buried vertical pole remnants, there is no indication of depth or subsurface deposits found on site. The informational value has been captured at the recordation level and additional research potential is minimal. Therefore, the site does not appear to meet Criterion D. While the site retains integrity of location, setting along the railroad grade, and design, the removal of poles, wires, and insulators has compromised the integrity of workmanship, materials, feeling, and association. It is therefore recommended that this site be considered ineligible for listing under all criteria.

SR-X12

This historical mining prospect complex consists of seven hand-dug and mechanically-excavated prospect pits of which one is associated with historic-era debris, including one pull tab and seven side seam beverage cans. The pits are round to ovate, measuring between 28.3 and 169.6 square feet, and extending to depths of one to five feet below the ground surface. Spoils piles are associated with each, but additional artifacts were not observed.

The 1955 Ludlow 15-minute quadrangle does not show prospects at this location, suggesting, along with the associated beverage cans, the excavation of these pits after this timeframe. As an unremarkable example of a very common resource type, with no developed mine workings to indicate it was a successful venture, the prospecting area would have played no significant role in the development of a larger district. They have no distinctive characteristics of engineering, design, or construction, nor do they have data potential beyond their recordation (Criterion D). Given this and considering that site is not clearly associated with a significant historical event or individual and does not embody distinctive characteristics (Criteria A, B, and C), this resource is recommended ineligible for listing under all criteria.

SR-X13

This is a discrete concentration of 22 "church-key" opened motor oil cans embossed with "Arctic/Special/SAE 10W/HD/MOTOR OIL." Arctic Special motor oil was produced by Mobil Oil (now Mobile/Exxon), and the all-metal cylindrical motor oil cans probably date from the 1930s–1950s. These are common, mass-produced items that lack association, quantity, variety, and rarity. It is one of many such dumps along the rural roads in this region and has very little data potential regarding regional research themes beyond its recordation (Criterion D). It is also not clearly associated with a significant event or person (Criteria A and B) and does not embody distinctive characteristics (Criterion C). Similar debris can be found along virtually every stretch of rural railroad and road in the region and beyond. This site is recommended ineligible under all criteria, accordingly.

SR-X14

This early to mid-twentieth-century refuse deposit lies adjacent to the BNSF railroad corridor about 500 meters west of the historic Argos Siding (SBR-4165H). There are more than 140 cans (milk, food, beverage, other); a few shards of brown, green, or colorless bottle glass; sparse ceramics; and a few pieces of metal hardware. The debris appears to have been picked over by "pot-hunters" And as such, its integrity has been compromised.

Diagnostic items include about 75 milk cans dating to the period (1903–1950s), colorless bottle and jar bases with Owens-Illinois marks dating to the 1940s and 1950s, a brown bottle with a probable 1937 Owens-Illinois mark, a colorless milk bottle with applied color label (mid-1930s or later) from a local San Bernardino dairy, a brown bottle base with a Maywood Glass mark dating 1930–1959, a brown bottle base with a Glass Container Corporation mark dating the 1934–ca. 1968, and pieces of what may be Fiestaware (1930s or later). There are three concentrations of debris, probably representing three separate (but temporally overlapping) dumping episodes.

Given its location and date range, this site could be associated with the railroad, construction of the L-300 pipelines, or casual dumping from the adjacent road, or linked to occupation of the Argo Siding. There is no evidence that allows us to link it to any particular entity or individual (Criterion B), and so it lacks clear association with significant historical individuals (Criterion A). The materials are mass-produced and common, with no data potential beyond recordation, does not embody distinctive characteristics, and do not make significant contributions to regional research themes (Criterion D). Far Western therefore recommends the site ineligible under all criteria.

SR-X15

This multi-component resource is south and adjacent to the BNSF railroad corridor and is just west of the historic Argos Siding (SBR-4165H). The Cady Mountains are to the north and the Bullion Mountains are to the south of the site. Historical constituents consist of three features, representing buried concrete foundation segments and associated structural and refuse debris, a rectangular shallow dozer scrape, and a bladed road bypass. Prehistoric constituents include a -5.5-x-3.8-x-0.8-centimeter red CCS fine percussion biface fragment associated with three CCS flakes near the buried concrete foundations.

The miniscule prehistoric component lacks temporally diagnostic artifacts, expresses low diversity, and is positioned in an area disturbed by historical activities that also possess the lowest modeled sensitivity for prehistoric resources, all of which diminish its contribution to regional research themes (Criterion D). Moreover, the prehistoric component is also not clearly associated with a significant event or person (Criteria A and B), does not embody distinctive characteristics (Criterion C), and it is accordingly recommended that it be considered a non-contributing portion to the eligibility of the site.

The historical component may well be related to the Argos Siding, but further research is necessary to assess that potential association.

NEWLY RECORDED ISOLATES

Survey of the L-300 project APE resulted in the recordation of 48 prehistoric and 167 historic-era isolated finds (Table 12). More than half (ca. 56%) of the few prehistoric isolates are single or coupled pieces of debitage, while a little more than half of all historical isolates (ca. 42%) are single or coupled cans of varied purpose. Overall, however, cans and bottles comprise more than three quarters (ca. 68%) of all isolated resources documented during the current project, while nearly 10% are small refuse scatters comprised of fewer than nine cans. The take home—historic-era litter is prolific in the current project area. None of the newly recorded isolates are considered eligible for listing.

Table 12. L-300 Isolate Summary.

ISOLATE CATEGORY	NO.	%ERA	%TOTAL
PREHISTORIC			
Biface	2	4.2	0.9
Core/Tested Cobble	2	4.2	0.9
Debitage (1–2 flakes)	27	56.3	12.6
Simple Flake Tool	4	8.3	1.9
Small Lithic Reduction	2	4.2	0.9
Small SRL	11	22.9	5.1
Prehistoric Subtotal	**48**	**-**	22.3
HISTORICAL			
Automotive	1	0.6	0.5
Bottle	43	25.7	20.0
Bottle & Other (1 Bottle + 1 Can, Ceramic, or Tire)	5	3.0	2.3
Can (1–2 cans)	71	42.5	33.0
Ceramic	2	1.2	0.9
Insulator	11	6.6	5.1
Insulator & Pole	1	0.6	0.5
Insulator & Can	1	0.6	0.5
Jar	1	0.6	0.5
Post	2	1.2	0.9
Railroad	4	2.4	1.9
Road Marker	1	0.6	0.5
Small Refuse (3–9 cans and/or other single type)	21	12.6	9.8
Survey Marker	1	0.6	0.5
Table	1	0.6	0.5
Tool	1	0.6	0.5
Historical Subtotal	167	-	77.7
Total	**215**	**-**	**-**

CHAPTER 8. ELIGIBILITY AND MANAGEMENT RECOMMENDATIONS

Eligibility and management recommendations are incorporated into Tables 13–16. Table 13 lists all eligible sites (newly recommended or previously determined) and those with ineligible components or elements including those requiring further research. Ineligible sites and those with elements or components likewise requiring further research are in detailed in Table 14. Table 15 incorporates all sites wholly requiring further research, and Table 16 details sites that could not be re-located and are presumed destroyed.

No further management is recommended for all previously recorded/updated and newly recorded sites, or for those segments of extensive linears that intersect the project APE recommended ineligible for listing. Sites that were not relocated likewise require no further management. No further management is also recommended for the 215 isolates newly found during the current study (see Appendix E).

Temporary construction fencing is recommended for portions of all sites intersecting the current project APE that are recommended/determined eligible or for which further research is necessary to assess eligibility. For those sites requiring further research intersected by proposed access roads, the road margin should be fenced for protection beginning 100 feet before the site boundary and ending 100 feet after the site boundary. Otherwise temporary construction fencing should be placed around the APE-intersected boundaries of eligible sites, site components/elements, and those requiring further research to mitigate potential effects from proposed project work.

The buried site sensitivity assessment indicates that work areas modeled to have high to moderate sensitivity are all in the far western portions of L-300 and include, from west to east: (1) all of Location T-1225 N/T-1229 N; (2) the southern third of Location T-1225 Q/T-1229 M; (3) the first roughly one-kilometer start of the access road west of Location T-1225 L/T-1229 K; (4) a sliver of the northwestern portion of T-1225 L/T-1229 K; and (5) the southern one-third of Location T-1225 K. Excavations in these work areas should be monitored by a qualified archaeologist. As detailed in Chapter 7, two previously recorded campsites were newly recorded in Location T-1225 N/T-1229 N (i.e., EG-X7 and EG-X8); a previously recorded lithic reduction station is within the first roughly one-kilometer start of the access road west of Location T-1225 L/T-1229 K (i.e., P-36-026488 [no trinomial assigned]); and a new campsite (RB-X2) was found outside of the APE of the northwestern portion of T-1225 L/T-1229 K. PG&E has already taken steps to avoid effects to EG-X7 and EG-X8 by shrinking the area of Location T-1225 N/T-1229 N to within >10 meters of the boundaries of each site. The margins of the APE will be fenced to avoid inadvertent effects to these resources.

Tables 12-15 removed

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Cultural Resources Inventory and Site Evaluations in Support of the Proposed Hydrostatic Testing of Line 311, San Bernardino and Kern Counties, California

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May 2018 FINAL

Submitted to:
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California District Office
22835 Calle San Juan de los Lagos
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On behalf of:
Pacific Gas and Electric Company
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MANAGEMENT SUMMARY

Pacific Gas & Electric Company (PG&E) proposes to conduct hydrostatic strength tests for existing high pressure natural gas transmission lines denoted L-311. The project areas are mostly in San Bernardino County, crossing lands primarily administered by the Ridgecrest, Barstow, and Needles Bureau of Land Management (BLM) Field Offices. One staging area associated with the L-311 project area is in Kern County, just outside of Ridgecrest, California.

As the Federal Lead Agency for the project, the BLM required Class III cultural resources inventories of those portions of the project areas that had not been previously examined, or which had not been examined in a manner that reflects current standards, to meet Section 106 review and compliance obligations. They are also required National Register of Historic Places (National Register) evaluations of all resources which intersect the project's Area of Potential Effects (APE). The project's APE was designed in consultation with BLM to include a 50-meter buffer around the perimeters of each work location and a 15-meter buffer from either edge of access and bridge bypass roads.

This report addresses cultural resources that intersect the L-311 APE. National Register and California Register of Historical Resources (California Register) eligibility assessments, based on survey-level data are included. Fieldwork was completed by Far Western Anthropological Research Group, Inc., (Far Western) between February 16, and March 6, 2018. Prior to survey, the L-311 project area encompassed 30 consolidated work locations (i.e., staging areas, excavation areas, and laydown yards) and 21.4 discontinuous miles of extant access roads, composed of 526.4 total acres and extending north-south, roughly paralleling US Highway 395 between Boron, Randsburg, and Trona, California. As noted, a single staging area is in Kern County just outside of Ridgecrest, California. Based on preliminary findings, PG&E, with approval from BLM, removed nine of the consolidated work areas (ca. 46.5 acres) and associated access roads (ca. 77.6 acres), to avoid possible adverse effects to newly identified and previously recorded resources that intersected the original APE. Accounting for these adjustments, the L-311 APE currently stands at 402.6 acres.

A total of 40 new sites were found during survey and their National Register eligibilities were assessed, including two prehistoric resources, three multicomponent, two of unclear vintage, and 33 dating to the historic era. Another 14 previously recorded historic-era sites that intersected the L-311 APE were also revisited, updated, and assessed or re-assessed for National Register eligibility. A total of 133 isolated resources were also documented, including 13 of prehistoric vintage and 120 dating to the historic era.

Based on Far Western's limited (i.e., non-excavation and non-collections-based) assessment of site eligibility to the National Register and California Register, only one newly recorded site (EM-X9) is recommended eligible for listing. The site is associated with the Rand Mining District, likely incorporates a segment of the Randsburg Railway (CA-SBR-5731H) and has the potential to contribute significant information relating to aspects of technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy. As such, the historic-era component of this site is recommended eligible for listing under Criteria A and D; further research would be required to assess its eligibility under B and/or C. Although possessing little potential to preserve buried prehistoric archaeology based on GIS-based sensitivity modeling, the prehistoric component nonetheless retains the potential to significantly enhance understanding of regional prehistoric hunter-gatherer land-use organization, toolstone acquisition, and chronology, especially considering the rarity of prehistoric resources in the vicinity. The prehistoric component is therefore considered a contributing element of site eligibility under Criterion D.

The site area does not intersect any proposed work locations, but a proposed access road extending from US 395 to Location M does intersect the site area. None of the documented site elements are within the extant access roadway, which is itself not historical. However, two site loci (Loci 2 and 3; both historic-era debris scatters), two features (Features 4 and 6; a corral and barrel branding heater, respectively), and two piece-plotted artifacts (A9 and A10; a prehistoric biface and millingslab, respectively), have the potential to be impacted by off-road traffic (see site record in Confidential Appendix G). Far Western therefore recommends that efforts be extended to prevent off-road traffic. The road margin should be fenced for protection beginning 100 feet before the site boundary and ending 100 feet after the site boundary.

Nine newly recorded historic-era sites (i.e., EG-X6, EM-X1, EM-X3, EM-X6, EM-X8, EM-X10, SN-X1, SN-X8, and SN-X9), and the historic-era component of one multicomponent site (EM-X5) require further research, including archival studies and/or limited test excavation, to fully assess site eligibility. Of these 10 sites, one is a road (SN-X9), three are mining related (EM-X5, EM-X6 and EM-X8), three are historic-era refuse deposits (EG-X6, EM-X1, and SN-X8), one is a utility line (SN-X1), and two incorporate rock features (EM-X3 and EM-X10).

Three of these sites (EM-X3, SN-X8, and SN-X9) are in work areas or along access roads that have been removed from the project, therefore no further management is warranted at this time. Of the remaining seven sites, only the utility line (SN-X1) is within a work location (i.e., Argus LNG), but it is anticipated that work within this location will necessarily avoid this in-use utility line. All other newly recorded resources that require further research are within or overlap existing access roads. Thus, proposed work efforts will only have adverse effects on these resources if maintenance of these roads extends beyond the existing road prism. Effects can be limited by fencing-off resource areas intersected by access road APEs.

All other newly recorded sites, as well as all but one previously recorded site (i.e., SBR-7377H) and the project portions of two others (i.e., SBR-10316H and SBR-16756H) are considered ineligible for listing, or otherwise deemed non-contributing to resource eligibility. The recorded segment of a historic-era railroad grade intersecting the Argus LNG (i.e., SBR-8547H) is recommended ineligible for listing, but a newly documented segment (SR-X3) intersecting the northern buffer of Location T and an adjacent proposed access road will require further historical research to assess its contribution to site eligibility, or lack thereof. This resource should be flagged for avoidance. Although site SBR-10316H was previously determined eligible for listing, the portion within the current project area is not considered to be a contributing portion. Similarly, although currently unevaluated overall, that portion of SBR-16756H intersecting the A-C Staging Area is not considered significant and would not constitute a contributing element to resource eligibility. Sites KER-7738/SBR-13799H, SBR-13800H, and P-36-021450 were previously determined ineligible by BLM.

On the whole, SBR-7377H is eligible to the National and California Registers under Criteria A and D. However, the four new intra-site loci documented during the current project variably contribute to this eligibility. Further research is required to assess the contributions of SBR-7377H site areas EG-X32 and RB-X4, but EG-X33 is considered a non-contributing portion to the eligibility of the larger site. Since PG&E has removed Locations J and K south as well as the associated access road from the project design, no further management of these resources is warranted for the current project. If PG&E wishes to use the access road connecting the northern and southern portions of Location K, Far Western recommends fencing-off that segment of the nearby access road along the course of the extent of EG-X34, which probably represents a segment of the Randsburg Railway (SBR-5731H), and is a significant contributor under Criterion A

Finally, a clear majority (nearly 96%) of the L-311 APE intersects areas modeled to have the lowest or low potentials to preserve buried prehistoric archaeological material, limiting the potential for unidentified resources to be found during construction. Those work locations modeled to have high or the highest sensitivity include Location Z and the eastern portion of the Argus LNG. Otherwise, the western part of the Argus LNG and nearly all of Location Y incorporate areas modeled to have moderate potential for buried prehistoric archaeology. At minimum, the areas with high-highest sensitivity for the presence of buried resources should be monitored during construction.

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CHAPTER 1. INTRODUCTION

Pacific Gas & Electric Company (PG&E) proposes to conduct hydrostatic strength tests for existing high pressure natural gas transmission lines L-311 (Figure 1). The project areas are mostly in San Bernardino County, crossing lands primarily administered by the Ridgecrest, Barstow, and Needles Bureau of Land Management (BLM) Field Offices. One staging area associated with the L-311 project area is in Kern County, just outside of Ridgecrest, California.

The project areas are within or intersect lands managed by federal, state, and local agencies and thus require compliance with (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR § 800, revised 2004); and (2) the California Environmental Quality Act (Public Resources code, Section 21000 et seq., revised 2005), which mandates federal and California public agencies to consider the effects of projects on historic properties. As the Federal Lead Agency for the project, the BLM required a Class III cultural resources inventory of those portions of the project area that have not been previously examined, or which have not been examined in a manner that reflects current standards, to meet Section 106 review and compliance obligations. They also required National Register of Historic Places (National Register) evaluations of all resources which intersect the project's Area of Potential Effects (APE).

This report details the cultural resources that intersect the L-311 project APE. National Register and California Register of Historical Resources (California Register) eligibility assessments for these resources are also provided. Evaluations are based on survey-level data collected by Far Western Anthropological Research Group, Inc., (Far Western) between February 16, and March 6, 2018. Preliminary findings were supplied to BLM on March 23, 2018 (Byerly and Carpenter 2018), and to the PG&E cultural lead, Starla Lane, on March 27, 2018, with BLM approval.

Three to four crews of four to five personnel each, supervised by Far Western crew leads Eric Gingerich, Erik Martin, Steven Neidig, and Sarah Rice, completed all fieldwork, overseen by Principal Investigator Ryan M. Byerly. Crew members included: Tya Ates, Eric Hall, Dave Ingbar, Michele Maybee, Dave Mike, Ed Mike, Gene Romanski, Kyle Ross, Nick Smith, Mark Strother, Abigail Tirabassi, and Alexa Uberseder. Kimberley Carpenter served as Project Manager.

AREA OF POTENTIAL EFFECTS

The proposed strength test projects are described in detail in the Plan of Development documents submitted to the BLM by PG&E (CH2M 2017a, 2017b). In general, strength test activities will include excavations to access the pipe and test the equipment. Testing the equipment involves cleaning the pipes, filling them with water, pressurizing the pipe to detect leaks, and dewatering the pipes. Testing may also be accomplished by pressurizing with gas. Completing this work will entail the use of access roads, bypasses designed to avoid existing bridges, and work locations. Activities proposed for each work location include material/laydown, temporary excavations, and staging of equipment and supplies. Most of this work will occur within existing PG&E right-of-way where soils may have been previously disturbed. Some of the work may require temporary use of public and private land outside of the permanent PG&E right-of-way.

Use of work areas and maintenance of access roads has the potential to impact historic properties that meet the National Register or California Register criteria for significance. The APE therefore considers all project elements that could cause surface and subsurface disturbances, within and outside of the existing rights-of-way, which could impact any Historic Property present within, or immediately adjacent to, the APE. The project's APE was designed in consultation with BLM to include a 50-meter buffer around the perimeters of each work location and a 15-meter buffer from either edge of access and bridge bypass roads.

Figure 1. L-311 Project Extent.

In addition to the single staging area located in Kern County (outside of Ridgecrest), the L-311 project area extends north-south, roughly paralleling US Highway 395 (US 395) between Boron, Randsburg, and Trona, California. In all, the L-311 project area encompasses 30 work locations (i.e., staging areas, laydown yards, and excavation areas) and 21.4 discontinuous miles of extant access roads. A little more than 526 acres comprise the L-311 APE, which includes 50-meter peripheral buffers around work locations, and 15 meters off either edge of access roads and bridge bypasses (Table 1 and Confidential Appendix A). In the late stages of this project, specific work areas and associated access roads were dropped from the project. The dropped areas are noted as such in Table 1 and again in the Management Recommendations table presented in Chapter 8. The results of our work in the dropped areas are completely reported in the body of this document. These removals include nine consolidated work areas (ca. 46.5 acres) and associated access roads (ca. 77.6 acres). Accounting for these adjustments, the L-311 APE currently stands at 402.6 acres (Table 2).

Table 1. L-311 Project Work Locations.

LOCATION	LOCATION TYPE	ACRES	STATUS
A-C Staging	Staging	98.37	-
A	Excavation & Laydown	6.63	-
Argus LNG	Staging	10.68	-
B	Excavation & Laydown	3.17	-
C	Excavation & Laydown	5.47	-
D	Laydown	3.52	-
E	Excavation & Laydown	4.03	-
F	Excavation & Laydown	4.03	-
G	Excavation & Laydown	3.70	-
H	Excavation & Laydown	4.03	-
I	Excavation & Laydown	4.06	-
J	Excavation & Laydown	3.07	Removed from Project Post-survey
K (North & South)	Excavation & Laydown/Staging	13.73	K South Removed from Project Post-survey
L (North & South)	Excavation & Laydown	6.79	L North Removed from Project Post-survey
M [a]	Laydown	4.35	-
N	Excavation & Laydown	4.04	Removed from Project Post-survey
O	Laydown	2.74	-
P	Excavation & Laydown	4.04	-
Q	Excavation & Laydown	4.89	Removed from Project Post-survey
R	Excavation & Laydown	2.74	Removed from Project Post-survey
Ridgecrest LNG	Staging	13.41	-
S	Excavation & Laydown	6.30	Removed from Project Post-survey
T	Excavation & Laydown	5.08	-
U	Laydown	2.73	-
V	Excavation & Laydown	4.04	Removed from Project Post-survey
W	Excavation & Laydown	6.02	-
X (North & South)	Excavation & Laydown/Staging	8.08	X North Removed from Project Post-survey
Y	Excavation & Laydown	4.91	-
Z	Laydown	2.73	-
ZZ	Laydown	14.96	-
Total	**-**	**262.34**	-

Note: [a] An excavation area is 13 meters west of Location M.

Table 2. L-311 Area of Potential Effects Acreage Breakdown.

LAND OWNER	PRE-SURVEY APE	SURVEYED FOR CURRENT PROJECT	REMOVED FROM PROJECT POST-SURVEY	FINAL APE
Bureau of Land Management	4,254.75	1,867.91	1.19	4,253.56
Private/Unknown	1,044.25	630.86	5.22	1,039.03
Total	**5,299.00**	**2,498.77**	**6.41**	**5,292.59**

REPORT STRUCTURE

This report is divided into eight chapters, not including a forefront Management Summary. Chapter 1 introduces the project, and Chapter 2 presents an overview of the environmental context of the Mojave Desert, including a discussion of past and present conditions. Within that overview is a discussion of the potential of the project area to contain buried prehistoric archaeological deposits based on GIS modeling. Chapter 3 is an overview of the prehistory of the Mojave Desert as it is currently understood, a discussion of the ethnohistory of Native Peoples in the project area, and a summary of major historical (Euro-American) developments. In Chapter 4 we provide site definitions, records search and literature results, and expectations of resources to be found during the inventory, based on those results. Chapter 5 presents the eligibility criteria for the National Register and research designs for evaluation of prehistoric and historic-era resources. This is followed by a discussion of field methods (Chapter 6) and results (Chapter 7). The results chapter provides brief descriptions of each site and recommendations for National Register eligibility of those sites. Chapter 8 briefly summarizes eligibility recommendations for new and previously recorded sites. The report is followed by confidential appendices containing detailed project and results maps, site and isolate resource summaries and locations, new site records, and site record updates.

CHAPTER 2. ENVIRONMENTAL SETTING

MOJAVE DESERT ENVIRONMENT

The Mojave Desert lies between the Great Basin and Sonoran Desert sections of the Basin and Range Province and is characterized by internally drained basins situated between generally northwest-trending mountain ranges that follow fault lines (MacMahon 1997). The climate is arid, with average winter and summer temperatures ranging between 7 and 25 °C (45 and 77 °F), and average precipitation ranging between 76 and 203 millimeters (three and eight inches) per year, most of which (65–95%) falls during the autumn and winter. The remainder falls in short, intense summer monsoonal thunderstorms (MacMahon 1997; Miles and Goudey 1997; Rhode 2001).

Typical Mojave Desert fauna include bighorn sheep (*Ovis canadensis*); desert kit fox (*Vulpes velox*); coyote (*Canis latrans*); spotted skunk (*Spilogale gracilis*); spotted bat (*Euderma maculatum*); black-tailed jackrabbit (*Lepus californicus*); desert cottontail (*Sylvilagus audubonii*); pocket gopher (*Thomomys bottae*); antelope squirrel (*Ammospermophilus leucurus*); ground squirrel (*Spermophilus mohavensis*); kangaroo rat (*Dipodomys deserti*); desert woodrat (*Neotoma lepida*); little pocket mouse (*Perognathus longimembris*); white-footed mouse (*Peromyscus leucopus*); various birds of prey and owls, quail, roadrunner (*Geococcyx californianus*); desert tortoise (*Gopherus agassizii*); several varieties of rattlesnake; desert iguana (*Dipsosaurus dorsalis*); and chuckawalla lizard (*Sauromalus obesus*; Miles and Goudey 1997). Southern desert horned lizards (*Phrynosoma platyrhinos calidiarum*) are also present.

Common plants include creosote (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), Mormon tea (*Ephedra*), saltbush (*Atriplex*), brittlebush (*Encelia*), wolfberry (*Lycium andersonii*), goldenbush (*Ericameria*), range ratany (*Krameria erecta*), and bladdersage (*Scutellaria mexicana*), with blackbrush (*Coleogyne ramosissima*) and Joshua tree (*Yucca brevifolia*) at higher elevations (Rhode 2001:4). Saltbush and mesquite (*Prosopis glandulosa* var. *torreyana*) are present around playas and in proximate dunes, while catclaw acacia (*Senegalia greggii*), smoke tree (*Psorothamnus spinosus*), bladderpod (*Peritoma arborea*), jimson weed (*Datura wrightii*), and cheesebush (*Ambrosia salsola*) are prevalent in ephemeral washes (Rhode 2001:4).

MOJAVE DESERT PALEOENVIRONMENT

The Late Pleistocene mid-elevation zones of the Mojave Desert were cooler and wetter than present, dominated by single-leaf pinyon (*Pinus monophylla*) south of 36°N latitude until approximately 13,300 cal BP, when they were replaced by woodlands consisting of Utah juniper (*Juniperus osteosperma*), Joshua tree, and Mexican cliffrose (*Purshia mexicana*). These species persisted until 11,300 cal BP (Koehler et al. 2005). South of this latitude, pinyon woodland was more common at higher elevations. The Late Pleistocene/Early Holocene transition marked the gradual aridification of the Mojave and northward migration of desert thermophiles, prompting the steady departure of pinyon, followed by juniper. These were replaced by mesquite (*Prosopis juliflora*) communities including peach thorn (*Lycium cooperi*), Mojave sage (*Salvia mohavensis*), and cottontop cactus (*Echinocactus polycephalus*) at lower elevations (1,000 feet [305 meters] above sea level) around 9800–9400 cal BP (Koehler et al. 2005), although at least two periods of increased effective moisture between 12,400 and 11,400 cal BP and 11,300 and 8700 cal BP, coincident with periods of enhanced summer monsoons (Miller et al. 2010), may have hindered the spread of these species in some areas (Koehler et al. 2005; Spaulding 1990).

Sediment core data from Dry Lake in the San Bernardino Mountains (i.e., the southern geographic boundary of the Mojave Desert) point to sustained alluvial deposition between 9000 and 7500 cal BP fostered by generally wet, stormy conditions caused by an enhanced North American monsoon cycle that was strengthened by increased summer insolation (Bird and Kirby 2006:188). These data, including depressed total organic matter levels, elevated magnetic susceptibility profiles, and increased sand content, also indicate a 300-year "cold snap" between 8400 and 8100 cal BP within this enhanced monsoon cycle that is coincident with the widely recognized "8.2 ka event" (Bird and Kirby 2006:189–190). This climatic episode was characterized by cooler summer temperatures and increased winter precipitation caused by a sustained southerly jet stream that would have promoted persistent snow accumulation, glacial resurgence, and increased erosion in the San Bernardino Mountains (Bird and Kirby 2006:189; Owen et al. 2003). These conditions would have also encouraged highstands in desert playas.

After 7500 cal BP, proxies identify decreased summer precipitation, which would have conversely promoted desiccation of desert playas (Bird and Kirby 2006). The last sustained highstand at Owens Lake, for example, occurred at approximately 8800 cal BP followed thereafter by nearly 5,000 years of drought and near desiccation of the lake (Bacon et al. 2006). Sediment core data subsequently gathered at Silver Lake (Kirby et al. 2015) build on Bird and Kirby's (2006) high elevation paleoclimatic data from Dry Lake. Similar suites of paleolimnological markers identify a pronounced early Holocene wet period extending between roughly 11,700 and 7500 cal BP characterized by the presence of perennial lakes in the Central Mojave Desert followed by a prolonged mid-Holocene arid period extending between roughly 7500 and 4000 cal BP.

Creosote proliferates regionally around 7700 cal BP, but its dominance within Mojave Desert vegetation communities was not established until approximately 5400 cal BP (Koehler et al. 2005). That said, Rhode (2001) documents this plant in packrat middens in the south-central Mojave Desert by 11,700 cal BP, and its persistence in other middens until the Late Holocene. The presence of "King Clone" in Johnson Valley, which is estimated to represent upwards of 11,000 years of growth, also speaks to an earlier local presence of creosote (Vasek 1980). High elevation settings (>3,937 feet [1,200 meters] above sea level) were dominated by juniper-scrub woodland including Utah agave (*Agave utahensis*) by 5500–4800 cal BP, with the regional absence of pinyon during this time pointing to increased summer temperatures and precipitation (Koehler et al. 2005). This is also reflected by amplified alluvial fan aggradation across the Mojave Desert between roughly 6000 and 3000 cal BP (Miller et al. 2010). Shadscale (*Atriplex confertifolia*) replaced Utah agave at high elevations around 5100 cal BP, and Mojave sage likewise disappeared between 3700 and 2700 cal BP, stemming from regional surges in effective moisture at all elevations (Koehler et al. 2005). Modern vegetation communities were established by 650 cal BP.

Late Holocene Mojave Desert environments suffered periods of prolonged drought stemming from depressed sea surface temperatures, high insolation, and low volcanic aerosol concentrations, particularly during the Medieval Climatic Anomaly (MCA) between approximately 950 and 750 cal BP (AD 1000–1200; MacDonald et al. 2008; Mann et al. 2005). Over the last 2,000 years, for example, reconstructed Palmer Drought Severity Indices indicate significantly more dry years in the Mojave Desert during the tenth and thirteenth centuries, with significantly greater periods of extreme and severe drought during the tenth century (Cook et al. 2004).

The proceeding 300 years were characterized by increasingly wetter climates with significantly more wet years between the seventeenth and eighteenth centuries, corresponding to a well-recognized period of cooler temperatures (1–2 °C) and enhanced precipitation labeled the Little Ice Age (ca. 700–100 cal BP; AD 1250–1850). Available data point to particularly increased river flow and sustained lake levels across the Mojave Desert during the mid-seventeenth century due to these conditions (Miller et al. 2010), which probably attracted human and animal populations to regional oases.

BURIED PREHISTORIC SITE POTENTIAL (with Jack Meyer)

Archaeological sites must be identified to be avoided, sampled, or otherwise managed in accordance with regulatory requirements. This can be an especially difficult where archaeological sites have been buried by sediments, disturbed or destroyed by artificial cutting (e.g., agriculture, canals, ditches), or covered by artificial fill deposits (e.g., levees). It is also a practical problem for agencies and resource managers who are responsible for seeing that reasonable efforts are made to identify archaeological deposits in keeping with the regulatory requirements that govern the treatment of cultural resources and historic properties. Early detection of such sites can also help alleviate or prevent costly delays that often occur when unknown resources are discovered after earth moving has begun and late discovery protocols are necessary, particularly if human remains are present. For large or complex projects, early site identification can help minimize project costs and potential scheduling delays that often result when sites are "unexpectedly" discovered during construction.

As such, it is crucial that appropriate discovery and identification methods are used to help insure that late archaeological discoveries do not inadvertently affect project budgets or schedules (critical path), especially in any sensitive areas where the proposed earth-disturbances may be deep, extensive, or both. If an informed and integrated "good faith" approach is implemented and properly conducted, the issue of archaeological site identification can be effectively and efficiently managed to comply with existing regulatory frameworks and mandates. Thus, the need to locate unknown archaeological sites that may exist in the project area is a primary goal of the work plan proposed in the final section.

The following sections present: a brief outline of the geoarchaeological perspective, describes the factors that affect archaeological sensitivity, and the methods used to develop a refined archaeological sensitivity model for the current project area.

Geoarchaeological Perspective

According to Waters (1992:7–11), modern geoarchaeological research has three main objectives: (1) place archaeological deposits in their temporal and stratigraphic context; (2) understand natural site formation processes; and (3) reconstruct the paleolandscape. Understanding the age of different landforms is first-order geochronology (Waters 1992), a fundamental step in discerning where the archaeological record is likely to be buried, and where cultural remains deposited over the entire span of human occupation may be preserved on or just below the modern ground surface.

A working premise of this perspective is that the archaeological record is inherently biased due to the processes responsible for landscape evolution. Older archaeological deposits are frequently under-represented at the surface of the modern landscape due to cyclical periods of erosion and deposition during the Holocene (<11,500 cal BP). These geomorphic processes are well expressed in the region where sediments from the uplands were transported to the valley lowlands, where they formed alluvial fan, floodplain, and wetland deposits.

Prehistoric Site Sensitivity

This section describes the rationale used to estimate the potential for buried archaeological resources in the project area. At a general level, it is relatively easy to predict that buried archaeological sites will be found in Holocene-age depositional landforms or below artificial fill deposits. Predicting exactly where they are located, however, can be a more difficult task. For archaeologists to rigorously investigate prehistoric site distributions, reconstruct how prehistoric populations adapted to a changing landscape, and model the decision-making processes that underlay settlement and subsistence choices, it is necessary to reconstruct paleogeography and paleoecology. Such a reconstruction then provides a solid basis for refining predictive models of where sites are most likely to be located (a key factor in buried-site potential modeling), and it also provides insights into diachronic changes in settlement patterns and subsistence strategies.

Studies throughout central and southern California demonstrate that repeated cycles of erosion, deposition, and landscape stability occurred across this broad region during the Latest Pleistocene and Holocene (e.g., Meyer 1996; Meyer and Rosenthal 1997, 2008; Meyer et al. 2010; Rosenthal and Meyer 2004a, 2004b). Due to the episodic nature and timing of these processes, the modern ground surface is often composed of a variety of different landforms that range from almost modern to tens of thousands of years in age. Because the existing geologic maps of the project area place these landforms into broad or poorly defined temporal groups, it was necessary to assess the age and refine the extent of the surface deposits so that landforms without the potential for buried archaeological deposits are clearly distinguished from those that possess the potential to contain them.

As the primary goal of the sensitivity modeling is to identify those portions of the landscape with a potential to contain buried archaeological sites—i.e., deposits that cannot be recognized through traditional pedestrian survey—it is necessary to identify segments of the landscape that developed during the span of human occupation in North America, roughly the last 15,000 years (e.g., Goebel et al. 2008). Segments of the surface landscape that developed prior to human colonization of North America obviously cannot contain buried archaeological deposits (Rosenthal and Meyer 2004a, 2004b). With this basic understanding, the potential for buried archaeological deposits can be narrowed to Holocene landform segments, allowing older portions of the landscape to be confidently excluded from further consideration.

Landform Age and Site Potential

To assess the potential for buried sites, it is first necessary to have a relatively accurate map of the age of deposits and landforms that make up the modern ground surface. To do this, we analyzed existing geologic and soils data, along with radiocarbon evidence, to improve the spatial and temporal resolution of surface landforms mapped in the project area. Refined age assignments were based on relative soil development, landscape position, cross-cutting relationships, and radiocarbon dates associated with the same soil types, where available. Similar soil types were then combined into specific age groups, based on major climatic periods, to create a surface landform-age map.

The main working assumptions underlying this model are: (1) archaeological sites are not buried within landforms that developed prior to human colonization of the region around 13,500 cal BP (Rosenthal and Meyer 2004a, 2004b); (2) the potential for buried archaeological sites generally increases as the age of the surface landform decreases; and (3) the density of human populations increased over time, as did the potential number of archaeological sites on the landscape. Stated differently, the potential for older landforms to contain buried sites is lower than it is for younger landforms because the amount of time for human occupation was shorter for older landforms compared to the younger ones. As such, formerly stable land surfaces buried late in time have a higher probability of containing archaeological material than those buried earlier in time. With these assumptions in mind, the age differences between younger depositional landforms can be used as a relative measure of the potential (i.e., probability) for buried archaeological sites.

Site Location and Distribution Patterns

Prehistoric archaeological sites are not distributed randomly throughout the landscape but tend to occur in specific geo-environmental settings (Foster et al. 2005:4; Hansen et al. 2004:5; Pilgram 1987; Rosenthal and Meyer 2004a). For example, the precise location of prehistoric settlements is often dependent on a variety of environmental characteristics, such as proximity to water, topographic setting, and past distributions of important plant and animal foods, which made some locations more attractive or unfavorable for past human use or occupation. Thus, the potential for buried sites can be greatly over-estimated in some areas and underestimated in others without reasoned consideration of how the environment influence human settlement decisions in the past.

It is well known for instance, that prehistoric occupation sites are most often associated with relatively level landforms that occur near perennial streams, especially those located at or near the confluence of two or more channels (Pilgram 1987:44–47), and near water sources such as lakes, creeks, sloughs, and wetlands where plant and animal populations are generally more diverse and concentrated.

Distance-to-Water Factor

Due to the strong correspondence between the location of water and archaeological sites in the region, the position of the natural stream channels that appear in the 1930 air photos were plotted in GIS and used to model the "distance-to-water" as an archaeological sensitivity factor within the project area. Basically, areas located 150 meters or less from a stream or lake are considered to have the Highest sensitivity. From there, sensitivity declines for areas that lie at progressively greater distances away from water up to 1,200 meters, at which point the sensitivity is modeled as Lowest. The distance-to-water factor was calculated in GIS and integrated with the surface landform-age to refine the buried site potential model across the project area.

L-311 Buried Prehistoric Site Sensitivity

Modeled prehistoric site sensitivity relative to L-311 project areas are reflected in the maps series presented in Confidential Appendix B. Table 3 outlines the APE acreages encompassing the various qualitative levels of sensitivity. A clear majority (nearly 96%) of the original L-311 APE intersected areas modeled to have the lowest or low potentials to preserve buried prehistoric archaeological material. Post-survey adjustments did not much alter this schema, and only removed APE acres intersecting those areas modeled to have the lowest sensitivity for buried prehistoric archaeology. Those work locations modeled to have high or the highest sensitivity include Location Z and the eastern portion of the Argus LNG. Otherwise, the western part of the Argus LNG and nearly all of Location Y incorporate areas modeled to have moderate potential for buried prehistoric archaeology.

Table 3. L-311 Buried Prehistoric Site Sensitivity.

Sensitivity Level	Original Acres	%Total	Adjusted Acres	%Total
Highest	4.47	0.85	4.47	1.11
High	5.03	0.96	5.03	1.25
Moderate	13.92	2.64	13.92	3.46
Low	18.62	3.54	18.62	4.63
Lowest	484.42	92.01	360.59	89.56

CHAPTER 3. CULTURAL CONTEXT

MOJAVE DESERT PREHISTORY

The following is based on the prehistoric chronologies presented in Warren (1984) and Warren and Crabtree (1986), but incorporates the broader epochal divisions cited in Sutton et al. (2007). It draws heavily from work at China Lake, Fort Irwin, aboard the Marine Corps Air Ground Combat Center (MCAGCC), and in the Mojave National Preserve (Basgall 2000; Byrd et al. 2011; McGuire et al. 2015; Ruby et al. 2010); it was adapted directly from Byerly and Byrd (2018), with minor modification, and includes excerpts from McGuire et al. (2015). Geologic era divisions are based largely on Walker et al. (2012), who draw their chronology from well-supported global climatic events.

As stressed by Byrd et al. (2011), among others (Basgall 2000), Mojave Desert cultural chronologies (Figure 2) are highly varied due to the paucity of reliable dates, and the insecure temporal and typological affiliation of many projectile points. In fact, most Mojave Desert technologies seem to have extensive temporal ranges that significantly overlap one another. The chronological references herein (Sutton et al. 2007:235) should thus be considered tenuous and applied only very generally.

Late Pleistocene (>11,700 cal BP)

The earliest widespread archaeological complex in North America is Clovis. Although debate wages regarding the antecedent(s) of Clovis lithic technology (e.g., Goebel et al. 2008; Stanford and Bradley 2012), increasing numbers of sites that pre-date the Clovis timeframe (Waters et al. 2011:1602) suggests that these hunter-gatherers were not the first inhabitants of the continent. Indeed, sites like Monte Verde (Chile), the Schaefer and Hebior sites (Wisconsin), Meadowcroft Shelter (Pennsylvania), Page-Ladson (Florida), and the Debra L. Friedkin Site (Texas), there is now convincing evidence for occupation of the Americas between about 16,000 and 14,000 cal BP, about 2,000–3,000 years earlier than Clovis (e.g., Gilbert et al. 2008; Goebel et al. 2008; Waters et al. 2011). Pre-Clovis sites have been reported in the Mojave Desert, but none has withstood thorough scientific review (Erlandson et al. 2007). Better evidence seems to exist in the northern Great Basin, where assays on an arguably human coprolite from Paisley Cave (ca. 14,200 cal BP; cf. Sistiaga et al. 2014) pre-date the earliest Clovis dates by nearly 1,000 years (Gilbert et al. 2008; Jenkins et al. 2012).

Clovis

Clovis projectiles are lanceolate and concave-based, with distinctive bifacial basal fluting. They date to between 13,350 and 12,700 cal BP in the Great Plains and Southwest, although Waters and Stafford (2007) substantially, and controversially (Haynes et al. 2007), trim this range to between 12,900 and 12,700 cal BP. Prasciunas and Surovell (2015:33) further question this tighter range, noting that their demographic models indicate that the small sample of sites used by Waters and Stafford (2007) is not sufficient to accurately account for the true duration of a Clovis colonization, let alone the age range of Clovis technology.

Whatever the precise temporal span of the Clovis complex, it is thought to signal the Late Pleistocene presence of small groups of highly mobile hunter-gatherers in North America that preyed upon a few now mostly extinct megafaunas, although ideas regarding their actual dietary range, among most other aspects of their lifeways, remain highly contentious. This is particularly so in the Great Basin and Mojave Desert where Clovis and other fluted projectiles are uncommon and most often found as isolated artifacts (Basgall 1993, 2000; Byerly and Roberson 2015; Goebel et al. 2011; Grayson 2011; Rondeau et al. 2007; Tetra Tech and Far Western 1999). Those from the Sunshine Locality are, for example, smaller and thinner than "classic" Great Plains and Southwest Clovis forms, date younger, and are indeed more Folsom-like in character (Beck and Jones 2009, 2010).

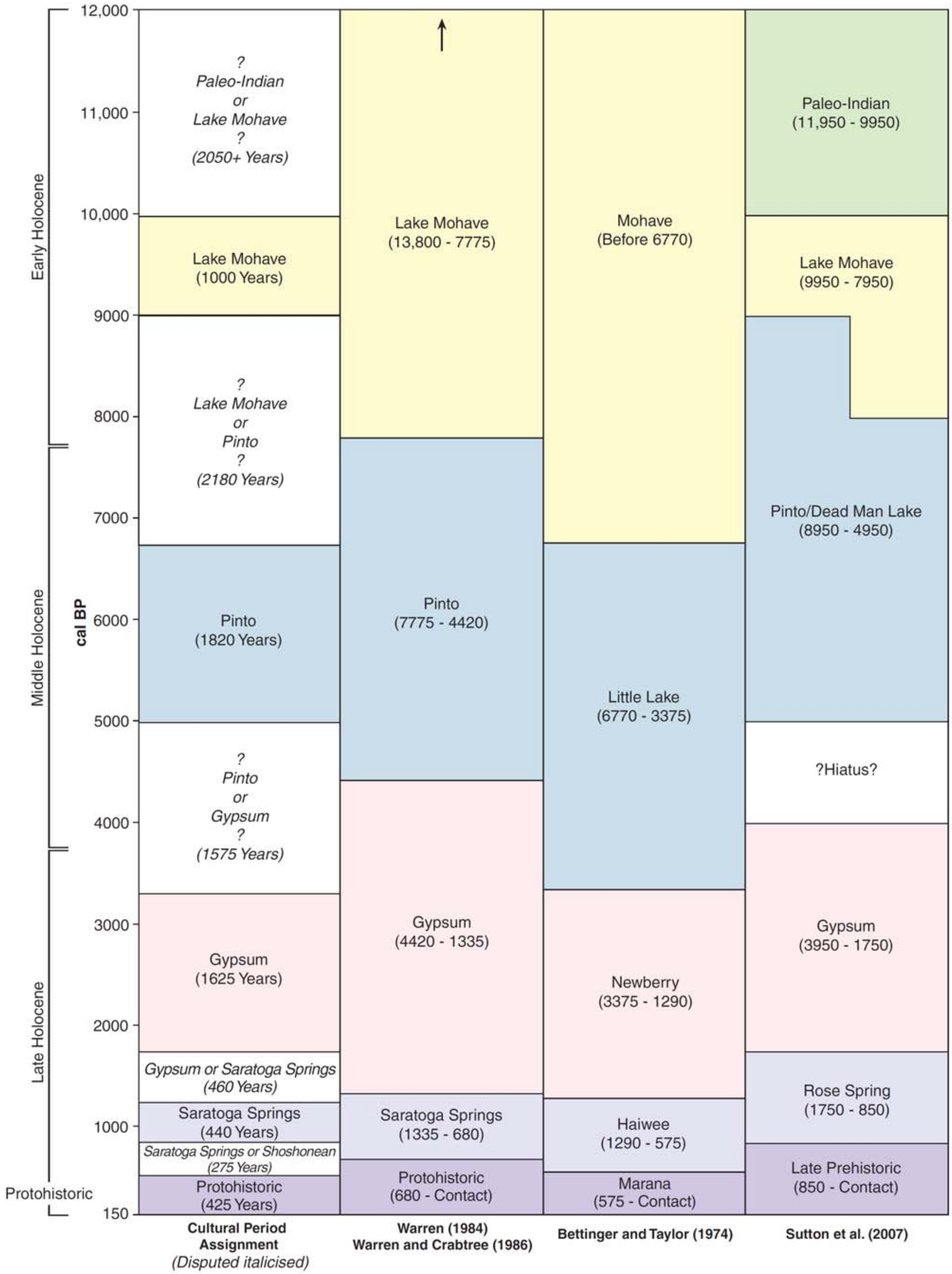

Figure 2. Prehistoric Cultural Chronologies for the Mojave Desert (from Byrd et al. 2011:46).

Fluted point concentrations have been found in California but dated Clovis-aged components containing fluted projectiles are currently unknown in the state (Rondeau et al. 2007; cf. Rondeau 2015 regarding other aspects of Clovis technology in western North America), or elsewhere in the Mojave Desert and southern Great Basin. Basally thinned and edge-ground concave-base points (cf. Great Basin Concave Base, Komodo Concave Base, Black Rock Concave Base) are more common at early sites near China Lake, but their temporal and cultural relationship to Clovis points remains unknown. Notably, China Lake Basin is one of the few localities in the Mojave Desert to regularly produce both early fluted and non-fluted concave-base points (e.g., Basgall 2007a, 2007b; Byrd 2006, 2007; Davis 1978; Giambastiani and Sprengeler 2010; Rosenthal et al. 2001; Tetra Tech and Far Western 1999).

Basgall and Hall (1991; see also Basgall 1988, 2007a) have shown that concave-base and stemmed points pattern differently across the landscape and are typically made of different materials, suggesting they are, indeed, part of separate chronological or cultural traditions. In contrast, Beck and Jones (2010) have argued that western stemmed and concave-base points are related culturally and chronologically based on a broad assessment of early site assemblages in the northern and eastern Great Basin. Regardless, most available data seem to point to the more prolific stemmed point tradition(s) as the earliest enduring cultural presence in the Great Basin and Mojave Desert (Basgall 1993; Beck and Jones 2010; Erlandson and Braje 2011, 2012; Jenkins et al. 2012; Sutton et al. 2007; cf. Goebel and Keene 2014).

Early Holocene (ca. 11,700–8200 cal BP)

Research in the Channel Islands suggests that Early Holocene stemmed point traditions may have ties to Late Pleistocene lithic technologies in Asia (Erlandson and Braje 2012; Erlandson et al. 2011; cf. Jenkins et al. 2012). Specifically, stemmed and tanged/barbed projectiles, associated with bifacial crescents that are commonly found with stemmed points in Early Holocene sites throughout the Great Basin and Mojave Desert, are reminiscent of Jomon projectiles from coastal Japan dated to around 14,500 cal BP. Assays from these Channel Islands localities, in concert with early dates from the Great Basin, point to at least a Younger Dryas (ca. 12,920–11,600 cal BP) timeframe for the presence of stemmed point technologies in western North America (Goebel and Keene 2014; Goebel et al. 2011).

Conversely, Jenkins et al. (2012) view stemmed point traditions as, much like some view Clovis (Waters et al. 2011; cf., Stanford and Bradley 2012), an independent North American technological development with no clear ties to known Old World flaked stone traditions. In this vein, the "Western Stemmed Tradition" developed in far western North America just prior to or in sync with Clovis, the latter of which arose in the Great Plains or perhaps Southeast. Available dates from Paisley Cave securely place the earliest stemmed points in strata dating between roughly 13,200 and 12,900 cal BP (Jenkins et al. 2012:224), predating the Channel Islands assays by up to 1,000 years (cf. Goebel and Keene 2014).

Goebel and Keene (2014), who conducted a rigorous review of Great Basin stemmed point and radiocarbon date associations, alternatively argue that stemmed point traditions consistently post-date "classic" Clovis-aged sites, except for components at Smith Creek Cave, Nevada, Paisley Cave, Oregon, and Bonneville Estates Rockshelter, Utah, where ranges are coeval. Additional comparative analyses by Reid et al. (2015) also found no evidence for the contemporaneity of Western Stemmed and Clovis points among early sites in eastern Washington and southern Idaho, but rather consistent chronological priority of Clovis over Western Stemmed forms. As noted, however, Clovis point/radiocarbon date associations are unknown in the southern Great Basin, much less in the Mojave Desert, frustrating the placement of regional Clovis presence within the broader known Clovis timeframe, and certainly doing the same regarding its association with stemmed point technology, or lack thereof (e.g., Goebel and Keene 2014).

Stemmed point morphologies vary regionally across western North America, although it is unclear how much of this variability is related to simple re-working (Beck and Jones 2009). The named stemmed forms most often found in the Mojave Desert include Lake Mojave and Silver Lake types.

Lake Mojave and Silver Lake

Lake Mojave projectiles are lanceolate and possess long contracting stems and narrow shoulders, while Silver Lake points are typically smaller, have more pronounced shoulders, and exhibit distinctive convex bases (Warren and Crabtree 1986). The great majority of Lake Mojave-era sites are surface manifestations, confounding efforts to develop a radiocarbon chronology. Beck and Jones (1997, 2010; see also Willig and Aikens 1988) have compiled radiocarbon dates from Early Holocene stemmed-point sites in the northern and central Great Basin, demonstrating that most of these assemblages predate about 9500 cal BP and may be as much as 13,200 years old (cal BP); partially overlapping in time with the Clovis complex. Dates range between 11,670 and 9450 cal BP in the few assayed contexts at Fort Irwin and China Lake (Sutton et al. 2007:235) and may extend to as late as 7400 cal BP, overlapping dates for the Pinto technological complex (Basgall 2000). Stemmed projectiles are frequently associated with leaf-shaped bifaces, bifacial crescents, distinctive well-formed unifaces, and a variety of simple flake tools and larger core/cobble tools often made from non-local toolstones. These points also often exhibit intensive wear and re-sharpening (Basgall 2000; Warren and Crabtree 1986).

Although a growing body of research has identified Lake Mojave sites in a wide range of habitats in the Mojave Desert (Basgall 1993; Basgall and Hall 1994; Basgall et al. 1988; Rosenthal et al. 2001; Sutton et al. 2007), these sites continue to be most concentrated in pluvial lake basins, near fossil springs, and along major river channels. The few, and notably sparse, Lake Mojave and Silver Lake archaeofaunal assemblages are dominated by small mammals and reptiles, although larger mammals (e.g., deer, sheep) are sometimes represented, or indeed more common (e.g., Basgall 1993). The presence of sparse milling gear at some sites also implies diets incorporating plant foods (Basgall 2000), but the extent to which plant foods were relied upon during the earliest time periods remains of interest (Elston et al. 2014).

Warren (1984), citing a preponderance of stemmed point assemblages on near-playa landforms, fosters the idea of a Western Pluvial Lakes Tradition, wherein Early Holocene hunter-gatherers are primarily thought to have resided around wetland environments adjacent to lake systems, and there dedicated much of their subsistence focus on artiodactyls. Basgall (2000) conversely hypothesizes that this spatial relationship is more a factor of landscape formation processes, such that exposure of ancient surfaces, and thus also the presence of ancient assemblages, is most probable in geomorphologically active contexts like those near now desiccated but still ephemeral lakes. Basgall (2000) does not reject the idea that Early Holocene hunter-gatherers inhabited basin wetlands, but rather posits that lake edges were among a variety of resource patches preferentially utilized over short intervals throughout successive generations, and perhaps over hundreds or thousands of years, resulting in palimpsest deposits.

Along these lines, Sutton et al. (2007) maintain that the unpredictable nature of Early Holocene environments prompted high residential mobility among Mojave Desert hunter-gatherers. Following this model, foragers needed to continuously monitor resource productivity among the diverse resource patches created by such instability to take optimal advantage on a patch-by-patch basis (Byrd et al. 2009:137). Goebel et al. (2011) likewise see evidence of high residential mobility among Early Holocene hunter-gatherers in the Great Basin, albeit based on data from only a few dated rockshelter components. This perspective does not, however, fully account for the vast numbers of undated stemmed point localities that may hint at a substantial local residential pattern in parts of the Great Basin (Duke 2011).

Basgall (2000) argues that stemmed point technology was largely curated. The diversity of raw materials incorporated into some Lake Mojave and Silver Lake assemblages, other than those in the Coso

Basin (Eerkens et al. 2007), certainly points to long distance travel or exchange, but it is equally apparent that Early Holocene hunter-gatherers often procured fine-grained volcanic material from vein and pavement quarries for local uses (Byerly 2013; Byrd et al. 2009:128; Giambastiani 2010).

Middle Holocene (ca. 8200–4200 cal BP)

Pinto is the hallmark of Middle Holocene human occupation of the Mojave Desert and southern Great Basin, although the tradition clearly has its origins in the Early Holocene (Sutton et al. 2007).

Pinto

The Pinto complex includes short, stemmed, indented-base, and split-stem projectiles. Dated components at Fort Irwin and MCAGCC range between 11,110 and 6030 cal BP, although assays most often fall between 9850 and 7750 cal BP (Byrd et al. 2009). Sparse other data imply that this complex may also extend to as late as 4500 cal BP (Byrd et al. 2009; Sutton et al. 2007:235). Obsidian hydration assays on projectiles from Fort Irwin and China Lake indicate temporal overlap with both Lake Mojave and Gypsum points, but mean micron ranges generally fall between these complexes (Byrd et al. 2011:53).

Pinto assemblages are characterized by somewhat reduced toolstone diversity and higher frequencies of milling gear (Byrd et al. 2009) than those from Lake Mojave and Silver Lake sites, perhaps reflecting more concentrated foraging ranges and implying greater exploitation of plant resources (Basgall 2000; Basgall and Hall 2000; Sutton et al. 2007). Basgall (2000) views regional Pinto settlement and resource exploitation patterns like those of Early Holocene hunter-gatherers (i.e., stable but seasonally mobile), interpreting the preponderance of expansive, multi-loci Pinto sites at Fort Irwin as evidence of persistent re-occupation of certain preferred plant resource patches in lowland basins. This contrasts with Warren's (1984) hypothesis that Pinto groups retreated to upland habitats and abandoned basin environments due to climatically induced resource restraints. Data from China Lake (Hildebrandt and Ruby 2003) that demonstrate Pinto dominance over other projectile forms (particularly Lake Mojave) in higher elevation settings support Warren's (1984) contention in that region. Whatever settlement-use systems best characterize Pinto patterns, it is probable that throughout the Middle Holocene, human diet breadth expanded to include more vegetal resources (e.g., seed grasses), perhaps in response to wide-scale, although certainly variable, aridification (Grayson 2011).

Nonetheless, recognizing components dating to this period in the Mojave Desert poses a challenge because few one-to-one correspondences between Pinto time markers and directly dateable components exist. Indeed, Pinto series points are often shoehorned into this period but, as any number of researchers have pointed out, they regularly co-occur with older-dating stemmed series points throughout the Mojave Desert (Basgall 2000:130; Schroth 1994; Vaughn and Warren 1987). One site test excavated aboard MCAGCC on the southwestern margin of the Amboy Crater lava flow (i.e., SBR-9415), for example, produced both Pinto and Stemmed points alongside a Lake Mojave-era radiocarbon date, while another (SBR-9421) also yielded Pinto and Stemmed points with obsidian bearing Pinto-era hydration rims (Basgall et al. 2002; Roberson and Byerly 2015). However, two others (SBR-9418 and SBR-9422) were found to have only Pinto projectile points with Pinto-era obsidian.

Late Holocene (ca. 4200 cal BP–Modern)

Higher degrees of effective moisture took hold over large portions of the Great Basin at the beginning of the Late Holocene (Wigand and Rhode 2002). This period is seen by many researchers working in California and the Great Basin as having been a cultural florescence with the first regular occupation of semi-sedentary villages and the development of settlement hierarchies, the rise of specialized obsidian production for inter-regional exchange, and a proliferation in the creation of rock art, especially in the Coso

Range where the frequency of representational elements reached densities far greater than anywhere else in North America. Many residential deposits dating to the early Late Holocene contain more robust signatures of habitation than was the case earlier in time, including substantial midden development, house floors, human interments, and subsistence remains indicative of multiseason occupations (e.g., Rogers and Yohe 2014; Whitley et al. 1988; Yohe 1992).

The Late Holocene record of the Mojave Desert is often broken into three cultural periods, including Gypsum, Saratoga Springs, and Shoshonean (Warren 1984), although Sutton et al. (2007) prefer the labels Gypsum (ca. 3950–1750 cal BP), Rose Spring (ca. 1750–850 cal BP), and Late Prehistoric (ca. 850 cal BP-colonialization). Within this framework, Gypsum assemblages are associated with Gypsum, Elko, and/or Humboldt variant dart points; Saratoga Springs sites are marked by Rose Spring, Saratoga Spring, and Eastgate arrow points and pottery from or reminiscent of that from the Colorado River area; and Shoshonean assemblages include Desert Side-notched and Cottonwood arrow points as well as an array of locally and non-locally produced brownware pottery (Sutton et al. 2007; also see Schaefer and Daniels 2010).

Gypsum, Humboldt, and Elko

The Gypsum complex includes Gypsum, Humboldt, and Elko projectile points, and generally dates between approximately 4500 and 1400 cal BP (Byrd et al. 2009), although Humboldt and Elko forms have loose inter-regional temporal bounds that extend beyond this timeframe. This diversified Late Holocene complex represents a major shift in lithic technology. Whereas earlier traditions utilized a diversity of toolstones, including fine-grained volcanic, for projectile manufacture, Gypsum assemblages are dominated by cryptocrystalline silicates or quartzes (Byrd et al. 2009). Large pavement quarries at Fort Irwin, for example, were exploited to manufacture thin, transportable bifaces, and most off-quarry sites include high frequencies of almost exclusively biface-reduction and thinning debris. Although ground stone is occasionally included in these lithic scatters, little other activity is evidenced, fostering the idea among some researchers (e.g., Basgall 2000; Basgall and McGuire 1988) that Gypsum settlement-use systems were characterized by high residential mobility.

Byrd et al. (2009) alternatively argue that available lithic tool data from Fort Irwin point to high residential stability, with shifting emphasis on landscape use. They see this area as a hinterland in hunter-gatherer resource acquisition ranges that was only visited during long-distance forays (presumably to hunt artiodactyls) from larger residential bases to procure material and manufacture transportable bifaces for weapon production and/or trade. From this perspective, these areas were not otherwise extensively capitalized for other resources as intensively as earlier and later in the record. Inherent in this hunting model is male-centered show-off behavior for prestige, with food gathering at larger residential bases near resource-rich water sources (e.g., the Mojave River) off-setting the costs of this high-risk enterprise (Byrd et al. 2009; Hildebrandt and McGuire 2002; McGuire and Hildebrandt 2005).

Gypsum projectile points are well-shouldered and possess a contracting stem. Humboldt bifaces are lanceolate and un-shouldered and display a spectrum of basal morphologies ranging from slight indentations to deep concavities (Garfinkel and Yohe 2002). Ambiguities exist regarding the temporal span of the Humboldt form and its use, owing largely to a paucity of securely dated contexts. Among obsidian Humboldt bifaces from the Mono Basin, Owens and Rose valleys, and those sourced to the Coso Range, narrow-based (i.e., <24 millimeters) forms appear to have been used primarily as dart points between approximately 5950 and 2450 cal BP. Basally wider varieties (i.e., ≥24 millimeters) are conversely thought to have been multi-purpose hunting and butchering tools, and tend to be in younger contexts (ca. 2450–1150 cal BP), although evidence for their continued use as projectiles (e.g., impact fractures) also exists (Garfinkel and Yohe 2002).

Elko projectiles found in the Mojave Desert typically include near-straight, slightly concave, and sometimes convex-based Elko Corner-notched forms, as well as distinctive Elko-Eared varieties, possessing concave bases with laterally flared basal projections. These points have been variably confined to between 3750 and 1250 cal BP (Bettinger and Taylor 1974) and 3500 and 1200 cal BP (Thomas 1981), although more recent obsidian hydration studies in Owens Valley and the Coso Basin suggest a greater antiquity.

Gilreath and Hildebrandt (1997) found distinctive temporal patterns associated with Elko projectile thickness at Coso. Those fewer than 6.5 millimeters in maximum thickness dated to between 3400 and 1600 cal BP, consistent with earlier estimates, while those with maximum thickness greater than or equal to 6.5 millimeters displayed wider hydration rim ranges overlapping with Pinto and Lake Mojave assays (Gilreath and Hildebrandt 1997). Larson (2009) likewise discovered wide micron ranges among the Elko projectiles collected from his work along the Owens River. These dated between 7500 and 3500 cal BP, averaging around 6100 cal BP, regardless of thickness (Larson 2009).

Saratoga Springs and Shoshonean

Small corner-notched Rose Spring and Eastgate-series points mark the Rose Spring or Saratoga Springs Period (ca. 1325–680 cal BP). These projectiles are thought to signal the incorporation of bow-and-arrow technology, attendant with shifts in hunter-gatherer adaptations coincident with changing climates (e.g., the MCA).

The first appearance of bow-and-arrow technology in the region is a topic of ongoing interest and debate (Yohe 1998). Age estimates, largely based on arrow fragments from a few variably well-dated rockshelter and cave deposits, range between roughly 5150 and 1230 cal BP (Yohe 1998). Yohe (1998) posits that bow-and-arrow technology was firmly rooted in the adaptive milieus of Mojave Desert hunter-gatherers by approximately 1480 cal BP, citing evidence from debitage analysis and obsidian hydration dating of artifacts from the Rose Spring type site. However, these data also indicate that large multi-purpose bifacial knives and thrusting implements (i.e., Humboldt bifaces) continued to be utilized until around 1350 cal BP. Yohe (1998) further maintains that atlatl technology may have likewise persisted until 450 cal BP, though other researchers do not subscribe to that position.

Madsen (1986) has argued that this innovation increased hunting efficiency, resulting in a depletion of large game within upland areas triggering a shift to pinyon exploitation, and indeed declines of bighorn sheep and other large game are observed at this time in regional faunal assemblages (Hildebrandt and McGuire 2002:238; McGuire et al. 2007:360). This potential over-exploitation of large game, particularly bighorn sheep, co-occurs with declines in Coso-style rock art occur at around 900 cal BP. More recently, Bettinger (2015) has identified the shift to bow-and-arrow as having a cascading effect that led to an increased reliance on pinyon, and ultimately to the privatization and storage of food, particularly pinyon and small seeds in the Owens Valley region. Bettinger demonstrates how the bow-and-arrow increased overall hunting efficiency and argues that the bow-and-arrow allowed hunters to individually acquire and distribute a shared public resource (meat) which, in turn, discouraged claims to the pinenut stores their wives had accumulated for private use. In this sense, a shift in hunting technology is intimately linked to the rise of intensive pinyon exploitation.

Ideas vary regarding how much of an impact Late Holocene drought had on the short- and long-term desert adaptations of hunter-gatherers in western North America, particularly during the MCA (Jones et al. 1999; cf. Basgall 1999; Bettinger 1999). Jones et al. (1999; also see Jones and Schwitalla 2008) argue that long-term and frequent drought episodes between roughly AD 600 and 1500 had dramatic effects on hunter-gatherer lifeways from coastal California to the Colorado Plateau. In the Mojave Desert, these effects included depressed utilization of local environments due to destabilization of biotic communities; forced congregation of hunter-gatherer populations around more stable, or at least climate resistant, water sources (e.g., Lake Cahuilla); and attendant competition for food resources (Jones et al. 1999). They, among others (Moratto 2012) see these shifts as critical factors in the apparent collapse of trans-Sierran obsidian conveyance systems after 675 cal BP (AD 1275). Basgall (1999), and to some degree Bettinger (1999), conversely think that MCA climatic fluctuations had little noticeable effect on the day-to-day operations of Late Holocene hunter-gatherers, and that apparent strategy shifts were related more to population growth and economic intensification (Jones and Schwitalla 2008).

It is nonetheless widely accepted that, whatever the root cause, the Saratoga Springs Period is characterized by resource intensification (Byrd et al. 2011), much of which was directed toward seed-processing. Regionally, milling gear is most prolific at sites post-dating 1300 cal BP, peaking after 650 cal BP, when it is assumed that artiodactyl population densities decreased enough due to overhunting and/or drought (e.g., Janetski 1997) to warrant a primary focus on plant resources (e.g., green-cone pinyon) and smaller game (Garfinkel 2007; Gilreath and Hildebrandt 1997). This intensification of subsistence economies may have included the incorporation of domesticates (e.g., corns, beans, and squash) and maintained wild species. However, these were likely confined to areas directly proximate to the Colorado or Mojave Rivers, and it is more probable that local intensification took the form of mesquite, pinyon, agave, tortoise, and lagomorph procurement and processing (Byrd et al. 2011).

After approximately 950 cal BP multiple groups, including Ancestral Puebloans from the Virgin and Muddy River areas in the east, Numic speakers from the western Mojave, and Patayan from the Colorado River variously occupied the Mojave Desert to exploit and trade its resources, including obsidian and turquoise, as well as shell beads acquired through exchange from the West Coast and Sea of Cortez (Byrd et al. 2011; Sutton et al. 2007). Diagnostic artifacts include small side- and sometimes basally notched projectiles labeled Desert Side-notched points, small un-notched triangular-shaped projectiles identified as Cottonwood points, and a variety of ceramics.

The nature of inter-group interaction is debated (Sutton et al. 2007:242), but it is clear that particular landscape features, such as springs, were preferentially utilized and incorporated into the traditional landscapes of multiple groups. Regional ceramics are typical of Patayan II-Patayan III phase (AD 1000 to >1900; ca. 950 cal BP–Contact) wares (e.g., Waters 1982) and reflect the various centers of production straddled by the southern Mojave Desert. Patayan wares are generally divided into two broad categories, Tizon Brownware and Lower Colorado Buffware, based primarily on differences in their compositional material. The former are dominant in the Peninsular ranges of southern California and in northwestern Arizona, and are manufactured with residual clays with high iron content. The latter are typical in the lower Colorado River area, Imperial and Coachella valleys, and along the old Lake Cahuilla shoreline where alluvial clays with low iron content are available (Hildebrand et al. 2002; Schaefer and Daniels 2010). Several intermediate variants or "hybrids" of brown/buffwares are also known and do not fit into established Patayan ceramic classification schemes due to considerable overlap in geographical occurrence, rim forms, intermediary clays, temper, inclusions, and surface treatment (see discussions in Hildebrand et al. 2002; Schaefer and Laylander 2007). Unfortunately, analysis of such wares often obscures, rather than clarifies, the typology by adding new categories, reusing names, and mixing typological layers such that the hierarchy of wares, series, and types is muddled (Griset 2013:5–7). However, while undecorated ceramics can be difficult to place within a temporal and spatial typology, petrographic and chemical analyses have proven to be viable alternative criteria to classify ceramics (e.g., Hildebrand et al. 2002; Schaefer and Daniels 2010). For example, although experimental studies indicate that clays from Emerson and Deadman lakes in the south-central Mojave Desert are suitable to produce pottery of similar quality to Parker and Topoc Buffwares, the local clays lacked orthoclase feldspar, a mineral present in the Topoc Buff, Intermountain Brown, and Parker Buff sherds (Schaefer and Daniels 2010).

ETHNOHISTORY (with William Hildebrandt)

This brief overview details basic ethnographic and ethnohistoric information for two southern California Native American groups (i.e., the Kawaiisu and Serrano), the traditional territories of which (as delineated by Heizer 1978 and Ortiz 1983) are intersected by the L-311 project area. The L-311 pipeline corridor runs through the center of ancestral Kawaiisu territory and, according to some researchers, into the northernmost part of Serrano ancestral territory (Earle 2004, 2005; Garfinkel and Williams 2011; Golla 2011; Heizer 1978; Kroeber 1925; Merriam [in Grosscup 1977]; Steward 1938; Underwood 2006; Voegelin 1938; Zigmond 1938, 1986).

Early Mojave Desert ethnographic records (i.e., those between 1776 and 1870) of indigenous cultures come from explorers, pioneers, and trappers who wrote historical accounts and early ethnographies of native cultures and lifeways (e.g., Francisco Garcés, John C. Fremont, and John Wesley Powell). Anthropologically oriented ethnography was mainly of the salvage kind undertaken by the University of California Berkeley and other academic anthropologists in the very late nineteenth and early twentieth centuries. These eventually resulted in several ethnographies (e.g., Benedict 1924, 1926; Kelly 1934; Laird 1976; Merriam 1968; Nelson 1891; Steward 1933). While somewhat systematic and the source of most of the available ethnographic information, this type of research has been criticized for the limited amount of time ethnographers spent in the field (in many cases only a few weeks), for its ethnocentric or at least etic bias, and for some of the errors this research has been found to contain. Many of these researchers also failed to publish the bulk of their findings; their notes comprise complementary sources to published research (e.g., Harrington 1986). For these reasons, the nature of Native American occupation of the central Mojave just before and after European contact is difficult to reconstruct (Park et al. 1938). Nonetheless, some more recent summaries are available, such as Sutton and Earle's (2017) overview of the Serrano.

Kawaiisu

Kawaiisu territory is bounded on the north by the Tubatulabal, on the northeast by the Panamint/Timbisha Shoshone, on the east by the Chemehuevi, on the south by the Kitanemuk and Vanyumé Serrano, and on the west by the Southern Yokuts groups of the San Joaquin Valley (Figure 3). Zigmond (1986) draws the northern boundary south of Little Lake and the Coso Hot Springs (Figure 4), consistent with the original mapping by Steward (1938), but a more recent rendering by Garfinkel and Williams (2011) shows both places within Kawaiisu territory (Figure 5), no doubt reflecting joint use of these important places by multiple groups. The L-311 project area crosses the southern-most boundary of the ethnographically defined Kawaiisu traditional territory north of Kramer Junction, extending further northward into Searles Valley.

All researchers agree that a key characteristic of Kawaiisu territory was the distinction between the rich mountainous habitat to the west and the vast desert lands to the east. Zigmond (1986) argues that the Kawaiisu used the mountains for most of the year, and only traveled out to the desert on rare occasions, while Underwood (2006) and Earle (2005) divide the Kawaiisu into two groups: Mountain Kawaiisu and the Desert Kawaiisu. The Mountain Kawaiisu centered on the southern Sierra Nevada and adjacent Piute and Tehachapi mountains. This area has a high degree of biodiversity with Joshua tree scrub along its eastern flanks, giving way to various combinations of chaparral, blue oak-gray pine forest, and pinyon-juniper woodland in adjacent upland areas, and ultimately Jeffrey pine forest in the highest elevations (Küchler 1977). These vegetation communities were rich in subsistence resources and represent one of the only locations where the staple foods of California (acorns) and the Great Basin (pinyon nuts) overlap in the same place. It is not surprising, therefore, that multiple ethnographic villages have been documented within Mountain Kawaiisu territory (Figure 4).

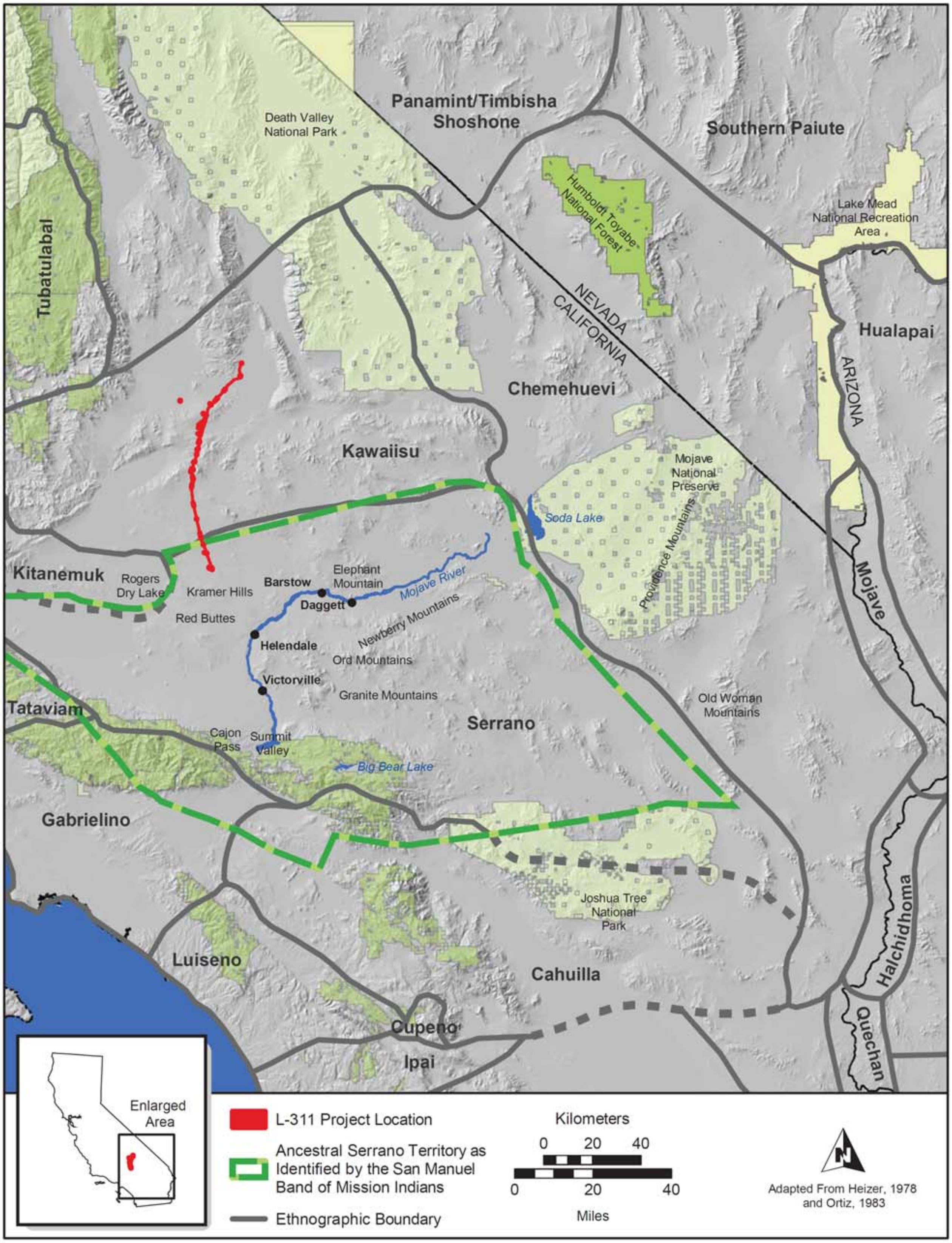

Figure 3. Location of Line 311 Relative to Major Ethnolinguistic Groups in Southern California.

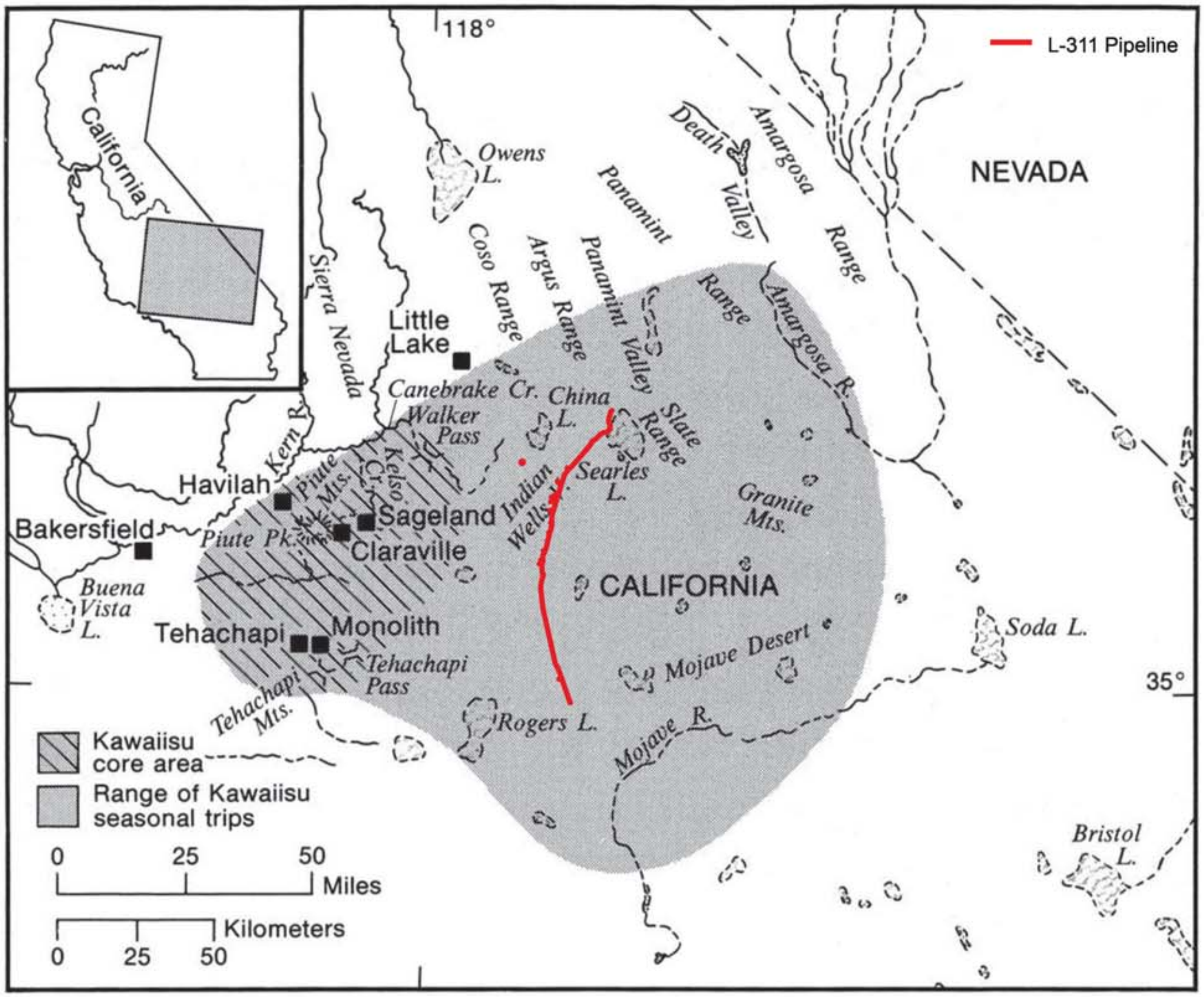

Figure 4. Kawaiisu Territory from Zigmond (1986:399).

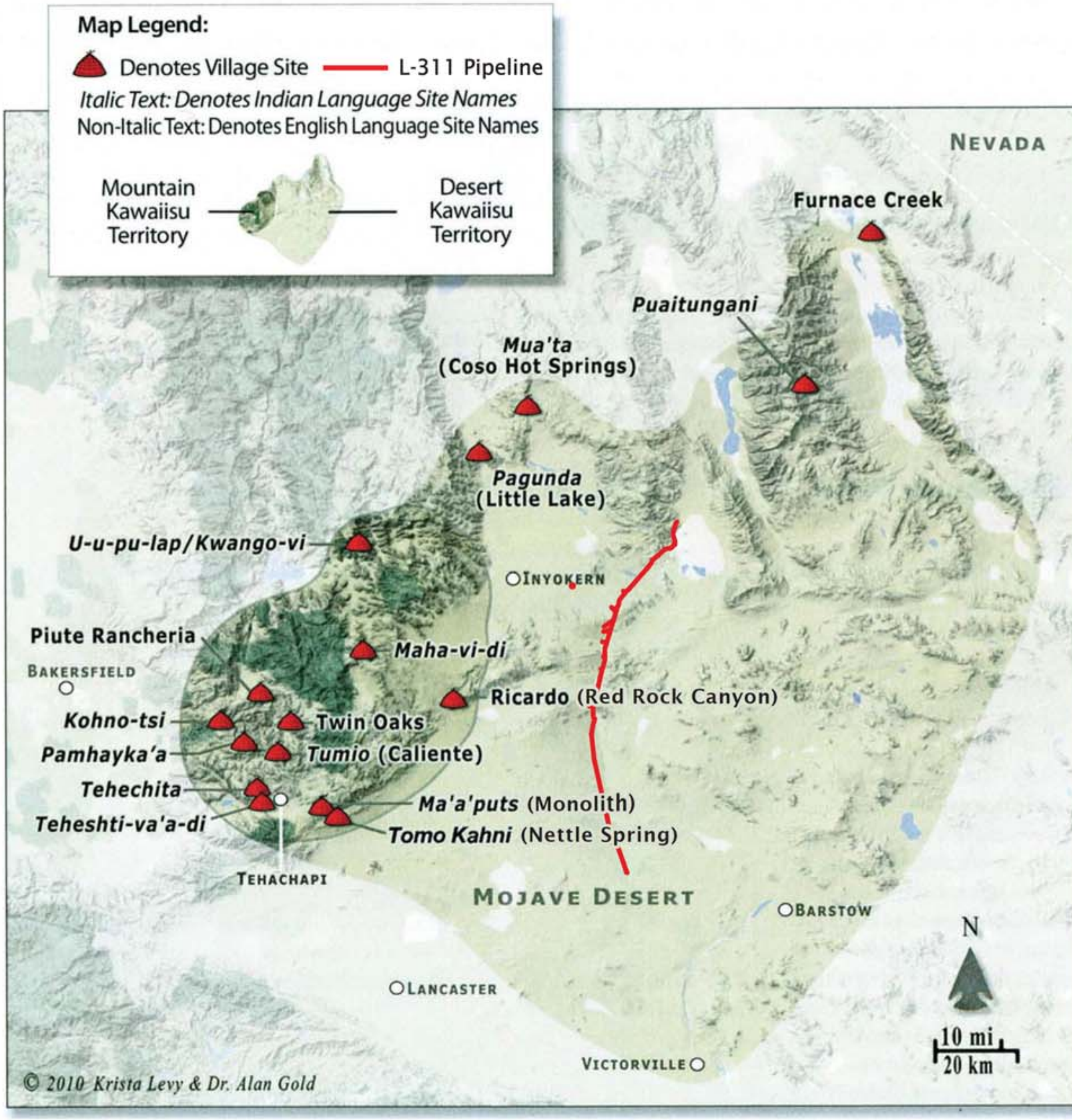

Figure 5. Kawaiisu Ethnogeography.

The Desert Kawaiisu covered vast portions of the Mojave Desert to the east of the mountains, extending from Coso Hot Springs and Death Valley on the north, the Amargosa and Mojave rivers on the east, and the San Bernardino and San Gabriel mountains on the south (see Figure 4). These arid lands are largely composed of creosote bush scrub, with desert saltbush found along the dry lake basins, and Joshua tree scrub on the low mountain ranges that are interspersed throughout the desert (Küchler 1977). Population densities were quite low in these areas, and Desert Kawaiisu family groups tended to move much more often than was the case for their mountain neighbors. The ephemeral nature of their settlements is reflected by the near absence of ethnographic villages on the Garfinkel and Williams (2011) map, with villages limited to Little Lake, Coso Hot Springs, Panamint Range, and Death Valley (see Figure 3).

Contemporary Kawaiisu culture is alive and well. This is demonstrated by the recent book entitled *Handbook of the Kawaiisu* (Garfinkel and Williams 2011), which is a collaboration among Native and non-Native scholars describing the rich diversity of these people. Many individuals are associated with the Kern Valley Indian Community which is composed of Kawaiisu, as well as Tubatulabal, Yokuts, and Panamint Shoshone, and include more than 1,200 members (Garfinkel and Williams 2011:9).

The Kawaiisu were great story tellers, with many linked to the origin of the earth, as well as the plants, animals, and people that ultimately occupied it. *Coyote* is a mythical figure that occurs in almost every story and had creative powers superior to most other characters. The story of *Earth Diver* tells of a time when there was no land, only water. Animals lived only in the sky, so coyote sent them down to bring up dirt from below the water. All of them failed except the bird *potok* (a coot) who got a little dirt from beneath the water and made a small pile. The pile grew much larger over time and eventually covered the water, creating the earth (Zigmond 1980:29).

Once the earth was formed, the first people ate only dirt. And they did not die at that time because when they became old they could take a bath and become young again. Their numbers grew and grew, eventually endangering the future of the earth. Coyote, along with Potato Bug, solved the problem by doing away with the revitalizing baths and, when old people died, coyote ate them to make sure they did not come back (Zigmond 1980:30).

Many stories suggest that deer was the first traditional food on earth. Most tell of a boy being transformed into a deer by Coyote or an older man and told to go up into the mountains and eat grass. Other tribes tried to kill him but failed, but a Kawaiisu man was eventually successful and shared the meat with others. The first meat tasted bad, so the man took fat from his own body and added it to the deer, making it taste much better (Zigmond 1980:38–39). After Deer was created, the other animals came into being, each declaring what it would be and what it would eat. For example, when coyote asked Eagle what he would be, Eagle said "I will be Eagle and I shall eat jackrabbits." When he asked Blue Jay what he would be, Blue Jay said, "I will be Blue Jay, and I shall eat pinyon nuts." All the other animals within the Kawaiisu world were created in this way, each describing its own particular role in the larger system of life (Sigmond 1980:41).

There was also no fire early on, but one day, Coyote saw smoke in the Panamint Range and sent Crow to see what it was. The fire was kept by people living there (probably Panamint/Timbisha Shoshone), and they did not want to give it up. But Bat swooped down and picked it up and kept it under his wing as it was raining that day and brought fire to the Kawaiisu for the first time (Zigmond 1980:44).

Certain geographic locations still visible today also have origin stories associated with them. The large rock slide in Jawbone Canyon (not far from Red Rock Canyon, see Figure 3), originated when Chipmunk wanted to kill a bighorn sheep. He saw a sheep down below, and slid all the way down the canyon, dragging his tail and creating the rock trail that still exists there now. In Kelso Valley, just north of Jawbone Canyon, several women went down to the creek to get water. "Then they went back toward a ridge. They heard someone shouting, so they stopped. It was Coyote. The women turned into rocks. They are still there" (Emma Williams, in Zigmond 1980:195).

Kawaiisu lived in small settlements composed of several related families who cooperated in subsistence pursuits. Mountain Kawaiisu occupied winter villages within woodland habitats where firewood was abundant. Their winter houses (*tomo kahni*) were conical in shape and 25 to 15 feet in diameter. Most were constructed out of willow pole or juniper bow frames and covered with brush and tule mats; many also had a rock ring foundation. Each family had small, above ground granaries used to store foods collected earlier in the year. Winter stores were largely composed of pinyon nuts, acorns, and a variety of small seeds (Zigmond 1986).

With arrival of the spring, Mountain Kawaiisu would move from their winter villages, acquiring fresh food after their long winter dependency on stored resources. Hunting was important at this time, with men searching the local mountain habitats for bighorn sheep and deer. They would sometimes cross Indian Wells Valley to the Argus Range where communal hunts for pronghorn and bighorn sheep occurred. This was also a time when jackrabbit drives were organized, where multiple family groups would gather together and chase their prey into a series of large nets (Zigmond 1986).

Small seeded plants like rice grass, chia, and blazing star became important subsistence resources when the days became warmer, with families traveling from one location to another as the seeds became ripe. Summer houses (*havakahni*) were sometimes constructed in the most productive of these locations, but they were much less substantial than the winter ones because they were temporarily occupied and protection from the elements was less of an issue. They were relatively small, and informally constructed with locally available materials. Most had flat roofs and were open on one side, as their primary purpose was to provide a wind break and shade from the sun (Zigmond 1986).

By late summer and continuing into the fall, Mountain Kawaiisu benefitted greatly from the overlapping presence of pinyon nuts and multiple varieties of acorns. Pinyon nuts were harvested in two ways. Brown cone harvest occurred after the nuts were fully ripe, and the nuts could be knocked out of the cones with poles and picked up from the ground. Because many animals were also dependent on this rich resource (e.g., multiple species of birds and rodents), Kawaiisu would often eliminate competition with these animals by harvesting the cones when they were still green (and the nuts were hard to obtain), and either cache the cones for later use, or roast them which would release the nuts for immediate consumption. Many bushels of nuts were collected using both techniques and transported to their winter villages to carry the people over until the spring (Garfinkel and Williams 2011).

Acorns were knocked down with poles and collected with baskets. Those used for immediate consumption were ground in bedrock mortars or portable hopper mortars, leached to remove their tannic acid, and baked into bread or made into porridge. The remaining acorns, like the pinyon, were taken to the winter villages for storage. This was also the time when surpluses of small seeds collected earlier in the year were brought back to the village for storage (Zigmond 1986).

Much less is known about Desert Kawaiisu habitation and subsistence patterns. Garfinkel and Williams (2011) show village sites in Death Valley and the Panamint Range, which could have been occupied during the winter. Although they lacked acorns, pinyon nuts were available in the Panamint Range and the adjacent Argus Range, and were no doubt stored (along with small seeds) for winter use. Hunting opportunities included big horn sheep in the uplands and pronghorn on the plains, as well as a variety of small game resources, including jackrabbits obtained during communal drives. They also obtained other resources unique to the desert like chuckwallas, captured with long hooks from their rocky habitats, and mesquite beans, which were highly nutritious and could be stored for extended periods of time (Zigmond 1986).

When a person died, the body was typically wrapped in a tule mat, placed in a rock crevice, and covered first with a split burden basket and then covered over with rocks. Personal property could also be included with the grave. After the burial, the deceased's house was usually burned or abandoned, and the family moved to another place (Zigmond 1986:404). An example of substantial grave offerings was found several years ago along Lower Cache Creek at the south end of the Piute Mountains where a person was buried with more than 1,000 shell beads (Garfinkel and Williams 2011:30).

Important Locations

Like the important village sites denoted by Garfinkel and Williams (2011) on Figure 5, most important traditional landscapes and places lie in upland locations within Mountain Kawaiisu lands. The three primary places within more low-lying areas include Red Rock Canyon, the El Paso Mountains, and Coso Hot Springs.

Red Rock Canyon is located about 30 kilometers west of the L-311 corridor. It is associated with multiple oral traditions and is listed by the Native American Heritage Commission as a Sacred Site. It contains many archaeological sites including rockshelters, pictographs, and geoglyphs (Garfinkel and Williams 2011; Sampson 2010). There is a prominent Kawaiisu story about how the vertical-ribbed rock formation in the canyon represents the bones of a giant man-carrying bird named *nihnihno'vi* (Zigmond 1986:407).

The El Paso Mountains are just south of Inyokern, about 20 kilometers west of the L-311 corridor. They are rich in archaeological resources and include a National Register of Historic Places District measuring 110 square miles. The mountains are considered an important religious location among contemporary Kawaiisu. Some of the most significant archaeological sites include rockshelters, rock ring structures, petroglyphs, pictographs, and geoglyphs (Garfinkel and Williams 2011).

Coso Hot Springs is located about 40 kilometers north of the L-311 corridor (see Figure 4). It was and still is an important spiritual place for multiple tribal group throughout the region. It figures prominently in multiple Kawaiisu stories, including *The Race from Victorville to Koso Hot Springs* (Zigmond 1980:141), and Bob Rabbit, the famous rain doctor, would place tree lichen into the boiling water to bring rain and cooler weather to the local area (Zigmond 1977:89).

Serrano

The Desert Serrano lived along the Mojave River, largely occupying a territory roughly stretching some 150 miles from the Providence Mountains in the east, to the area around Dagget or Barstow to the west, bounded to the south by the area surrounding Victorville (Bean and Smith 1978; Kroeber 1925). The Mountain Serrano, as implied by their Spanish name which means mountaineer or highlander, were a largely upland dwelling group that inhabited the San Bernardino Mountain region (Bean and Smith 1978). All told, however, Serrano ancestral territory stretched from the eastern reaches of Antelope Valley to Cadiz Valley (west-to-east), and from the Tiefort Mountain to just north of the San Jacinto Mountains (north-to-south; see back to Figure 3). Although culturally related, the Desert Serrano, about whom ethnographic data are comparably limited and often contradictory, and Mountain Serrano maintained different relationships with neighboring groups (e.g., the Mojave and Chemehuevi; Sutton and Earle 2017:3).

The Serrano practiced a shamanic religion, as among most southern California groups (Bean and Smith 1978; Benedict 1924; Strong 1929). Shamans, or *hʷö·mč*, acquired power through dreams, to which they were psychically pre-disposed and encouraged by ingesting sacred datura (i.e., western Jimson weed). This plant was also ingested by boys during puberty ceremonies, conducted in secret locations overseen by the *pa'xa*, who served as assistants to the *ki'kaˀ*. The boys would receive important and clairvoyant dreams through use of the hallucinogen, which would be interpreted by *hʷö·mč* (Baksh and Hilliard 2005).

The Serrano cremated people and their possessions upon death, within a year of which (typically a week to month after) a memorial (i.e., *mamakwot*) sponsored by the bereaved was held where additional possessions were burned, and songs and dances conducted (Baksh and Hilliard 2005; Benedict 1924; Earle 2003). Week-long morning ceremonies were also held annually involving gift giving, naming, and ritual eagle killing. Strong (1929) also posits that the Serrano shifted their burial practices toward interment after Spanish contact (Earle 2003).

Serrano settlement patterns were seasonally geared towards fluctuating resource availability, but settlements were centered around water sources. Family dwellings were domed, willow-framed structures thatched with tule, although most sheltered activities occurred under less formal ramadas, which were four-pole supported structures also thatched with tule (Bean and Smith 1978; Benedict 1924; Drucker 1937; Kroeber 1925). Villages (ca. 40–80 individuals) incorporated large ceremonial houses where lineage or clan leaders (i.e., *ki'kaˀ*) lived (Earle 2003). Winter villages among the Serrano were situated in lowland canyons and foothills, while summer villages were established in the uplands (Earle 2003).

Hunting and gathering were the traditional subsistence bases of the Serrano, with men pursuing hunting and fishing and women gathering and occasional fishing (Bean and Smith 1978). The desert-dwelling Serrano gathered yucca root, mesquite, and cactus fruits, and would travel annually to the foothills to collect nuts and trade with upland Serrano for acorns and pinyon nuts (Bean and Smith 1978; Benedict 1924; Drucker 1937; Kroeber 1925; Strong 1929). Chia seeds and Indian rice grass were also utilized. Game meat from deer, mountain sheep, antelope, rabbits, other small rodents, and quail was baked or boiled and occasionally sun-dried for storage. Deer and rabbit hunting was largely communal, and frequently occurred during annual mourning ceremonies, with meat mostly shared equally among participants (Bean and Smith 1978; Fowler 1986).

Important Locations

An early nineteenth-century missionary, Father Pascual Nuez, identified several Serrano villages along the Mojave River, which are discussed in a separate ethnographic overview of the L-300 project area. Culturally important areas for the Serrano near the L-311 project area include Kramer Hills, Rogers Dry Lake, and Red Butte, according to the Cultural Resource Manager of the San Manuel Band of Mission Indians.

MOJAVE DESERT HISTORY

The project area was traversed by Native American trails that were eventually exploited by early Spanish and American explorers, and ultimately incorporated into a network of overland routes that supported migration of non-native settlers to California. Toward the end of the twentieth century, the study areas were transformed via railroads connecting California to the rest of the country. This connection spurred the growth of mining, water and energy development, trade and commerce, and transformed small railroad sidings into growing communities.

From the early to mid-twentieth century, the Mojave Desert changed shape as many of the early mining ventures and associated settlements died out. Despite changing fortunes, secondary transportation routes were incorporated into a federally and state-sponsored highway system that catered to an increasingly motorized public. This beget the age of the automobile that created a network of roadside businesses and scenic areas for recreational travelers. During and following the United States' involvement in World War II places within and adjacent to the study area provided a venue for weapons testing, advancement in aviation, training, and mobilization. In recent decades, the region has been adopted by the alternative energy industry, adapting once again to the changing economy. Formally perceived as a wasteland, the Mojave Desert is now recognized as a national resource for its dramatic environment, rich history, and connection to open-road travel and recreation. While not every venture in the Mojave Desert has survived or was successful, many have nonetheless made it into the history books or have left their mark on the desert landscape.

The following sections derive entirely from Higgins et al. (2013) and Ugan and Rosenthal (2013), with minor modification and augmentation. The historical information in that report borrowed heavily from Stickel and Weinman-Roberts (1980) and King and Casebier (1981) who provided thorough historical contexts for cultural resources of the Mojave Desert. Additional sources are cited throughout. Data presented in Chapter 4, further enhance knowledge regarding regional history.

Early Exploration

The first documented non-native travelers of ancient Native American trails were Spanish explorers seeking an overland route to connect their colonial outposts in New Mexico and California. Raids emanating from the Mojave region plagued the California missions and in 1810 it was reported that one Spanish corporal led 14 expeditions against local Indians, some of which played out in the desert. Following Mexican independence and the secularization of the missions, a party of American fur trappers documented their overland adventure that began in 1822 from Mississippi. The leader, Jedediah Strong Smith, kept a diary and documented his entry into the Mojave Desert in 1826. Native guides took him to the Mojave Trail where he continued to San Gabriel Mission. Mojave Trail provided the earliest access route to California via the Mojave Desert. The route coursed from Prescott, Arizona to the Los Angeles area and was the route that Mohave Indians led Francisco Garcés on during his expedition for the Spanish crown kin 1776 to find a way to move subjects to coastal California. This route would eventually lay the foundation for ox trails and wagon roads.

Other parties followed Smiths trail into the Mojave Desert and interests in New Mexico recognized the possibilities for trade. A merchant named Antonio Armijo is credited with taking the first caravan of pack animals across the Mojave in 1830, blazing what would become known as the Spanish Trail which provided a trade route between Santa Fe, New Mexico and Los Angeles, California. During the 1840s many Americans moved out west and many followed the Spanish Trail through the Mojave.

Transportation

The development of the Mojave Desert is inextricably linked to the evolving transportation networks that began with Native American Indian trails that transformed into overland routes for Americans heading west. Following the conclusion of the war with Mexico in 1847, California came under United States jurisdiction. The next year gold was discovered along the American River and the California Gold Rush was underway. It was during this turning point in California history that the territory was recognized as a valuable addition to the Union and providing reliable transportation to the gold fields became a priority. An effort was made at this time to identify all trails to California to facilitate movement of people and goods, and to provide defense of the new territory. The following section highlights the major modes of transportation that evolved throughout the region including wagon travel, major railroad lines, and finally, state routes and highways.

Wagon Roads

During the late-1850s wagon traffic increased dramatically and mule-drawn freight trains between Los Angeles and Salt Lake City coursed over the western Mojave Desert via Cajon Pass. Conflict between the wagon trains and Native Americans was not uncommon and by 1859 Fort Mohave was established near the border of California to provide security to wagon travelers. At this time, the military improved the Mojave Road for wagon travel and established outposts along this route. A wagon road running from Kramer to Randsburg first appeared on mining maps in the 1890s and continued to be depicted on maps into the 1940s. This historic-era road was an early miner's trail that was likely used as a small-scale freight route between mining districts. Other notable early routes in the area include Brown's Road, and the Midland Trail.

Railroads

The years following the Gold Rush lead to a national dialogue and debate over construction of a pacific branch of the railroad. Congress ultimately directed the army to use topographical engineers to explore possible routes and identify the most practical. Survey crews subsequently entered the region. Two of these crews were under the direction of Lt. Amiel Weeks Whipple and Lt. Robert Stockton Williamson. Francis Xavier Aubry led an independent reconnaissance of the Mojave region in 1853 during trips from New Mexico to California.

On July 1, 1869, President Abraham Lincoln signed a railroad bill that authorized the funds to build a railroad to the Pacific Coast. This act came to fruition when the rails of the Central Pacific and the Union Pacific met at Promontory, Utah in May 1869. This major event in US transportation history brought to together the "Big Four"—Collis Huntington, Mark Hopkins, Charles Crocker, and Leland Stanford—who emerged as the most notable railroad entrepreneurs in the west.

The completion and success of the transcontinental railroad in 1869 led to a race to build a similar route across the southern United States. In a bid to beat the Atlantic & Pacific Railroad to the Colorado River at Needles, the Southern Pacific Railroad Company (SPRR) laid track across the eastern Mojave from Barstow to Needles. The SPRR hired many of the Chinese laborers who built the transcontinental, knowing they were getting experienced and tireless workers who knew how to build a railroad. These Chinese workers began building the route across the desert, entering the Mohave around Lavic and Bagdad in 1882. By November 1882 the siding at Lavic was completed. They reached Needles in 1883, completing the transcontinental railroad through the south. Eventually the SPRR merged their tracks across with desert with the Atchison, Topeka and Santa Fe Railway (AT&SF), and later the Burlington Northern-Santa Fe Railroad Company, who still operates the rails today (Heath 1927; Schaefer and Duffield-Stoll 1996:16).

Following a system perfected through four years of building the transcontinental, Chinese workers were hired through a labor contractor. Each camp contained about 12–30 workers and were charged with independent tasks. One group, for example, prepared the grade by breaking up rocks, shoveling dirt to form cuts, or piling up soil when elevation was needed. Another group may have laid track and moved iron, while another followed behind, pounding in spikes and finishing up the grade. The workers were adept at blasting through rock and building tunnels, as well as laying the grade (Maniery et al. 2016).

In the desert, workers were housed in tents, clustered together along the route. Camps were portable, moving every day or two and keeping pace with the speed of the work. The workers found that digging shallow trenches in the sand allowed them to burrow into the cool earth at night, making it easier to sleep. Food stuffs from China were available and camps usually had a Chinese cook who prepared traditional meals and served tea to the workers during the day. Chinese camps are often defined by the stoneware vessels, imported from China that contained pickled or dried vegetables, sauces, liquor, vinegar, and other goods (Maniery et al. 2016). Opium was often used to ease aching muscles after a long day's work and evidence of opiate use is a common find on railroad camp sites. Coins were used as money, worn on cords around the neck for good luck, or used in gaming. Many coins are stamped with Dynasty marks representing the Reign of favored emperors, although they were produced centuries after the reign ended.

In the early 1880s, the tracks of the Southern Pacific Railroad, owned by the Big Four, met the tracks of the Atlantic and Pacific at Needles. By this time, Southern Pacific had monopolized freight and travel in California and had a web of railroads throughout the state. In direct competition with Southern Pacific, AT&SF planned for a new railroad to California and ultimately purchased half the stocks of the Atlantic and Pacific. Instead of constructing their own line, AT&SF funded the completion of Atlantic and Pacific's line to the California border at Needles. In August 1884, many were surprised when in the AT&SF managed to purchase the 242 miles of track from Southern Pacific between Mojave and Needles. The AT&SF

continued to extend their line by adding new track between Waterman's Junction (Barstow) and Box Canyon near Los Angeles where it eventually connected to San Diego. Originally a single-track line, a second track was added in 1923.

Another railroad in the study area, coursing to the north from Daggett, includes the Union Pacific Railroad which is part of the San Pedro-Los Angeles & Salt Lake Railroad, constructed in the early years of the twentieth century. The railroad became the fourth means of transcontinental rail transportation into Southern California and linked the western states of Utah, Nevada, and California. It was also the major transportation medium for mining operations in the eastern Mojave. Lastly, the Lone Pine Branch or "Jawbone Line" of the Union Pacific was constructed in 1910 to aid in the construction of the Los Angeles Aqueduct.

Randsburg Railway

The Randsburg Railway Company was incorporated in May 1897 under the auspices of the Atlanta & Pacific Railway (A&P), a subsidiary of the AT&SF, by John W. Beckley of Rochester, Albert Smith of New York City, and Alvin A. Daugherty of Los Angeles (Serpico 2004). Shortly thereafter (June 1897), the A&P was transferred to the then newly established Santa Fe Pacific Railroad (SFP). Construction of the Randsburg Railway, intended to tap the rich gold fields of the Rand Mining District (est. December 1895; see forward to *Mining*, page 30), began in October 1897 (Serpico 2004). This railway, which was completed in December 1897, stretched from Johannesburg (it never extended to Randsburg) to Kramer, at which in 1896 the A&P made several improvements (including a new depot, water tank, and post office) in hopes of making it a central hub for access to Randsburg. Prior to construction of the railroad, travel and transport between Kramer and Randsburg was facilitated via wagon coach.

According to Serpico (2004), the Randsburg Railway was constructed of secondhand 56-pound Bessemer rail, likely acquired from Arizona, laid on rails made of redwood, cedar, oak, and pine. Interestingly, and contrary to the AT&SF, Chinese labor was not utilized for construction of the Randsburg Railway, and Chinese laborers were also reportedly disallowed in Johannesburg and Randsburg (Serpico 2004). Daily service between Johannesburg and Kramer began in January 1898, with the 28.5-mile one-way trip scheduled to take one hour and 35 minutes, with stops at Fremont and St. Elmo. The company and line were transferred fully to the AT&SF in 1903, and in 1906, a spur track and station were constructed at the Atolia camp to support the booming tungsten mining industry there. By January 1917, the Randsburg Branch of the AT&SF also provided stops at Atolia, Penshaw, and Osdick (i.e., Red Mountain). A short-lived rail motorcar service also ran between September 1916 and October 1917, with Fremont, St. Elmo, and Atolia as the major stops (Serpico 2004).

By May 1919, with waning post-war interest in tungsten and linked diminishment of mining production and local populations, train service along the Randsburg Branch dropped from daily to three times a week, and only twice a week by late 1920 (Serpico 2004). Operations officially ceased in December 1933, prior to which only Friday service was offered. All associated rails were reportedly removed in 1934.

State Routes and Highways

At the end of the nineteenth century, support for a state system of roads out west was overshadowed by the railroad and road construction was not a priority. Perhaps surprisingly, it was early bicycle associations that started the push for road and highway construction in the 1890s and it wasn't until motor driven vehicles became more popular at the turn of the century that support for road building became a priority. The first automobile in the United States was built in 1893; however, it wasn't until the introduction of Ford's Model T in 1908 that the automobile become accessible to the average citizen (Bischoff 2005).

As automobile ownership increased, it became apparent that there were very few places that accommodated vehicle travel. There were no national roads, maps or signs, and the existing local road networks were typically not suitable for automobile travel. As road engineering became a national priority, new road surfaces were developed to improve auto-travel. In 1916, the Federal Aid Road Act provided $75 million for federal assistance in the construction of surfaced rural roads throughout the country and during World War I, the national demand for reliable transportation exposed the deficiencies in railroad travel. As trucks emerged as a reliable shipping method, closer attention was given to highway planning and construction. In 1921, an amendment to the Federal Aid Road Act was passed which required each state to designate their primary roads for inclusion in a state highway system; these roads would ultimately receive federal money for construction and improvement. In the Mojave Desert, road travel became popular and several documents were published regarding vehicle travel and reliable watering stops for desert travelers.

US Highway 395

US 395 was constructed ca. 1911–1913 in conjunction with installation of Southern California Edison Company's power line from Kramer Junction to Victorville. It was referred to as the Ransburg/San Bernardino road, and a significant portion of this route was added to the state system of secondary highways in 1933. The alignment improved access between two popularly used routes in the Mojave Desert: the Midland Trail and the National Old Trails Highway. It was given a new sign route designation as US 395 in 1935 (Bricker 1996).

Mining

In addition to transportation, mining was closely connected with the development of the region and was by far the most important industry. Early mining ventures in the vicinity date as far back as the 1860s following the discovery of gold, silver, and borax. In the early twentieth century, and particularly during the First World War, tungsten became increasingly important as well.

Swope and Gregory (2017) define three thematic episodes in the development of mining in the American West: Discovery and Early Mining Development, Growth and Zenith of Mining Activities, and the Decline and Resurgence of Mining Activities. They summarize important events, legislation, and technological developments that guided this industry, with special emphasis on the southern California deserts. Of particular interest for this study, Swope and Gregory discuss the Randsburg (aka Rand) Mining District in some detail. This district, along the county line between Kern and San Bernardino Counties, was first prospected in 1860. Placer gold was discovered in 1893, triggering the rapid development of the district. The largest mine was the Olympus, subsequently renamed the Yellow Aster, near the town of Randsburg. It dominated mining in the area from 1895 to 1918, when the Rand Silver Mine became the largest (Swope and Gregory 2017:2.45). In 1904, the Randsburg district was described as "one of the prominent gold fields of the state," with 352 hard-rock quartz mines and 44 mills, mining and processing gold, silver, copper, iron, lead, borax, antimony, and sulphur (Aubury 1904, cited in Swope and Gregory 2017:2.45). Mining operations along the L-311 corridor were concentrated in the Spangler Hills and vicinity, and in the region around Atolia/Red Mountain.

Gold and silver mining was largely developed in the 1880s and two mining districts were organized at this time: Calico and Grapevine. The discovery of silver in the Calico Mountains developed Daggett as a hub for the transportation of people and goods via the wagon roads and railroad station. These resources also proved useful to the mining of borax in the Calico Mountains beginning in 1883 (Myrick 1991). The Calico mines accounted for more than 80% of the total silver production in California between 1883 and 1885 (Keeling 1976; Schuiling 1984). But after 1885, silver mining declined when the price of silver dropped. Desert mining was so expensive that if the price of silver dropped below 65 cents an ounce, even the richest mines closed. In the 1890s, mining for gold surged and continued past the turn of the century. Metals mining emerged again during years of the Great Depression.

Silver, Gold, and Tungsten Mining

Clark (1970:164) notes that "the Rand or Randsburg district lies athwart the Kern-San Bernardino County line…The western part of the district, in Kern County, has been chiefly a source of gold, while the eastern part, in San Bernardino County, has been largely a source of silver. The Atolia tungsten district is just to the southeast." He also says that in the early period "numerous short-lived dry-washing camps soon sprang up in the entire region." Large-scale gold mining continued until 1918, and the following year saw the discovery of the "famous and highly productive Kelly or California Rand silver mine" that operated through the 1930s (Clark 1970:164). Atolia provided large amounts of tungsten ore during World Wars I and II and the Korean War.

The following is excerpted and slightly abridged from the East Kern Historical Museum Society web site (https://ekhms.weebly.com/rand-mining-district.html):

> Randsburg, Johannesburg and Red Mountain are three small towns along US 395 between Ridgecrest and Boron, California. They are the mining district towns of the Rand Area, the gold and silver mining belt of Kern County, named after the Witwatersrand of South Africa.
>
> The region has enjoyed a mining legacy that has played out in three stages. The 1890s witnessed the first mining frenzy, and by 1900 more than $3,000,000 in gold had been extracted from the region. In 1905 came the tungsten boom that created the camp of Atolia. Tungsten was an essential element to the steel industry particularly when it came to making armaments, especially during both World Wars and later Korea. The last stage came in 1919, with the discovery of silver in and around what became Red Mountain.
>
> On December 20, 1895, the Rand Mining District was organized. Twenty-six persons signed the document creating this district. Randsburg had 13 buildings at the time, mostly tents. Randsburg soon became one of the great boomtowns of the West. In December 1896, when Randsburg was still little more than a cluster of tents, the Johannesburg Water and Townsite Company was busy laying out a rival town (Johannesburg) that would be well-planned, even to having piped water in the homes. Johannesburg at its height had a post office, two general stores, a real estate office, stationers and variety store, billiard-pool room, music hall, boarding houses, lunch counter, two laundries, two lumber yards, two livery stables, a barber shop, a telegraph line with Mojave, and a telephone exchange with Randsburg.
>
> Large-scale gold mining continued in the area until 1918. The famous and highly productive Kelly or California Rand silver mine was discovered in 1919 and was operated on a major scale through the 1930s. Gold production from the district was substantial in the 1930s and early 1940s, and there has been intermittent prospecting and development work since. The total gold output of the district is estimated at more than $20 million. In 2006, BLM identified dangerous levels of arsenic contamination at the Rand Mining District – levels thousands of times higher than recognized as safe by the Environmental Protection Agency.

Settlement

Many of the earliest settlers in California used federal land disposal laws such as the Land Law of 1820, the Homestead Act of 1862, and the Stock Raising Homestead Act of 1916 to transfer federal land into private hands. Despite all the avenues available for patenting land, few chose to settle in this portion of the

Mojave Desert in large part because of the lack of potable water, vegetation for grazing, or timber. Settlement was largely restricted to a narrow corridor along the railroad and in scattered mining towns. Not until the early part of the twentieth century did the region experienced an influx of homesteaders. By that time much of the usable agricultural land elsewhere in California had been taken up, and people looking to homestead were pushed farther and farther into marginal lands. In the mid-twentieth century, many settlers utilized the 1938 Small Tracts Act which allowed the federal government to dispose of parcels of undesignated public lands (no larger than five acres) by sale or lease to individuals. These small tracts, also referred to as "Jackrabbit Homesteads," could be used as a residence, for recreation, or for business (Stringfellow 2009).

Water Development/Transport

The reliable availability of water has always been central to human settlement in the Mojave Desert and early on, miners and mining companies needing reliable supplies of water developed springs and drilled wells, often piping water considerable distances. Many settlements in this region were positioned to take advantage of groundwater located within the Mojave River Valley where ground water could be exploited for the cultivation of grass hay to supply cattle and mules for freighting. Irrigation ditches were constructed to funnel water to these relatively small-scale agricultural enterprises beginning sometime in the 1870s. Claims for water rights were filed with the mining booms in the 1880s–1890s and agricultural development and settlement increased. Ranches sprung up east of Barstow, near Helendale and in Hinkley Valley and at this time several homesteads were filed. The introduction of the automobile in the early part of the twentieth century increased access to the desert and in the 1920s, the government erected monuments and sign posts at crossroads pointing the way to springs and wells fit for use. In 1921, Thompson published his *Routes to Desert Watering Places in the Mohave Desert Region, California* which recognized the need for desert travelers to have access to fresh water. Wells were typically located at major settlements, railroad, sidings, and roadside stops. In addition to localized wells, two major water delivery systems cross portions of the survey corridor and include the Daggett Ditch and the Los Angeles Aqueduct.

Military

Several United States military installations now occupy areas of the California Desert. Closest to the L-311 project area is the Naval Air Weapons Station (NAWS) China Lake. As excerpted from Kellewan et al. (2013:20–21; also JRP 1997), the military history for NAWS China Lake can be broken down into three periods: Old Military, World War II-era, and Cold War-era. The Old Military period relates to the initial Euro-American exploration of the West, generally in the 1840s and 1850s, before mining, freighting, and settlement. Early military explorations in the area included Fremont's third expedition in 1845 down Owens Valley and over Walker Pass, and Lt. Bendire's expedition in the 1850s. Expeditions such as these left few discernible archaeological sites in the area because their camps were used for a very short duration. Aside from exploration, the history of the Old Military period is concerned with conflicts among settlers, miners, and Native Americans. The period of Army-Native American conflict (known as the "Indian Wars") coincided generally with the Civil War, from 1862 to 1865.

In response to American involvement in World War II, the California Institute of Technology (CalTech) in Pasadena assembled a group of scientists active in rocket development. This group had expertise in propellants and fuses, and in 1943, the Navy was given the priority of developing a usable aircraft-fired rocket. Before the end of the year, the Navy had committed substantial financial resources to CalTech to advance rocket research, development, testing, and evaluation (RDT&E). Pasadena was a poor location in which to undertake this work due to logistical, safety, and security concerns. In mid-1943, Navy commanders recommended that a new test range for Navy rockets be sited at Inyokern. In November 1943, the Bureau of Ordnance authorized the permanent base, Naval Ordnance Test Station (NOTS), at Inyokern.

Four characteristics distinguish NOTS from other World War II installations: (1) it was designed as a permanent facility; (2) it employed a very high percentage of civilian employees; (3) its personnel were a mixture of highly educated civilians and military career men of some rank; and (4) it was consciously designed to foster close communication and cooperation between these two group. Much of the North Range of NAWS China Lake corresponds to the original NOTS Inyokern.

The post-war mission of the installation remained largely the same as it had been during the war: to provide the RDT&E needed for improving aircraft rockets for use by US Navy pilots. NAWS China Lake played a significant role in testing and developing production methods for rocket propellants, specifically ballistite, the principal solid rocket propellant used in the 1940s and 1950s. This program took place at the China Lake Pilot Plant facility (now known as the China Lake Propulsion Laboratory, or CLPL). Nuclear-related activities also took place at NAWS China Lake, at the rapidly built Salt Wells Pilot Plant (now known as SWPL). At this facility, development of an explosive lens and testing of the design for nuclear bomb casing and fins occurred. The Salt Wells Project spanned from 1945 to 1954.

In the post-war years, NAWS China Lake developed many new technologies. The B-4 High Speed Test Track, for example, was a crucial testing facility between 1944 and 1954 (largely for jet aircraft components and missile systems) and is an important historic structure at NAWS China Lake. This is also the case for the Supersonic Naval Ordnance Research Track, which was developed in 1953 and is still in limited use today (Mikesell and Larson 1999).

The Vietnam War renewed Navy interest in conventional weapons, and NAWS China Lake was at the forefront in developing new technologies and customizing hardware to solve urgent problems. A "weapon-a-week" atmosphere developed at NAWS China Lake, and the more notable achievements included improvements to the Sidewinder missile; production of new weapons such as Shrike, Walleye, and fuel-air explosives; the development of night attack and variable thrust technologies; and testing/development of laser- and optically guided systems. Advancements in free-fall bombs were also being made at NAWS China Lake, most notably the cluster bomb "eye" series. Computer-driven weapons systems became increasingly important beginning in the 1970s, and NAWS China Lake played an integral role in developing and testing weapons software for the Navy, Air Force, and Marine Corps.

Throughout the 1960s, NAWS China Lake advanced work on developing precision-guided munitions. These systems were used extensively during the Vietnam War, as they allow nighttime detection and identification of heat-emanating targets.

On January 22, 1992, Naval Weapons Center China Lake was officially placed as a tenant activity under the Naval Air Weapons Station (an operational division of the Naval Air Systems Command headquartered in Patuxent River, Maryland) and became the Naval Air Warfare Center Weapons Division. In 1993 the installation assumed its current designation as the Naval Air Weapons Station (NAWS) China Lake.

Energy Development

Until about 1880, energy development in the state was dominated by installations in the north that supplied northern California population centers. Over time the state's population would shift, and between 1880 and 1938, Los Angeles went from comprising only 10% of California's population to over half. Southern California would eventually become a main locale for energy development that included oil, electricity, and natural gas (Asmus 2009).

Arguably the most substantial energy-related features in the study area are the subject natural gas pipelines 300A/B constructed and operated by PG&E. Although natural gas was used in the United States as far back as the early nineteenth century, it was not until pipeline technology evolved in the 1920s, that natural gas was able to be transported over long distances. According to Castaneda (2004), there were two historic eras of rapid gas pipeline construction in the United States. The first lasted from 1928 to 1936 when long-distance gas lines were built from gas fields in the Texas Panhandle region to Midwestern markets and select southwestern markets. Lines 300A/B were constructed in the 1950s (Sakowicz 2013) during the second era of rapid gas pipeline construction in the United States. This era spanned the years from about 1943 to the mid-1950s when new lines extended from Gulf Coast-area gas fields to northeastern and southeastern markets. Additional lines were also constructed at this time from west Texas gas fields to the west (Castaneda 2004).

While there are no major electrical generating installations in the study area, several associated transmission lines, crisscross the survey corridors and include the "Tower Line" or Kramer-Victorville Transmission Line (installed 1911–1913), and the Barstow to Victorville 34.5kV Transmission Line (installed in 1918). Two additional lines that course through the study area are associated with the Hoover Dam project—the Hoover Dam to San Bernardino Transmission Line and the Boulder Transmission Lines 1, 2, and 3. The San Bernardino line was installed in 1930–1931 by the Southern Sierras Power Company and the Nevada-California Power Company to first transmit power for the construction of the dam before it was ultimately use to transmit power to other areas. The Boulder lines were built by the Los Angeles Department of Water and Power, Bureau of Power and Light, between 1933 and 1940 to transmit three-phase, 60-cycle electrical power from Hoover Dam, on the Colorado River between Arizona and Nevada. At the time of their construction, they set a new world standard for the long-distance transmission of electrical power (Powers 1993).

Today the Mojave region is becoming a major venue for the development of alternative energy, such as wind and solar, and thus continues to play a vital role in the ongoing history and legacy of California.

CHAPTER 4. RECORDS SEARCH AND LITERATURE REVIEW

Far Western completed records searches and literature reviews through the South Central Coastal Information Center (SCCIC) and Southern San Joaquin Valley Information Center (SSJVIC) for the L-311 study area. The record search areas included resources documented and previous project reports within one-half mile of the edges of survey area buffer boundaries. Resource shapes and locations were digitized into a GIS, if not already available as such, augmenting existing recent record searches completed by Izzi (2017a, 2017b, 2017c) for L-311 (see Confidential Appendix C). We also reviewed historical topographic quadrangle maps and General Land Office (GLO) records to identify otherwise undocumented historic-era linear resources comprising proposed access roads, structures and other features that overlap the project area, and to aid in dating previously recorded and newly documented sites.

Records search data are summarized by project area in the following sections, focusing on non-isolate cultural resources, which are defined in the following sections. Of the 87 previously recorded sites within the records search area, a total of 14 are intersected by the L-311 APE (Table 4). These resources were variably documented in one or more of 87 project reports, of which 31 are pertinent to the L-311 APE (Table 5).

SITE DEFINITIONS

Based on the background literature (summarized in Table 5), records search data, our previous work in the region for PG&E and for a variety of other clients we have developed a series of regional site types. These types are defined below and are subsequently used to summarize the records search results, guide site documentation, and inform eligibility potential. New site types will be created if necessary should we encounter resources during the inventory that do not easily fit the types defined below. All site and isolate definitions were presented in a work plan submitted to and approved by BLM in February 2018 (Byerly and Carpenter 2018).

Prehistoric Sites

Prehistoric sites included those resources that contain three or more artifact types within 15 meters of each other (e.g., one biface + one point or sherd + one flake = site), or six or greater artifacts of the same or different type (e.g., one biface + five flakes = site). Similarly, associations of single flaked stone tools and any other artifact types within 15 meters of one another were recorded as sites (i.e., one biface + one flake = site). Segregated reduction locations (SRLs) were exceptions to this rule, as detailed below. All isolated prehistoric features (hearths, stone rings, alignments, etc.) were recorded as sites. Site types common in the Mojave Desert include:

- <u>SRLs</u> include discrete, concentrated clusters of debitage, representing one material type that may include a few cores and/or bifaces that are thought to reflect a single confined reduction event of one locally acquired nodule. SRLs associated with sites aboard parts of MCAGCC have been found to cover 5.2 ± 0.7 square meters on average (n=197, range=<0.1–86.4 square meters), have maximum dimensions 2.6 ± 0.2 times greater than minimum dimensions (n=197, range=0.3–38 square meters), and to incorporate artifact densities of 16.9 ± 1.7 per square meters, with flakes comprising the bulk (ca. 96%) of these artifacts (n=197, range=0.5–254.8 per square meters; Byerly 2017:88).
- <u>Small SRLs</u> (i.e., 1–24 artifacts) were recorded as *isolates*, but received slightly more analytical attention than other isolates in that SRL size, orientation, and debitage-reduction-stage data are collected.
- <u>Large SRLs</u> (i.e., ≥25 artifacts) were recorded as *sites*.

Table 4. Records Search Resource Results.

LIST NO.	TRINOMIAL (CA-)	PRIMARY NO. (P-)	COUNTY	IN APE	ERA	TYPE	ELIGIBILITY [a]	COMMENTS
1	SBR-1020	36-001020	SBR	No	P	Feature	Unevaluated	-
2	SBR-1063H	36-001063	SBR	No	H	Mining	Unevaluated	-
3	SBR-1093	36-001093	SBR	No	P	Feature	Rec. Ineligible	Not re-located in 2015
4	SBR-1094	36-001094	SBR	No	P	Feature	Unevaluated	-
5	SBR-1099	36-001099	SBR	No	P	Feature	Unevaluated	-
6	SBR-1192	36-001192	SBR	No	P	Feature	Unevaluated	-
7	SBR-1193	36-001193	SBR	No	P	Feature	Unevaluated	Not re-located in 2015
8	SBR-1215	36-001215	SBR	No	P	Feature	Unevaluated	-
9	SBR-2071H	36-002071	SBR	No	H	Refuse Deposit	Unevaluated	-
10	SBR-2072	36-002072	SBR	No	P	Campsite	Unevaluated	-
11	SBR-2281	36-002281	SBR	No	P	Feature	Unevaluated	-
12	SBR-4540H	36-004540	SBR	No	H	Road	Unevaluated	-
13	SBR-6572/H	36-006572	SBR	No	M	Refuse Deposit + Iso.	Unevaluated	-
14	SBR-6693H	36-006693	SBR	No	H	Railroad	Det. Eligible	Listed on the California Register in 2002
15	SBR-7375	36-007375	SBR	No	P	Lithic Reduction Station	Unevaluated	-
16	SBR-7376	36-007376	SBR	No	P	Campsite	Unevaluated	-
17	SBR-7377H	36-007377	SBR	Yes	H	Refuse Deposit	Rec. Ineligible	-
18	SBR-7545H	36-007545	SBR	No	H	Road	Rec. Ineligible	-
19	SBR-8315H	36-008315	SBR	No	H	Mining	Unevaluated	-
20	SBR-8547H	36-008547	SBR	Yes	H	Railroad	Rec. Ineligible	-
21	SBR-8548H	36-008548	SBR	Yes	H	Road	Rec. Ineligible	-
22	SBR-8549H	36-008549	SBR	No	H	Community	Rec. Eligible	-
23	SBR-8550H	36-008550	SBR	No	H	Community	Rec. Eligible	-
24	SBR-9813	36-009813	SBR	No	P	Campsite	Unevaluated	-
25	SBR-10316H	36-010316	SBR	Yes	H	Utility	Det. Eligible	Listed on the California Register in 1995
26	SBR-11477	36-011477	SBR	No	P	Feature	Unevaluated	-
27	SBR-12448	36-012973	SBR	No	P	Lithic Reduction Station	Unevaluated	-
28	KER-7729H	15-13824	KER	No	H	Utility	Unevaluated	-
29	KER-8372H	15-15028	KER	No	H	Road	Rec. Ineligible	-
30	SBR-13253H	36-020574	SBR	No	H	Water Conveyance	Unevaluated	-
31	SBR-13256	36-020577	SBR	No	U	Feature	Unevaluated	-
32	SBR-13257	36-020578	SBR	No	U	Feature	Unevaluated	-
33	SBR-13778H	36-021446	SBR	No	H	Refuse Deposit	Unevaluated	-
34	SBR-13779H	36-021447	SBR	No	H	Refuse Deposit	Unevaluated	-
35	SBR-13781H	36-021449	SBR	No	H	Refuse Deposit	Unevaluated	-
36	nd	36-021450	SBR	Yes	H	Utility	Unevaluated	-
37	KER-7738H/ SBR-13799H	36-021496	KER/ SBR	Yes	H	Utility	Unevaluated	-
38	SBR-13800H	36-021497	SBR	Yes	H	Utility	Unevaluated	-
39	SBR-14742	36-023266	SBR	No	P	Lithic Reduction Station	Unevaluated	-
40	SBR-14847H	36-023522	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
41	SBR-14849H	36-023524	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
42	SBR-14851H	36-023525	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
43	SBR-14852H	36-023526	SBR	No	H	Refuse Deposit	Unevaluated	-
44	SBR-14853H	36-023527	SBR	No	H	Refuse Deposit	Unevaluated	-

Table 4. Records Search Resource Results *continued*.

List No.	Trinomial (CA-)	Primary No. (P-)	County	In APE	Era	Type	Eligibility [a]	Comments
45	SBR-14854H	36-023528	SBR	No	H	Refuse Deposit	Unevaluated	-
46	SBR-14855H	36-023529	SBR	Yes	H	Refuse Deposit	Unevaluated	-
47	SBR-14856H	36-023530	SBR	No	H	Refuse Deposit	Unevaluated	-
48	SBR-14857H	36-023531	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
49	SBR-14858H	36-023532	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
50	SBR-14859H	36-023533	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
51	SBR-14860H	36-023534	SBR	No	H	Refuse Deposit	Rec. Ineligible	-
52	SBR-14866H	36-023540	SBR	No	H	Refuse Deposit	Unevaluated	-
53	SBR-14867H	36-023541	SBR	No	H	Refuse Deposit	Unevaluated	-
54	SBR-14868H	36-023542	SBR	Yes	H	Refuse Deposit	Unevaluated	-
55	SBR-14869H	36-023543	SBR	No	H	Refuse Deposit	Unevaluated	-
56	SBR-15075	36-023863	SBR	No	P	Lithic Reduction Station	Unevaluated	-
57	SBR-15078	36-023866	SBR	No	P	Campsite	Unevaluated	-
58	SBR-15081	36-023869	SBR	No	P	Lithic Reduction Station	Unevaluated	-
59	SBR-15083H	36-023871	SBR	No	H	Refuse Deposit	Unevaluated	-
60	SBR-15084H	36-023872	SBR	No	H	Refuse Deposit	Unevaluated	-
61	SBR-15096	36-023884	SBR	No	P	Lithic Reduction Station	Unevaluated	-
62	SBR-15097	36-023885	SBR	No	P	Campsite	Unevaluated	-
63	SBR-15098	36-023886	SBR	No	P	Campsite	Rec. Ineligible	-
64	SBR-15117/H	36-023930	SBR	No	M	Refuse Deposit + Feature + Iso.	Unevaluated	-
65	SBR-15118H	36-023931	SBR	No	H	Water Conveyance	Unevaluated	-
66	SBR-15152H	36-023967	SBR	No	H	Refuse Deposit	Unevaluated	-
67	SBR-15316H	36-024131	SBR	No	H	Road	Unevaluated	-
68	SBR-15435H	36-024250	SBR	Yes	H	Refuse Deposit	Unevaluated	-
69	nd	36-025591	SBR	No	H	Community	Rec. Ineligible	-
70	nd	36-025592	SBR	No	H	Community	Rec. Ineligible	-
71	nd	36-025593	SBR	No	H	Community	Rec. Ineligible	-
72	nd	36-025594	SBR	No	H	Community	Rec. Ineligible	-
73	nd	36-025595	SBR	No	H	Community	Rec. Ineligible	-
74	nd	36-026448	SBR	No	H	Road	Unevaluated	-
75	SBR-16756H	36-026449	SBR	Yes	H	Road	Unevaluated	-
76	SBR-16760	36-026462	SBR	No	M	Campsite + Iso.	Unevaluated	-
77	SBR-16761H	36-026463	SBR	Yes	H	Refuse Deposit	Rec. Ineligible	-
78	SBR-17104H	36-027090	SBR	No	H	Mining	Unevaluated	-
79	SBR-17105H	36-027091	SBR	No	H	Refuse Deposit	Unevaluated	-
80	SBR-17120H	36-027124	SBR	No	H	Refuse Deposit	Unevaluated	-
81	SBR-17121H	36-027125	SBR	No	H	Refuse Deposit	Unevaluated	-
82	SBR-17122H	36-027126	SBR	No	H	Refuse Deposit	Unevaluated	-
83	SBR-17123H	36-027127	SBR	No	H	Refuse Deposit	Unevaluated	-
84	SBR-17216H	36-027677	SBR	No	H	Refuse Deposit	Unevaluated	-
85	SBR-29368	36-029368	SBR	No	Mod.	Looter's Pile	Unevaluated	-
86	SBR-31228H	36-031228	SBR	Yes	H	Road	Rec. Ineligible	-
87	SBR-31229H	36-031229	SBR	Yes	H	Utility	Rec. Ineligible	-

Notes: nd – no data; P – Prehistoric; H – Historic; M – Multi-component; Mod. – Modern; Iso. – Isolate; Det. – Determined; Rec. – Recommended; SBR – San Bernardino; KER – Kern. [a] Eligibility recommendations were not updated with current findings.

Table 5. Records Search Report Results.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
1	125	1972	Southern California Edison	*Environmental Report: Coolwater-Kramer 220 KV Transmission Line*	A-C Staging Area
2	250	1975	San Bernardino County Museum Associations	*Historic-archaeological survey for three parcels of land on the Mojave Desert*	-
3	362	1976	Mohorich, Leroy M., William H. Collins, Gail G. Givens, and Gerald E. Hiller	*Final Environmental Analysis Record for Proposed Geothermal Leasing in the Randsburg-Spangler Hills-So. Searles Lake Areas, California*	K, L, M, N, O, P, Access Road
4	363	1978	Kaldenberg, Russel	*Archaeological Clearance of the Pinnacles, Searles Valley*	Access Road
5	387	1976	Hearn, Joseph E.	*Archaeological-Historical Resources Assessment of Proposed Cemetery Canyon Channel - Zone 6 - File 6-806/1.00*	-
6	565	1977	Kaldenberg, Russell L.	*Archaeological Reconnaissance Report Form: Continental Telephone Ridgecrest-Trona Undergrounding*	Argus LNG, ZZ
7	666	1978	Kaldenberg, Russell	*Archaeological Clearance of the Proposed Magnet-Telluric Survey Sites in the Red Mountain Planning Unit*	-
8	765	1979	San Bernardino County Museum Associations	*Paleontologic, Archaeologic, Historic, and Biologic Resources Assessment, Tract 10272, San Timoteo Canyon Area, San Bernardino County, California*	-
9	786	1979	Sutton, Mark Q.	*Cultural Resources: LA 087978, Searles Lake*	-
10	854	1979	Sutton, Mark Q.	*Sodium Lease Renewals, Searles Lake*	-
11	855	1979	Sutton, Mark Q.	*Cultural Resources Assessment, Sodium Lease Renewal, Searles Lake*	-
12	977	1980	Sutton, Mark Q.	*Sand and Gravel Survey, Trona*	-
13	1081	1981	Smith, Gerald A., and Michael K. Lerch	*Environmental Impact Report for P & V Enterprises Minor Subdivision to Create 560 40 Acre Lots on 22, 400 Acres, Kramer Junction, (MS/79-0486/D17-569N/MSD79-0485), Cultural Resources Assessment Based on a Review of the Available Literature*	G
14	1449	1984	Weil, Edward et al	*Cultural Resources Literature Search, Records Check and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project*	-
15	1479	1985	Dames and Moore	*Mead/McCullough-Victorville/Adelanto Transmission Project Technical Report: Volume IV, Cultural Resources*	A-C Staging Area
16	1527	1985	Raven, Christopher, and Shelly Raven	*Archaeological Reconnaissance of the Argus Cogeneration Expansion Project: the Plant Site*	-
17	1528	1985	Raven, Shelly	*Addendum 1: Archaeological Reconnaissance of the Argus Cogeneration Expansion Project: Water Canyon Well-Field and Pipeline*	-
18	1529	1985	Norwood, Ken S.	*Addendum 2: Archaeological Survey of Additional Water Facilities Associated with the Argus Cogeneration Expansion Project*	-
19	1556	1986	Underwood, Jackson	*Summary of Archaeological Survey for the Argus Cogeneration Expansion*	-
20	1570	1986	Hammond, Stephen R.	*Negative Archaeological Survey Report: Route 395, Post Mil 52.0, Materials Site*	-
21	1632	nd	nd	nd	-

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
22	1748	1987	Brown, Roderick, S.	*Cultural Resource Assessment: Solar Energy Generating System (SEGS) VIII, Harper Lake, San Bernardino County, California*	-
23	1769	1988	Goodman, II, John D.	*Cultural Resource Assessment: Realignment of Access Line into the Kramer Junction Substation, San Bernardino County*	-
24	1803	1988	Goodman, II, John D.	*Cultural Resource Assessment: Solar Energy Generating System (SEGS) Site, Pipeline, and Transmission Line, Harper Lake*	A-C Staging Area
25	1907	1989	Taylor, Thomas T.	*Archaeological Survey Report: Inyokern-Kramer 220Kv Transmission Line Conductoring Project: Tower Sites, Pulling Areas, Sleeve Areas and Wire Setups, Kern and San Bernardino Counties, California*	A-C Staging Area, F, G, H, Access Road
26	1908	1989	Taylor, Thomas T.	*Addendum to Cultural Resource Assessment: Kramer-Victor 115kV Transmission Line Project Historic Documentation and Evaluation*	-
27	1909	1989	Hampson, R. Paul	*Cultural Resource Assessment: Kramer-Victor 115kV Transmission Line Project*	-
28	1979	1989	New Mexico State University	*Cultural Resource Report for the All American Pipeline Project: Santa Barbara, California to McCamey, Texas and Additional Areas to the East Along the Central Pipeline Route in Texas*	-
29	2032	1989	York, Andrew	*Archaeological Inventory of a Proposed Fiber Optics Cable Route Between Ridgecrest and Helendale, California*	-
30	2075	1990	Hampson, R. Paul, and Elizabeth Skinner	*Site Assessment and Recordation for Solar Energy Generating System (SEGS) IX and X, Harper Lake, San Bernardino County*	-
31	2128	1990	Parr, Robert E., Richard Osbourne, and Mark Q. Sutton	*Archaeological Inventory, Testing and Evaluation for the Southern California Edison Kramer-Victor 220 KV Transmission Line Project*	-
32	2177	1989	Taylor, Thomas T.	*Archaeological Survey Report: Inyokern-McGen-Searles Nos. 1 & 2 115kV Transmission Line Project, San Bernardino County, California*	ZZ
33	2211	1990	Young, Bertrand T.	*Archaeological Inventory of a 137.1 Mi long by 200 Ft Wide (3316.9 AG) Segment of the Proposed Wycal Pipeline Corridor in San Bernardino County, California*	-
34	2302	1982	Ericson, Jonathon E., R. E. Taylor, Rainer Berger	*Peopling of the New World*	-
35	2388	1990	McGuire, Kelly R.	*A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona*	-
36	2441	1991	York, Andrew	*Archaeological Inventory of a Proposed Fiber Optics Cable Route Between Ridegecrest and Helendale, California*	-
37	2651	1992	Blair, Lynda A.	*Kern River Gas Transmission Company, Adelanto Lateral Alternative "A," San Bernardino County, California*	A-C Staging Area
38	2796	1993	McKenna, Jeanette A.	*Cultural Resources Investigations, Site Inventory and Evaluations, The Cajon Pipeline Corridor, Los Angeles and San Bernardino Counties*	-

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
39	2864	1993	Glover, Leslie C., and Kelly R. McGuire	*A Cultural Resources Inventory and Limited Evaluation of a Portion of the Proposed Mojave Pipeline Expansion: Kramer Lateral Corridor and Daggett Compressor Station, San Bernardino and Kern Counties, CA*	A, B, C, D, E, F, G, H, I, K, L, M, N, O, Access Road
40	2865	1993	Glover, Leslie C.	*A Cultural Inventory of a Portion of the Proposed Mojave Pipeline Expansion: Trona Lateral Corridor, San Bernardino County, CA*	Argus LNG, ZZ, Access Road
41	2869	1992	Sutton, Paula A.	*US 395 Repaving*	E, Access Road
42	3070	1995	York, Andrew, W. G. Spaulding, G. Davis, D. Powers, and T. Wahoff	*Class III Cultural Resources Inventory for Los Angeles Department of Water and Power Mead to Adelanto Transmission Line Project: MT General, Kramer and Adelanto Divisions*	Staging Area A
43	3115	1996	Mackey, Barbara J.	*Letter Report: Monitoring of "The Brave" at the Kelley Mine Site, CA-SBR-8315H, Red Mountain, San Bernardino County, CA. 31PP*	A-C Staging Area, A
44	3134	1977	Kaldenberg, Russell L.	*Willow Spring Grazing Improvement*	-
45	3193	1978	Stumpf, Gary	*Chaparrell Mc Enduro Race CA-060-SR7-12(I)*	N, O, Access Road
46	3238	1996	Love, Bruce, and Bai "Tom" Tang	*Identification and Evaluation of Historic Properties: Trona-Westend Transportation and Utilities Row Project, San Bernardino County, CA*	Argus LNG
47	4101	2000	Bergin, Kathleen and Curt Duke	*Results of a Cultural Resource Assessment for PBMS Facility CM 670-01*	-
48	4426	1999	Self, William	*Archaeological Site Testing to Determine National Register Eligibility Sites P1582-2 [SBR-2628] & SBR-7202, San Bernardino County, CA*	A-C Staging Area
49	4910	2002	Duke, Curt	*Cultural Resource Assessment: AT&T Wireless Services Facility No. C613, San Bernardino County, California*	-
50	4911	2000	Love, Bruce	*Identification and Evaluation of Historic Properties: AT&T Wireless Site 613.1, Westend, San Bernardino County, California*	-
51	5116	1998	William Self Associates, Inc.	*National Archaeological Database Information Sheet, Cultural Resources Assessment of the Southwest Gas Corporation Pipeline for the High Desert Power Project, San Bernardino County, California*	-
52	5326	2002	William Self Associates, Inc.	*Report on Construction Monitoring Kramer Junction Expansion Project, Line 6905, San Bernardino County, California*	-
53	5328	2005	Schmidt, James J.	*Southern California Edison Company Pappas 33kV Deteriorated Pole Replacement Project*	-
54	5329	nd	Billat, Lorna	*Request for SHPO Review of FCC Undertaking, Atolia/CA-01018*	-
55	5330	2002	Romani, John	*Negative Archaeological Survey Report: Shangrila 12kV, Joburg 2.4kV and Pappas 33kV Deteriorated Pole Replacement Project*	-
56	5782	2007	Hatoff, Brian	*Verizon Wireless Cellular Tower Site-Trona*	-
57	5783	2006	Tang, Bai "Tom" et al.	*identification and Evaluation of Historic Properties: Argus-to-Westend Stem and Condensate Transfer Pipelines Project, Searles Lake Area, San Bernardino County, California*	-

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
58	5784	2007	Byrd, Brian	*Archaeological Survey of 2,344 Acres near the Lake China Overflow Channel, NAWS China Lake, San Bernardino and Kern Counties*	-
59	5822	2007	Puckett, Heather R., Paige M. Peyton, and Mari Parke	*Inventory and Evaluation of Historic Military Period Archaeological Sites, Edwards Air Force Base, California, Volume I: Report of Findings*	A-C Staging Area
60	5823	2004	US Army Corps of Engineers	*Final: Mines and Mining-Related Sites on Edwards Air Force Base, California, A Phase II Cultural Resources Evaluation of 75 Mining-Related Sites and Thematic Synthesis, Volume I*	A-C Staging Area
61	5827	2004	D'Arcangelo, Michael	*Archaeological Survey of the Southern and Western Portions of the Security Perimeter Fence Line, Naval Air Weapons Station, China Lake*	-
62	6091	2000	Scott, David J.	*Cultural Resources Inventory Report, Circle R Ranch, Project #99-153*	-
63	6132	2002	Strother, Eric, Marin Pillous, Allen Estes, James Allan, and William Self	*Report on Construction Monitoring Kern River High Desert Lateral Pipeline Project San Bernardino County, California*	-
64	6134	2001	Blair, Lynda M., Jeffrey R. Wedding, William G. White, Diane L. Winslow, Susan Murphy, David Smee, Wendy Andrejack, and Amy Brock	*Cultural Resource Class I and Class III Investigations for the Proposed 2003 Kern River Expansion Project, California*	A-C Staging Area, A
65	6223	2007	Jordan, Stacey C.	*Archaeological Survey Report for Southern California Edison Company DSP- Beechers 2.4 to 12kV Cutover Project on Edwards Air Force Base, San Bernardino County, California*	-
66	6225	2007	Romani, John F.	*Negative Archaeological Survey Report: Southern California Edison Kramer-Tortilla 115 kV Deteriorated Pole Replacement Project, Edwards Air Force Base, San Bernardino County, California*	-
67	6233	1998	Keswick, Jan, and Camille Juliana	*Rehabilitate Indian Cove Amphitheater, Joshua Tree National Park, California*	-
68	6330	1996	Mackey, Barbara, Judy Berryman, Blanton Owen, and Laurie Walsh	*Class III Inventory of Kelly Mine (CA-SBR-8315H) San Bernardino County, California*	-
69	6336	2002	Molenaar, Molly, Donald Shannon, Raena Ballantyne, and Heather Stettler	*The 2003 Kern River Expansion Project: Native American Consultation and Identification of Traditional Cultural Places*	A-C Staging Area
70	6623	2009	Austerman, Gini, Kevin Hunt, Robert Ramirez, and John Dietler	*Cultural Resources Survey for the Kramer Junction Solar Energy Center Project, San Bernardino County, California*	-
71	7381	2011	Wilson, Stacie, M. K. Meiser, and Theodore G. Cooley	*Final Cultural Resources Class III Survey Report for the Proposed Mojave Solar Project and Lockhart Substation Connection & Communication Facilities, San Bernardino County, California*	B, Access Road

Table 5. Records Search Report Results *continued*.

List No.	Report No. (SB-)	Year	Author	Title	Overlapping Project Locations
72	7382	2011	Thomas, Jennifer, and Courtney Higgins	*Cultural Resources Inventory of a Hydrostatic Pressure Test Segment on L-300A between Mileposts 180.94 and 188.4084, Kern and San Bernardino Counties, California*	A-C Staging Area
73	7383	2011	Eddy, John J.	*Widen and realign the State Route 58; District 08, Kern/SBD County, Route 58, PM 143.5-12.9, E-FIS Project 08-0000-0616*	A-C Staging Area, A, C
74	7390	2012	Switalski, Hubert, and Sonia Hutmacher	*A Class III Archaeological Survey Report for Southern California Edison Company's Replacement of Eight Deteriorated Power Pole Structures on the Pappas 33kV Distribution Circuit (6086-4800, 0-4888), Bureau of Land Management, Ridgecrest Field Office, Near Atolia, San Bernardino County, California*	-
75	7397	2011	Losekoot, Frank	*A Confidential Archaeological Letter for the Headwaters Fuel Modification Project for the County of San Bernardino, Hazardous Tree Removal Operations, San Bernardino County, California*	-
76	7587	2010	Duran, Christopher	*Downs Substation Cultural Resources Survey, San Bernardino and Kern Counties, California*	Argus LNG, Z, ZZ, Access Road
77	7588	2014	Thomas, Jennifer	*Archaeological Inventory of Hydrostatic Strength Test Segment T-358-14 within Naval Air Weapons Station (NAWS) China Lake, Kern and San Bernardino Counties, California.*	-
78	7895	2014	Jones, Gary	*Notification of CARIDAP and Extended Phase 1 Investigations for U.S. Highway 395 Median Buffer and Shoulder Widening Project (EA 0N970)*	-
79	7899	2013	Strudwick, Ivan H.	*Cultural Resource and Paleontology Monitoring Report - SCE Sandlot (Water Valley) Project, Victorville-Kramer Junction- Barstow- Daggett, San Bernardino County, California*	-
80	7944	2014	Honey, Linda	*Draft Phase I Cultural Resources Assessment for the Fremont Valley Preservation Project Proposed Transmission Line and Pipeline, Kern County and San Bernardino County, California*	-
81	8192	2014	Hall, Jacqueline	*Archaeological Survey Report for the Southern California Edison Company Replacement of One Deteriorated Power Pole on the Corum-Rosamond/Goltown Lancaster 66 kV Circuit, TD812654 T/L and Three Deteriorated Power Poles on the Kramer-Holgate 115 kV Circuit, TD805461 T/L, Kern and San Bernardino Counties, California*	-
82	31111062	2015	Laska, Robin E.	*Historical Resources Record Search: CC-61 WO 31111062*	-
83	8031/KE-4476	2013	Higgins, Courtney et al.	*Cultural Resources Inventory of 5,300 Acres for the PG&E Pipelines 300A and 300B, San Bernardino and Kern Counties, California*	A-C Staging Area, A, B
84	KE-4472	2014	Honey, Linda	*Phase 1 Cultural Resources Assessment for the Fremont Valley Preservation Project Proposed Transmission Line and Pipeline, Kern County and San Bernardino County, California*	A-C Staging Area, F, G, H, Access Road
85	nd	2011	Far Western Anthropological Research Group, Inc.	*Cultural Resources Constraints Analysis for Gas Hydrotesting at T-57 on Gas Transmission Line 300A*	A-C Staging Area
86	nd	2012	Foutch, Amy	*T-57-11 Addendum: Access Road Surveys, San Bernardino County, California (Letter Report)*	A-C Staging Area
87	nd	2014	Higgins, Courtney	*Cultural Resources Study for Trona Tap Project, Kramer Junction, San Bernardino County, California (letter report)*	A, B, C, Access Road

Other prehistoric site types roughly correspond to those employed by Byrd et al. (2011) for the Mojave National Preserve.

Quarries are areas where toolstone was directly acquired from bedrock sources. Most reduction at these sites is primary (i.e., exterior core).

Pavement Quarries reflect primary or secondary reduction of surface "float" sources (i.e., pebble-, cobble-, and boulder-sized material) on ancient (Tertiary- to Pleistocene-aged) pavements and fanglomerates. These can incorporate fewer than a dozen to a few thousand SRLs. For this project, pavement quarries incorporate as few as two SRLs, some of which, or in combination, may have incorporated fewer items than the minimum number required for a large SRL. However, in such instances it is reasoned that it was more appropriate to designate and record closely associated (i.e., ≤15 meters apart) small SRLs as a single pavement quarry site, rather than separate isolates.

Lithic Reduction Stations are scatters of flaked stone debitage that may include cores. However, these tend to be more dispersed than SRLs, incorporate a greater diversity of toolstone, and lack any clear indication of the number of reduction events.

Campsites contain debitage as well as flaked stone tools such as bifaces, flake tools, and/or projectile points.

Limited Occupations include ceramics and/or ground stone artifacts or bedrock milling features, in addition to debitage and/or flaked stone tools.

Complex Occupations contain evidence of sustained occupation in the form of midden sediment, intact hearth features, and/or residential structures, in addition to the debitage, flaked stone tools, and ceramics and/or ground stone. Many of these sites are in rockshelter or cave settings, or around springs and other water sources.

Rock Art includes isolated or clustered pictographs (painted designs) and/or petroglyphs (pecked, incised, or scratched designs), and can occur alone or in association with other site types.

Features can include rock rings, cleared circles ("sleeping circles"), trails, cairns, rock alignments, bedrock milling features, and/or agave roasting pits (among others; e.g., Blair and Fuller-Murillo 1997) that appear to be prehistoric in age. These can occur alone or in association with other types.

Prehistoric isolates included those resources that consist of one or two artifact types, representing five or fewer artifacts within 15 meters of each other (i.e., one to five flakes = isolate, one sherd + four flakes = isolate). Like historic-era bottle drops, the shattered remains of single ceramic vessels were also recorded as isolates, as were small SRLs. As noted, however, artifact associations incorporating a flaked stone tool, in any quantity, were documented as sites (excepting SRLs).

Historic-era Sites

Historic-era sites included those resources containing three or more different historic-era (i.e., ≤1968) artifact types within 15 meters of one another, or 10 or greater artifacts of representing one or two types within similar proximity (e.g., one can + one glass sherd + one nail = site; 11 cans = site). All historic-era features were also recorded as sites. Historic-era site types common in the Mojave Desert included the following, as outlined in the California Department of Transportation's (Caltrans; 2013) *A Historical Context and Archaeological Research Design for Work Camp Properties in California:*

Work Camps were living spaces provided by employers for their employees, often including food and other services. These often occurred in isolated locations where housing and other necessities were not available. Property types include evidence of residences (e.g., tent platforms, bunkhouses), support facilities (e.g., cookhouse, bathhouse, office), infrastructure (e.g., power, roads, water), industry (e.g., blacksmith, warehouse, quarry), and refuse disposal (e.g., pits, dumps).

Mining Sites can individually or collectively include adits, shafts, mills, mining claim cairns, and prospects.

Ranches/Community Sites include agricultural homesteads, domestic households, and townsites. Domestic features can include aspects associated with household activities—prominently, the house itself—and also may encompass a cellar, privy, well, sheet refuse, trash dumps, and cisterns. Agricultural features are made up of such structures as barns, sheds, drying kilns, milk houses, watering troughs, pens, corrals, workers' residences, and privies.

Refuse Deposits are secondary trash features that represent a single dumping episode, or a series of refuse dumping events at the same location. Refuse Deposits are not directly related to a larger surrounding or adjacent site such as a habitation, commercial location, work camp, or industrial site—in these examples, refuse would likely be identified as features of these sites. Refuse Deposits are often found adjacent to abandoned roads and railway lines, which facilitated transport of the refuse by truck or automobile; the human activities that produced the discarded artifacts occurred elsewhere.

Roads, Trails, and Railroads include both paved/maintained, and unpaved/unimproved vehicle (automobiles and wagons) travel routes (e.g., Wagon Roads and Stage Roads, and Improved Roads and State Highways). These linear resources are generally encountered as small preserved segments, or as limited stretches passing through project boundaries, and may or may not receive site trinomials. *Railroads* are another type of transportation corridor that are treated separately. Associated property types include in-use and abandoned railroad beds, sidings/stations, and refuse deposits.

Utility Sites include water conveyance systems and supporting structures (e.g., canals) and power transmission lines and substation locations. Under authority 16 U.S.C. 470v; 36 CFR 800.14(c), dated April 1, 2002, the Advisory Council on Historic Preservation exempts Section 106 considerations of effects to in-use natural gas pipelines of historical age (i.e., ≥50 years).

Military Sites include temporary camps associated with large-scale WWII-era and Vietnam-era training exercises, and can include railroad sidings, airfields, hospitals, supply depots, maneuver areas, and weapons test ranges. WWII-era aerial bombing targets associated with the Victorville Precision Bombing Range are also regionally common. These variably include asphalt target rings, concrete foundations, earthen-berm features, barbed-wire fence components, and often copious scatters of near-complete and fragmented test bombs, typically over a few square kilometers around target areas (Foley and Wright 2008).

Historic-era isolates included those resources containing fewer than three artifact types and between one and nine artifacts of historic age total within 15 meters of each other (e.g., one can + seven pieces of glass = isolate; nine cans = isolate). Survey markers were recorded as isolates, as were single bottle drops.

L-311 RECORDS SEARCH RESULTS

Of the 87 previously recorded sites identified within the L-311 records search area, most (ca. 69%) are historic era, a little over a quarter are prehistoric, two are multi-component, two are of unknown vintage, and one is modern.

Prehistoric Resources

A total of 24 non-isolate cultural resources associated with the L-311 records search area contain prehistoric components (22 prehistoric, two multi-component), not including two historic-era refuse deposits associated with prehistoric isolates (i.e., SBR-6572/H and SBR-15117/H), and a modern looter's pile (SBR-29368). None of these retain temporally diagnostic artifacts, although less than half (ca. 41%) are features (i.e., milling gear clusters, Fire-altered rock [FAR] clusters, and rock rings) that may preserve dateable material (Table 6). All other non-isolate prehistoric resources are campsites (32%) or lithic reduction stations (27%). Over half (ca. 64%) of prehistoric sites contain flaked stone, over a third (ca. 36%) possess ground stone, and 9% have fire-altered rock (Table 7).

Historic-era Resources

A total of 62 (60 historical and two multi-component) non-isolate cultural resources within the L-311 records search area have historic-era components, including the two aforementioned refuse deposits with prehistoric isolates. Of these, most (ca. 87%) can be sorted into at least one of four intervals extending from AD 1848 to after 1945 (Table 8). Among temporally characteristic components, equal numbers (72% each) date to between 1914 and 1945 or date after 1945. Cans are associated with the bulk of historic-era components (ca. 63%), although over half (ca. 55%) contain glass (Table 9). Structural components are present among nearly 23% of non-isolate historic-era resources, and ceramics at only 10%.

GLO and Topographic Map Review

Reviews of historical topographic quadrangles identified five historic-era linear resources that overlapped proposed access roads, including segments of the Randsburg Railway (later the AT&SF) visible on the 1911 Randsburg 15-minute series topographic map (SBR-5731H; also see forward to E*G-X34*, page 63), and four named (i.e., Pinnacle/Teagle Wash and Stevens Mine) and unnamed dirt roads visible on the 1953 Ridgecrest and 1954 Boron 15-minute series topographic maps (see forward to *RB-X5*, and *RB-X7* through *RB-X8*, page 67).

INVENTORY EXPECTATIONS

These data suggest that only a few prehistoric resources are likely to be found in the L-311 project area, and that the sites will point to small-scale resource exploitation, and not necessarily dedicated toolstone reduction. For historic-era resources, trash scatters will probably be comparatively prolific along the L-311 corridor, most of which probably date to the early to mid-twentieth century.

Table 6. Prehistoric Components in L-311 Search Area.

Prehistoric Component Site Type	Sites		Component Era				
	Total Prehistoric	%	Lake Mojave	Pinto	Gypsum	Saratoga Springs/ Shoshonean	Unknown Prehistoric
Feature (Milling Gear, FAR, Rock Ring)	9	40.9	-	-	-	-	9
Campsite	7	31.8	-	-	-	-	7
Lithic Reduction Station	6	27.3	-	-	-	-	6
Total	**22**	**-**	**-**	**-**	**-**	**-**	**22**

Note: FAR – Fire-altered rock.

Table 7. Prehistoric Resource Constituents.

Prehistoric Constituents	Sites with	%
Flaked Stone	14	63.6
Ground Stone	8	36.4
FAR	2	9.1

Note: FAR – Fire-altered rock.

Table 8. Historic-era Components in Project Search Areas.

Historic-era Component Site Type	Sites			Component Era				
	Total Historic-era	Total Multi-component	%	1848–1880	1880–1914	1914–1945	Post-1945	Unspecified Historic-era
Community	7	-	11.3	-	-	3	5	-
Mining	3	-	4.8	-	-	2	1	1
Railroad	2	-	3.2	-	2	1	1	-
Refuse Deposit	32	2	54.8	1	13	25	21	6
Road	8	-	12.9	-	2	5	6	-
Utility	6	-	9.7	-	1	1	5	1
Water Conveyance	2	-	3.2	-	-	2	-	-
Total	**60**	**2**	**-**	**1**	**18**	**39**	**39**	**8**
% Components	-	-	-	1.6	28.1	60.9	60.9	12.5

Table 9. Historic-era Resources Constituents.

Historic-era Constituents	Sites with	%
Glass	34	54.8
Cans	39	62.9
Ceramics	6	9.7
Structural	14	22.6

CHAPTER 5. NATIONAL REGISTER ELIGIBILITY CONSIDERATIONS

The project area is within or intersect lands managed by federal, state, and local agencies and thus require compliance with (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR § 800, revised 2004); and (2) the California Environmental Quality Act (Public Resources code, Section 21000 et seq., revised 2005), which mandates federal and California public agencies to consider the effects of projects on historic properties. Historic property significance is defined at the local, state, or national level. All sites documented within the in the APE for the current project were evaluated to the extent possible based on visible surface artifacts and features. Where documentary research provided additional information about historic-era resources, efforts were made to identify historically referenced structures and activity areas. Sites requiring extensive background research or subsurface excavation were not evaluated but were recommended for Phase II evaluations if they were deemed to be unavoidable by the proposed project. In the following sections, prehistoric and historic-era resources are defined, National Register eligibility criteria are outlined, and prehistoric and historical research themes pertinent to considerations of site eligibility are discussed in detail.

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY CRITERIA

The National Historic Preservation Act (54 USC § 300101) requires the lead federal agency for a project to consider effects to significant cultural resources ("historic properties") from a proposed federal undertaking. This includes identification of historic properties (usually through archival research, field inventories, public interpretation, and/or test evaluations), assessment of potential adverse effects to those properties, and, where necessary, development of measures to resolve adverse effects.

Under the Act, a "significant" cultural resource is one that is listed on, or eligible for listing on, the National Register. Criteria for eligibility are defined in the National Historic Preservation Act of 1966, as amended. To be considered eligible for the National Register, a site must "possess integrity of location, design, setting, materials, workmanship, feeling, and association" (36 CFR § 60.4), and:

(A) be associated with events that have made a significant contribution to the broad patterns of our history; or

(B) be associated with the lives of persons significant in our past; or

(C) embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(D) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR § 60.4).

Criterion A is rarely used in prehistoric contexts but can be applied if a site represents a "type site" for a particular archaeological complex or time period. Criterion B often has less relevance, as the significance of a particular prehistoric person is rarely known. Criterion C also has limited applicability, but can be appropriate at sites with rock art, at sites where specialized items (e.g., charmstones) were mass-produced, at locations with particularly artistic and masterful rock art occurs, or where outstanding architecture is represented (e.g., a cliff dwelling or rock ring village complex). A site's ability to yield important information is determined by whether, and to what degree, the data contained in that site can be used to address issues pertinent to local and regional prehistoric and historical research, as defined by specific themes or domains and questions.

Historic-era resources can be evaluated using any of these four criteria, or any combination thereof. Under Criterion A, a historic-era site may be directly related to some major event in state, local, or national history—for example, the discovery of gold at Sutter's Mill in Coloma. Such a site might also be eligible under Criterion B, if the historical event was tied to an important individual or group (in this example, John Sutter and John Marshall). Criterion C is most often invoked for standing structures (bridges, buildings, etc.) that represent high achievement in engineering, art, architecture, and the like. Critical to addressing eligibility under Criterion D is identification of the kinds of important information that are sought and demonstration that the property is likely to contain that information. In *National Register Bulletin 36, Guidelines for Evaluating and Registering Archaeological Properties* (Little et al. 2000), a five-step process for determining the research potential of an archaeological site is presented (from Caltrans 2009:195):

1. Determine the property's structure and content, and categories of data it may contain.
2. Identify the appropriate historic context by which to evaluate it.
3. Identify important research themes and questions that the data it contains may be able to address.
4. Considering the property's integrity, assess whether the data it contains are of sufficient quality to address these important research themes and questions.
5. Identify the important information that an archaeological study of the property is likely to contain.

RESEARCH DESIGN

Prehistoric Research Domains and Questions

The following sections detail significant research domains and questions pertaining to the evolution of Mojave Desert Native American lifeways from the Terminal Pleistocene through the Early Holocene, as outlined in the prehistoric context. These will guide considerations of site eligibility under Criterion D, and derive directly from McGuire et al. (2015), with minor modification, further incorporating research elements from Byrd et al. (2011) and various MCAGCC projects (e.g., Byerly 2015, 2017; Byerly and Roberson 2016). A prehistoric site may be considered eligible for listing under Criterion D if it is deemed to possess significant data speaking to these themed questions, and also possesses sufficient temporal and structural integrity to meaningfully segregate prehistoric components.

Terminal Pleistocene/Early Holocene Human Presence and Adaptations

- When is Clovis technology first evident in the Mojave Desert, and how long does it persist?
- Similarly, to what extent does the Clovis tradition overlap with concave-base and stemmed point technology, and what is temporal relationship of these forms with Clovis?
- To what extent did shallow lakes and associated marshes persist through the Early Holocene in the Mojave Desert?
- What were the suites of plant and animal foods that attracted early foragers to wetland environments and what was targeted?
- Do early sites around Mojave Desert basins represent short-term family camps used for radial foraging activities in the adjacent wetlands, or longer-term settlements that sponsored logistical hunting efforts alongside toolstone acquisition?
- Does the technological and source composition of Early Holocene lithic assemblages reflect either residential or logistical movements?

- To what degree does the material type and source diversity recognized in Early Holocene sites reflect the inter-group exchange of materials, information, and mates during a time of very low human population densities?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable Terminal Pleistocene and/or Early Holocene diagnostics (i.e., Clovis, Western Stemmed, and/or non-Humboldt Concave-base projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy and toolstone preferences. Those Terminal Pleistocene and/or Early Holocene sites associated with features will be most significantly regarded, as will those incorporating visible paleoenvironmental indicators, such as surface-exposed organic sediment.

Land Use and Subsistence during the Middle Holocene

- Did arid Middle Holocene conditions lead to a decline in land-use intensity, or perhaps partial abandonment of parts of the Mojave Desert?
- Was there a north-south gradient in resource response, and thus differential representation of low elevation sites, due to intra-regional variability in Middle Holocene warming?
- To what extent do human adaptational characterizations of Middle Holocene hunter-gatherer groups (i.e., small, territorially extensive, mobile foraging bands) apply across the Mojave Desert?
- To what extent do associations of Pinto point and other forms, such as Elko, Western Stemmed varieties, and Deadman Lake, speak to the utilization of diverse technologies by a single group, or represent different groups?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable Middle Holocene diagnostics (i.e., Pinto and/or Deadman Lake projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy and toolstone preferences. Those Middle Holocene sites associated with features will be most significantly regarded, as will those incorporating visible paleoenvironmental indicators, such as surface-exposed organic sediment.

Early Late Holocene Economies and the Emergence of Complex Social Systems

- Were early Late Holocene logistical forays organized out of seasonally or annually stable semi-sedentary residential bases, or shorter-term habitation areas couched within a system of more frequent residential mobility?
- Are early Late Holocene residential sites situated nearer sources of perennial water than ephemeral water?
- Do logistically organized hunting activities increase across the Mojave Desert during the early late Holocene?
- Was the procurement of regionally prolific jasper and chalcedony largely a Gypsum Period phenomenon?

- Is the Holocene source production profile of Coso obsidian seen throughout the Mojave Desert?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable early Late Holocene diagnostics (i.e., Gypsum, Elko, and/or Humboldt projectile points) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy, toolstone preferences, and procurement source (particularly obsidian). Those Early Late Holocene sites associated with features and/or faunal remains will be most significantly regarded. Sites with evidence of long-distance trade, such as the presence of *Olivella* shell beads, will also be considered particularly significant.

Late Holocene Economic Transformations

- What caused the reorganization of land-use systems around 900 cal BP? Similarly, what fostered the apparent collapse of Coso obsidian and rock art production?
- How did the introduction of the bow-and-arrow impact regional bighorn sheep populations and attendant hunting strategies?
- When did intensive pinyon exploitation begin in the uplands surrounding the Mojave Desert? Does this resource make its way down to lowland habitations?
- When are Numic populations first apparent in different parts of the Mojave Desert?

Data Requirements for Eligible Sites

Sites considered eligible for listing under this research domain must possess clearly identifiable terminal Late Holocene diagnostics (i.e., Rosegate, Desert Side-notched, Cottonwood projectile points, and/or typeable ceramics) and/or other dateable materials (e.g., obsidian and/or feature charcoal), as well as minimally include sufficient debitage to be informative with regard to reduction strategy, toolstone preferences, and procurement source (particularly obsidian). Those terminal Late Holocene sites associated with features and/or faunal remains will be most significantly regarded. Sites with evidence of long-distance trade, such as the presence of *Olivella* shell beads, will also be considered particularly significant, as will those with brownware.

Historical Research Domains and Questions

Generally, the most data-rich features on residential sites are concentrations of domestic artifacts that date to a short time period and can be identified with a particular household or population. Such concentrations of secondarily deposited assemblages are often found in hollow features (such as abandoned wells and privies, and trash pits) that are often subsurface. These deposits are typically made up of household ceramics, glass containers, food bone, and personal accoutrements. Standardized principles designed to assess the archaeological research potential of such historic-era artifact deposits have been widely and effectively used in California since their formalization some 15 years ago (Costello et al. 1998; McIllroy and Praetzellis 1997). Captured by the mnemonic AIMS-R, the principles in this approach address the Association, Integrity, Materials, Stratigraphy, and Rarity of the resource. The approach has also been extended to evaluating the research potential of other types of individual features, as well as to determining the eligibility of sites as a whole (Caltrans 2007:212–213, 2009:196–197). As these principles apply to all of the resource types discussed below, they are briefly defined here:

- *Association:* The ability to link an assemblage of artifacts and other cultural remains with an individual household, an ethnic or socio-economic group, or a specific activity or property use.
- *Integrity:* The physical condition of the site or artifact deposit should be in generally the same state as when it was abandoned; exceptions may include a tightly dated site with unequivocal association.
- *Materials*: The potential for interpretation generally increases with the quantity and variety of materials present. A lack of diversity, however, may also be particularly informative.
- *Stratigraphy*: The presence of discrete and intact depositional units—either vertical or horizontal—increases the interpretive possibilities of the site or feature for both temporal differences and distinguishing activity areas.
- *Rarity*: This attribute encompasses those archaeological remains which are uncommon and, because of this, may be important even if they fail to meet other criteria.

Applicable historical regional research domains are related to the major site types for the Mojave Desert, informed by the contextual information provided (i.e., work camps, mining sites, ranches/communities, refuse deposits, water conveyance systems, railways, roads, and military sites. Discussions of each were excerpted directly or with modification from Costello (in Hildebrandt et al. 2016) and Maniery et al. (2016). We will not be evaluating built environment resources (such as communities, water conveyance features, or gas and electric transmission lines) unless it becomes clear that they cannot be avoided by the proposed project. The following sections outline some of the data requirements necessary to evaluate historic-era sites.

Work Camps

Work Camps not only reflected the designs of the employers, but also the reaction of the employees to these conditions. Physical plans for corporate communities often reflected ideals of social interactions on the part of the company: segregation of populations by economic, cultural, or racial affiliations; control of recreational drinking or fraternizing; and health measures to promote sanitation. Four research themes are identified for studying Work Camps: Camp Function, Design, and Conditions; Household Composition and Lifeways; Labor Organization and Management Policy, Immigration and Ethnicity; and Technology. Research questions may include:

- What are the dates of site occupation? Do these coincide with construction periods for adjacent features or structures?
- What is the physical layout of the camp? Is there evidence of structures or infrastructure?
- Was there distinctive landscaping associated with individual homes?
- Is there evidence of socio-economic differences between the refuse from different parts of the camp?

Data Requirements for Eligible Sites

Data requirements include discrete dateable domestic refuse deposits meeting AIMS-R criteria such as found in abandoned privies and cellars, and in refuse deposits and surface sheet refuse. They may also include structures and yard areas with good integrity and containing landscape features.

Mining Sites

As excerpted from Maniery et al. (2016:28) regarding mining sites aboard nearby MCAGCC, which encompasses several named mines incorporated into proposed (although not currently realized) districts, most such sites recommended as eligible preserve foundations, features, evident work and living areas, and concentrations of artifacts that convey a sense of time and place. These physical remains help interpret of a mine's layout, design, and operations, and reflect the importance of the mining industry to the region under Criterion A. In rare cases, the foundations and features at these sites retain adequate integrity to represent specific types of processing activities or extraction methods and have been found to meet Criterion C as a reflection of mining technology (also see Fryman 2012; Giles and Hardesty 1998; Hardesty 1997; Maniery et al. 2014; Schaefer and Duffield-Stoll 1996).

Most eligible sites were also found important under Criterion D for the wide range of features and artifacts that have the potential to yield new information regarding the develop of mining in the region. Researchers focus on chronological placement of the sites and have used data to explore technological aspects visible in the archaeological and documentary records, including ore extraction and beneficiation technology, as well as technological innovation and transfer and everyday consumerism (Giles and Hardesty 1998:70–77). Pertinent research questions, directly acquired from Maniery et al. (2014) based on Giles and Hardesty (1998), may include:

- Is there evidence of efforts to increase productivity through the application of new technologies?
- To what extent is a new technology employed over adaptive reuse of existing technology and is this evident in the archaeological record?
- Did changes in technology or management practices influence the layout of the operation or workforce?
- Are the technologies older than those commonly used during the same time period?
- What was the role of a particular business or operation in regional growth and economic development?
- Is there evidence of expensive or imported materials and technology?
- Who invested in the operation?
- Is there evidence of class segregation?
- Is there evidence of adaptive reuse of tools, artifacts, or other items?

Data Requirements for Eligible Sites

Data requirements for eligible sites include artifacts contained in discrete, undisturbed deposits, as well as specific documentary, archaeological, and/or oral interview information regarding technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy (Maniery et al. 2016:32–42).

Agricultural Properties: Small Ranches/Communities

Current research issues for rural ranch homesteads focus both on domestic household studies and on the ranch as an agricultural enterprise. Successful archaeological studies, coupled with thorough documentary research, provide important reconstructions of ranch economics, subsistence activities, social behavior, ethnic attributes, and demographics. When used as a comparative database, homestead sites can provide information on differences between urban and rural households, households from different regions, and homesteads from different time periods. Assessments can be made of how households with different attributes adapted to national and regional events. Archaeological studies also address technological and landscape issues, interpreting use of space as another measure of class, ethnicity, and modernization.

A Historical Context and Archaeological Research Design for Agricultural Properties in California (Caltrans 2007) was developed to serve as a framework for evaluations and to promote consistency and inter-site comparisons. It includes a historic context covering the historical events between 1850 and 1945 along with changes in the diversity of production and in innovative technologies. Six research themes are identified in the Agricultural research design (Caltrans 2007), and key feature types have been identified that support research within these themes (Medin 2008): Site Structure and Land-Use Patterns; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Specific research topics may include:

- What was the time period of site occupation?
- Is there evidence for multiple—contemporary or sequential—households occupying the site? Can these households be defined by demographics (age, gender, socio-economic status)? Is there evidence for occupation by distinct ethnic populations, particularly Chinese in recent decades?
- Is there evidence for changing patterns of agricultural practices? Did the site occupants respond to changes in agricultural technologies and practices taking place in the state and region?
- Is there evidence for identifying the workforce at the site, and changes in this population over time?

Data Requirements for Eligible Sites

Data Requirements include dateable features such as structure foundations and the water tank; and artifact deposits satisfying AIMS-R criteria such as found in abandoned privies and cellars, and in refuse deposits and surface sheet refuse. Evidence of changes in the site landscape including abandonment or renovations to structures and facilities, and new construction replacing older structures is also considered important. We do not plan to evaluate ranches or communities unless such sites cannot be avoided by the project (in which case they will be referred for formal Phase II evaluation).

Refuse Deposits

Specific research topics for refuse deposits may include:

- What is the age of deposit?
- What activities of the source population are reflected in the artifacts?
- What are the demographics of the source population including age, gender, and ethnicity?

Data Requirements for Eligible Sites

Data requirements include sufficient artifacts that can be dated to specific time periods to identify the time span of deposition. Particularly sensitive indicators are cans, which have an estimated one-year time lag between manufacture and deposition. Glass containers have and estimated seven-year time lag, while ceramics average 20 years (Adams 1977). Demographic information on the source population can often be determined by the types of artifacts present and their relative quantities. For example, temporary campsites are dominated by small food cans; those associated with aqueduct or railway construction often also contain containers from blasting powder. These camps are also confined in the project region to a narrow time-period of ca. 1908–1912. Domestic households with women and, perhaps, children typically contain ceramic tablewares and some decorative household items, as well as toys, cosmetics jars, and similar items. Architectural remains such as window glass and nails suggest the source population resided in a somewhat permanent structure, and not at an itinerant (tent) camp.

Roads and Trails

Documentary research for roads and trails attempts to identify them in meaningful stretches—from one key location to another to place their significance assessments within a historic context. However, these linear resources are generally encountered as small preserved segments, or as limited stretches passing through Cultural Resources Management (CRM) project boundaries. Methods of recording these transportation routes, therefore, allow for the overall resource to be addressed for its local, regional, or national importance and for the integrity appraisal—for those resources deemed potentially eligible to the National Register—to proceed on a segment-by-segment basis.

Significance assessments relate roads with the larger historic context of transportation development in the western United States. Caltrans' *Historical Trails and Roads in California, A Cultural Resources Planning Study* (Owens 1991) describes criteria for assessing the importance of California's historic roads with categories including communications, engineering, exploration and settlement, or historic landscapes. A classification system employing eight types of roads is proposed; roads in the project area fall into the categories Wagon Roads and Stage Roads, and Improved Roads and State Highways.

Roads, like water systems, are most often found eligible to the National Register under Criteria A and C: their association with important events or engineering accomplishments. Under Criterion D, the evolving route of a road is key to identifying the historical development of a region and the data potential of a road site is often satisfied once these routes and their associated features are recorded. The National Park Service devoted several issues of their publication *CRM* to roads: "Historic Transportation Corridors" (Vol. 16, No. 3, 1993); "The Automobile Landscape" (Vol. 19, No. 9, 1996) and "CRM and the National Trails System" (Vol. 20, No. 1, 1997). The National Park Service has also produced *The Preservation Office Guide to Historic Roads* to assist State Historic Preservation Officers evaluate these resources (Marriott 2010).

The construction and use date of the road segments will be verified, along with their relationships to historic routes. Attachment 4 of Caltrans' Programmatic Agreement (2004) identified as not eligible isolated segments of bypassed roads which were less than 50 years old; dating the segments is therefore a priority. Assessment of the historic-era road segments in the project area will also attempt to describe these roads, their locations, and their potential significance according to National Register criteria with greater clarity.

Utilities

Like roads and trails, water systems and transmission lines are researched in their entirety to provide a historic context for evaluation. Furthermore, they are often encountered in segments and are therefore incrementally assessed for integrity. Significance assessments relate water and transmission systems with the larger historic context of water and power development in the western United States, one of the most important influences on this region's economic development, politics, and settlement patterns.

Evaluation and interpretation of such features includes not only their physical identification on the ground (where extant), but the political motives, financing arrangements, and eventual abandonment all contribute toward understanding the importance of the facility. Most sites determined eligible to the National Register are important under Criterion A, association with important events; and secondly under Criterion C, and association with engineering values. While association with important persons (Criterion B) and information potential (Criterion D) are also represented, they are relatively rare.

Military Sites

Should military features be encountered in the project area, they will be evaluated for eligibility using the criteria outlined above (AIMS-R). Given the ubiquity of such features in the general area, and the fact that most do not retain a high degree of integrity (Carpenter and Maniery 2009), we do not anticipate encountering eligible sites related to military activity.

CHAPTER 6. METHODS

Far Western conducted linear surveys of all proposed access roads, and block transect surveys of all work locations, the latter of which include excavation areas, laydown areas, and staging yards, many of which overlapped. As such, although many more work locations are associated with the current project (see back to Table 1), only 30 consolidated locations were inventoried for the current project, as were over 21 miles of access roads, accounting for just over 526 surveyed acres incorporating the project APE (Table 10). Inventory and site recordation methods are outlined in the following sections. As noted, several locations were removed post-survey.

Table 10. Survey Acreages and Extents.

Location Type	Original Surveyed Acres
Access Roads	264.1
Locations	262.3
Total	**526.4**
Number of Consolidated Locations Surveyed (Excavation Areas, Laydown Areas, and Staging Yards)	30
Miles of Access Roads Inventoried	21.4

LINEAR SURVEY AREAS

Pedestrian survey of all access roads was conducted by two-to-four-person teams, with one person examining up to 15 meters from the sides of roads and bridge bypasses. One person each surveyed road edges within a buffer of 15 meters. For linear project areas extending greater than one mile (ca. 1,610 meters), survey proceeded following a flag-and-run strategy, whereby crews briefly documented newly encountered site-sized resources, including approximate dimensions, observed constituents, and central GPS locations, so that the sites could be fully recorded in a subsequent visit as to not unduly impede coverage progress.

BLOCK SURVEY AREAS

Pedestrian surveys of all project block areas (e.g., excavation areas, laydown areas, and staging yards – "Locations"), incorporating 50-meter peripheral buffers, proceeded in 15-meter interval transects by teams of two to four individuals. All newly found resources were recorded on encounter, and any previously recorded resources that were within or overlapped these block areas were also updated upon encounter.

RESOURCE RECORDATION

New resource documentation procedures applied broadly to most sites, regardless of age. However, selective recordation strategies were employed for certain high-density resources, such as prehistoric pavement quarries and historic-era refuse deposits. Where questions arose in the field about documentation efforts or where particularly large, complex sites were encountered, Far Western consulted directly with BLM to determine how best to proceed. To further expedite the recordation process, Apple® iPads® were employed to secure basic data and most photographs for sites and isolates, using the Survey123® application.

Upon encounter of new resources, crews broke from transect coverage to establish the character of the resource (i.e., site versus isolate), its relative age (i.e., prehistoric, historic-era, multicomponent), and assess its extent. For sites, crews conducted close-interval ground inspections, pin-flagged all observed cultural items (individual flakes, tools, features, etc., if not in extreme abundance). The distribution of pin-flags, in combination with landform and setting, served to delineate site boundaries. Efforts were extended to document site boundaries extending outside of project APE onto federal and state lands in full. Linear sites, such as trails, roads, and railroad routes, were only documented to 0.25 miles (ca. 400 meters) from the edge of the project APE onto federal and state lands.

Site datum, features, roads/trails, and diagnostic artifacts were georeferenced with a hand-held Trimble® Geo7x® GPS device, with which UTM coordinates (Zone 11N, NAD83, reflecting a 20-shot average for points) secured to submeter accuracy (i.e., ±50 centimeters). Wooden stakes or other permanent datum markers were not embedded as site markers, rather digital datums or site centroids were referenced.

Formed, ground, and/or otherwise diagnostic artifact data were documented following standardized protocol on Apple iPads. Only samples of lithic debris (ca. 25 pieces) were tallied and characterized among prehistoric or multicomponent sites with greater than 50 estimated pieces of debitage, including recordation of flake size, material, and general flaking strategy (i.e., core versus early or late biface reduction). Otherwise, all flakes at smaller sites were characterized accordingly. Documentation of historic-era sites emphasized data most useful for defining functional use areas and determining the chronological placement of these areas and associated features. All features were described and photographed. Manufacturing marks, embossing, and technological characteristics of bottles, cans, ceramics, and other materials were documented and quantified as needed to distinguish chronological components.

For site updates, the quality and accuracy of previous records were assessed, as were extents of documented boundaries, where logistically reasonable. By and large, however, recordation efforts focused on new features or significant artifacts within portions of previously recorded sites intersecting the project APE that could be impacted by project activities, and that might otherwise alter previous recommendations of ineligibility.

HUMAN REMAINS

Federal law requires immediate reporting when Native American remains are discovered on public lands (Native American Graves Protection and Repatriation Act [Public Law 101-601; 104 Stat. 3048; Title 25, Chapter 32, Section 3001 of the US Code]). Human remains were not encountered.

ARTIFACT COLLECTION AND CURATION

A no-collection policy was followed on this project and, thus, no cataloguing or laboratory analysis was necessary.

CHAPTER 7. RESULTS

A total of 40 newly found sites, including two prehistoric resources, three multicomponent, two of unclear vintage, and 33 dating to the historic era were documented and assessed for eligibility during the current project. Newly recorded historic-era sites include 10 mining sites, 15 refuse deposits, five road segments, two rock features (mining or recreation related), and a utility line. These variably date between the late nineteenth and mid- to late twentieth century, with the bulk of mining sites of early twentieth-century vintage, and most refuse deposits and road segments dating to the mid-twentieth century. Both prehistoric sites are campsites lacking temporal diagnostics, while one of the multi-component sites (EM-X9) contains a re-worked Gypsum projectile point alongside potentially dateable (via hydration analysis) obsidian and ground stone. The two rock features lacking associated artifacts and of unclear temporal association are cairns or rock stacks.

The records of the 14 previously recorded sites that intersect the L-311 project APE were updated and their eligibilities assessed or re-assessed, including those of four newly recorded loci within SBR-7377H (i.e., the Atolia mining town) and an additional segment of SBR-8547H (i.e., Trona Railway). Site summary information and eligibility recommendations are provided in Table 11, and individual site descriptions are detailed in the following sections.

Site locations are listed in Confidential Appendix D, and those of isolates along with their full descriptive data area in Confidential Appendix E. Newly found and updated resource locations are displayed in Confidential Appendix F maps. Site record updates are in Confidential Appendix G, and new site records comprise Confidential Appendix G.

Table 11. L-311 Site Summary.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m²)	Buried Prehistoric Sensitivity
Updated Sites							
1	CA-KER-7738H/ CA-SBR-13799H	H	1950s–Present	Utility	109 & 69	na	na
2	CA-SBR-7377H	H	1906–1944+	Multiple Historical	3,471 x 2,279	6,495,170.1	na
-	*EG-X32*	H	1906–1944+	Structures + Features	134 x 109	10,836.0	na
-	*EG-X33*	H	1915–1930	Refuse Deposit	120 x 33	3,113.0	na
-	*EG-X34*	H	1903–1933	Railroad	203	na	na
-	*RB-X4*	H	1930s–1950s	Structures + Refuse	150 x 109	13,249.0	na
3	CA-SBR-8547H	H	1914–1949	Railroad	1370	na	na
-	*SR-X3*	H	1914–1949	Railroad	139	na	na
4	CA-SBR-8548H	H	1920s–1930s	Road	311	na	na
5	CA-SBR-10316H	H	1911–Present	Utility	1,113 & 1,135	na	na
6	CA-SBR-13800H	H	1950s–Present	Utility	1,243 & 1,180	na	na
7	CA-SBR-14855H	H	1930s–1960s	Refuse Deposit	148 x 69	8,485.3	na
8	CA-SBR-14868H	H	1930s–1960s	Refuse Deposit	391 x 26	7,871.4	na
9	CA-SBR-15435H	H	1917–1985	Refuse Deposit	247 x 101	18,184.2	na
10	CA-SBR-16756H	H	1919–Present	Road	1,141	na	na
11	CA-SBR-16761H	H	1940s–1960s	Refuse Deposit	21 x 10	170.9	na
12	CA-SBR-31228H	H	post-1953	Road	238	na	na
13	CA-SBR-31229H	H	post-1953	Utility	238	na	na
14	P-36-021450	H	1950s–Present	Utility	92 x 52	3,532.6	na

Table 11. L-311 Site Summary *continued*.

List No.	Label	Era	Period or Date Range	Type	Dimensions (m)	Area (m^2)	Buried Prehistoric Sensitivity
New Sites							
1	A-3	H	1930s–1990s	Refuse Deposit	102 x 60	5,614.1	na
2	EG-X1	H	Unknown–1980s	Road	137 x 26	3,077.2	na
3	EG-X2	H	post-1953	Mining	15 x 12	144.1	na
4	EG-X3	H	Mid-20th Century	Rock Feature	6 x 6	28.3	na
5	EG-X4	H	1935–1960s	Refuse Deposit	64 x 29	1,280.3	na
6	EG-X5	H	1917–1980s	Refuse Deposit	59 x 19	1,077.2	na
7	EG-X6	H	1934–1968	Refuse Deposit	91 x 60	4,158.5	na
8	EG-X35	U	Unknown	Rock Feature	13 x 7	71.9	Low
9	EM-X1	H	1915–1964	Refuse Deposit + Features	132 x 34	3,592.9	na
10	EM-X2	H	1915–1947 or after	Mining + Isolated Ground Stone	61 x 34	1,911.9	Lowest
11	EM-X3	U	Unknown	Rock Feature	53 x 27	875.2	Lowest
12	EM-X4	H	20th Century	Mining	21 x 12	187.2	na
13	EM-X5	M	Unknown (P), 1890s–1940s (H)	Mining + Limited Occupation	165 x 112	14,678.2	Lowest
14	EM-X6	H	1907–1960s	Mining	110 x 23	3,268.0	na
15	EM-X7	H	Unknown	Mining	8 x 7	49.1	na
16	EM-X8	H	1910s–1970s	Mining + Refuse Deposit	70 x 28	1,615.7	na
17	EM-X9	M	Gypsum (P), 20th Century (H)	Multiple Historical + Limited Occupation	803 x 159	124,043.4	na
18	EM-X10	H	1915–1952	Rock Features + Refuse Deposit	57 x 41	1,645.8	na
19	EM-X11	H	>1930–1960s	Refuse Deposit	111 x 70	6,065.8	na
20	EM-X12	H	1920s–1964	Refuse Deposit	86 x 47	3,022.5	na
21	RB-X1	H	1935–1960s	Refuse Deposit	28 x 15	365.2	na
22	RB-X5	H	1950s	Road	1647	na	na
23	RB-X7	H	1940s–Present	Road	2427	na	na
24	RB-X8	H	1950s	Road	3285	na	na
25	SN-X1	H	1935–1958	Utility	49	na	na
26	SN-X2	H	>1930-1960s	Mining + Refuse Deposit	48 x 18	810.3	na
27	SN-X3	H	>1930–1970s	Refuse Deposit	61 x 29	1,247.2	na
28	SN-X4	H	1920s–1964	Mining + Refuse Deposit	73 x 34	2,073.9	na
29	SN-X5	H	1940s–1950s	Refuse Deposit	25 x 20	340.8	na
30	SN-X6	P	Unknown	Campsite	4 x 4	12.6	Lowest
31	SN-X7	H	1930s–1960s	Refuse Deposit	12 x 9	82.0	na
32	SN-X8	H	1930s–1968	Refuse Deposit + Features	213 x 70	11,347.0	na
33	SN-X9	H	1890s	Road	410	na	na
34	SN-X10	H	1950s–1960s	Refuse Deposit + Feature	93 x 35	2,903.1	na
35	SN-X11	H	1950s–1960s	Refuse Deposit	23 x 9	196.9	na
36	SN-X12	H	1930s–1950s	Refuse Deposit	12 x 7	78.2	na
37	SR-X1	H	Unknown	Mining	17 x 11	156.9	na
38	SR-X2	H	Unknown	Mining	223 x 57	11,750.5	na
39	SR-X4	P	Unknown	Campsite	45 x 29	968.7	Lowest
40	SR-X5	M	Unknown (P), 1917–1960s (H)	Refuse Deposit + Lithic Reduction Station	38 x 19	556.5	Lowest

Notes: Italicized temporary numbers reflect newly identified segments or components of previously recorded sites.

PREVIOUSLY RECORDED SITES AND UPDATES

The records of 14 sites, all historic-era or multicomponent, were updated during the current project, previous updates and current findings for which are detailed in the following sections and presented as updated records in Confidential Appendix G. Among these, new loci and/or segments were documented for SBR-7377H (i.e., EG-X32 through EG-X34, and RB-X4) and SBR-8547H (i.e., SR-X3). EG-X34 also incorporates a probably segment of the Randsburg Railway (SBR-5731H), but this new segment is updated under the SBR-7377H record.

CA-KER-7738H/CA-SBR-13799H (P-36-021496)

The Inyokern-McGen-Searles No. 1 115 kV transmission line was recorded in May 2010 (Duran 2010), and an update was prepared for one segment of it in June 2011. It was described as having H-type utility poles with three high-voltage lines and two "three high voltage lines suspended from single cross members of wooden H-frame power poles." Available data suggested it was erected between 1950 and 1953, and that it remains in use. Some of the 53-foot H-type and 38-foot T-Type wooden poles that support the line were found to be original, while others were replaced between 1955 and 2009. The line was recommended ineligible for listing on the National Register under Criteria A–D, and also ineligible for listing on the California Register under Criteria 1–4. BLM later determined that this site was ineligible.

In 2018, Far Western, revisited this location during the current project. The transmission line intersects the L- 311 pipeline right-of-way in three locations from Trona to Westland, running adjacent to two proposed staging areas and crossing a proposed access road. In all three locations, the transmission line was observed as previously described, with no new features, artifacts, or site impacts observed. The line appears to follow the previously documented alignment.

CA-SBR-7377H (P-36-007377)

This is a now abandoned portion of the Rand Mining District and the townsite of Atolia, originally documented as a historic-era resource by Far Western in 1992 (Glover and McGuire 1992). That record identified five features along a then proposed pipeline lateral corridor that passed through the townsite (overlapping or west of US 395) and established a tentative "site" boundary based on the distribution of mines visible on the 1967/1973 Red Mountain topographic quadrangle. This boundary was later adopted by SCCIC GIS. Documented features were variably sized refuse deposits and associated foundation/structural remnants with artifacts dating between 1908 and 1930. Based on this limited recordation, Glover and McGuire (1992) recommended that the site be considered potentially eligible for the National Register under Criteria A and D, pending further field and archival studies, and that the five features they documented were contributing elements.

As summarized by Glover and McGuire (1992:16–17) and well described by Hensher (1984:56–59), Atolia (a contraction of the original owner's names, Atkins and DeGolia) was the center of tungsten mining in America between 1906 and 1918, rivaling and eventually surpassing production in Boulder County, Colorado. The area flourished during World War I, especially after the British embargo of exports of tungsten ore from its colonies. It was, indeed, likely the first of California mining districts to receive electric power, telephone and telegraph service, and daily mail. At its pre-1918 peak, it was home to 1,200 people, most of whom lived in upwards of 500 tent dwellings, comprising a community that included a vibrant and diverse suite of stores, hotels, and entertainment centers, as well as a school. It languished after the war, however, due to decreased demand and depletion of the biggest and most accessible veins, and due to small booms in silver mining in areas north. The school was shuttered in 1937 and the post office closed in 1944. Today, the area is a sprawl of abandoned mine shafts, prospect pits, and trenches. Refuse dumps and old mining equipment litter the area, and the once standing structures (see Swope and Gregory 2017:Figure 3.42) have largely been reduced to concrete and stone foundations.

The site record was updated in 2011 with three additional refuse deposits (labeled CB-005 through -007) situated on the west side of US 395 estimated to date to the early to mid-twentieth century. All three were deemed to be insignificant, non-contributing, and to be ineligible for the National Register under all criteria.

Far Western re-visited the site area and surveyed two proposed work areas and linking access roads on the eastern side of US 395 for the current project. Survey revealed three additional concentration areas (including refuse, mines, and/or foundations), as well as an abandoned segment of possible railroad grade that individually qualify as sites but are included with SBR-7377H as updates to this record. These are individually described in the following sections and their contributions to overall site eligibility elaborated. Available data suggest that SBR-7377/H satisfies Criteria A and D, and is eligible for listing, as originally recommended. Further research is necessary to elaborate listing potential under Criteria B and C. Regardless, the proposed work areas intersecting the new site areas described below have been removed from the current project design, and associated impacts are not anticipated.

EG-X32

This concentration consists of structural foundations, a well, and several deposits of associated refuse, all located just east of US 395 and north Hoffman Road. Structural remains include a 15-x-15-foot granite boulder residential foundation incorporating profuse broken glass, nails, and church-key- and pull-tab-opened beer cans (Feature 1); the concrete foundation of a 30-x-12-foot outbuilding incorporating a concrete trough running the length of the foundation, and retaining central and northern concrete entrance paths (Feature 2); a 16-x-16-foot circular concrete pad with a 6-foot-3-inch interior filled hollow, interpreted to be a well (Feature 3); a 6-foot-x-2-foot-10-inch pit lined with decorative stones inset to a concrete foundation, interpreted to be a garden plot (Feature 4); a 25-x-12-foot concrete pad of unknown purpose (Feature 6); a 98-foot-long 5-foot-8-inch-x-3-inch concrete slab of unknown purpose (Feature 8); and a 6-foot-10-inch-x-6-foot-7-inch concrete slab associated with wood lathe (Feature 9). Other structural remains include a 5-x-4-x-3-foot pit incorporating milled lumber (2-x-4-inch, 1-x-6-inch, and 1-x-12-inch), interpreted to be the remains of a privy (Feature 7).

Miscellaneous historic-era and modern debris (e.g., beverage and food cans, oil cans, bottle and other glass, domestic white- and earthen-ware, metal hardware, etc.) is associated with all these features, but was noted to be concentrated in at least five other areas (Features 9, 11, 12, and Concentration 1). The largest of these is a 160-foot-x-15-foot-x-2-foot-6-inch north-south trench incorporating historic-era milk cans (ca. 1915–1930) and modern beer cans and glass (Feature 5).

Available data suggest this was one of the standing structures, related either to mining or servicing the resident population, built during the 1906–1918 peak of mining operations at Atolia. Its purpose is currently unclear, and further research is required to assess its original associations and this site area's contribution to the overall eligibility of SBR-7377H. This locality was likely revisited for recreational purposes on several occasions after the 1930–1940s abandonment of Atolia, as associated mid-twentieth-century and modern refuse attest.

EG-X33

This concentration consists of four historic-era can refuse dumps, two of which may have been hand-dug prospect pits prior to their use as trash receptacles. These pits are 157 and 176 square feet in area and four feet deep each and contain a total of eight Type 9 milk cans (ca. 1915–1930), an oil can, three church-key-opened beer cans, and two sanitary cans. The two surface concentrations cover more than 300 square feet apiece and incorporate around 75 cans total, including additional Type 9 milk cans; tobacco tins; around 50 clear, aqua, and green glass fragments; and around 30 pieces of whiteware.

These refuse deposits are not obviously associated with any structure related to mining operations in Atolia and contain common material that do not significantly enhance regional knowledge about technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy (Criterion D; see Maniery et al. 2016). These dumps, moreover, do not speak to significant historical events or persons (Criteria A and B), nor do they embody distinctive characteristics or components (Criteria C). This site area therefore does not contribute to the eligibility of SBR-7377H, and Far Western recommends that it be considered a non-contributing component.

EG-X34

This is an abandoned segment of railroad grade, probably the Randsburg Branch (aka the Randsburg Railway, Randsburg Railroad) of the AT&SF (SBR-5731H). The Randsburg Railway Company began service in 1898, linking Johannesburg and Kramer Junction and passing through Red Mountain (aka Osdick), Atolia, St. Elmo, Fremont, and Penshaw. The company and line were sold to the AT&SF in 1903, and it was abandoned entirely in 1933 (Myrick 1992; Serpico 2004). This segment of remnant grade measures 12 feet across at the base, 10 feet across at its top, and is four feet tall. A single spike and miscellaneous cans were observed along the documented course. A stamped concrete post was also found in association, inscribed with "PD3 4875 / 4708 / J-J-5" and "AM / CO / 71". This was likely a survey marker for the Atolia Mining Company, like that shown in Serpico (2004:60), that was probably implanted during the same timeframe (ca. 1906–1907).

Approximately 1.3 miles of the old Randsburg Railway grade, roughly three miles north of Kramer Junction, was documented as SBR-5731H in 1986, along with an associated borrow pit, and three camp localities. The grade was documented at four percent, and the berm to be five-to-seven feet wide at the top, 20–25 feet wide at the base, and to rise 1.5–2.5 feet above the ground surface. Rail, ties, and spikes were all absent as they were removed in 1934. A portion of the same segment that crossed the then proposed Kramer Lateral corridor was updated by Far Western in 1992 (Glover and McGuire 1992). This segment was recommended ineligible for listing due to the lack of associated artifacts and given the fact that the grade had been neglected. Another small segment and associated spur (ca. 485 feet) of the originally recorded 1.3-mile segment was updated and evaluated in 2011, and was found to be historically significant and potentially eligible for listing under Criterion A, but not under Criterion D. It was not evaluated under Criteria B or C. The segment updated by Glover and McGuire (1992) was again updated in 2013, but nothing new was encountered. In 2015, an addendum for the Fremont Station was incorporated into the SBR-5731H record, including concrete foundation remnants of the bunkhouse complex and cistern.

The documented grade could also be a portion of the elevated drive presented on the map of Atolia in Serpico (2004:67), just off the original eastern spur of the railway, but this remains unclear. Its dimensions are quite different from the originally documented segment of SBR-5731H, but if associated with this grade, this new would segment would constitute a significantly contributing portion under Criterion A, as it speaks to the broad historical contributions of the railway to local history. It is not linked to individuals of historical significance, nor does it embody necessarily significant components or characteristics of significance, and would be ineligible under Criteria B and C. This segment also does not have the potential to yield significant information to regional research themes beyond the current recordation, likewise making it ineligible for listing under Criterion D.

RB-X4

This concentration consists of mines, structural foundations, and associated refuse grouped as two loci on either side of US 395 at its intersection with the western segment of Hoffman Road. The western locus consists of a 6-foot-x-4-foot-x-5-inch concrete foundation associated with bottle fragments and cans estimated to date between the 1930s and 1950s; a 10-x-10-foot fenced open mine shaft surrounded by miscellaneous sanitary cans; and a large trash dump incorporating approximately 500 milk (1910s–1980s), steel top beer, and sanitary cans, clothing, and sewer piping.

As with EG-X32, available data suggest this site area incorporated standing structures, related either to mining or servicing the resident population, built during the 1906–1918 peak of mining operations at Atolia. Its purpose is currently unclear, and further research is required to assess this site area's contribution to the overall eligibility of SBR-7377H. This site area was likely revisited for recreational purposes on several occasions after the 1930–1940s abandonment of Atolia, as associated mid-twentieth-century and modern refuse attest.

CA-SBR-8547H (P-36-008547)

This site is the Trona Railway, first recorded in November 1996 (Love and Tang 1996). That recordation documented a four-mile segment of the 25-mile-long railway, which was constructed in 1914 to service the Southern Pacific Railroad at Searles Station. The 1996 record noted that most of the original constituents had been replaced, save three concrete culverts. Due to the loss of historical integrity stemming from these replacements, and given the historical commonality of the culverts, the feature was recommended ineligible for listing on the National Register under Criteria A–D.

In February 2018, Far Western re-visited a roughly 0.25-kilometer segment of the railway intersecting the APE of a proposed staging area in Argus, California associated with hydrostatic testing of L-311. No new constituents were identified, nor was anything observed that altered the character of this segment of the railroad as originally recorded. Another segment (SR-X3) was newly found farther south, southeast of Stevens Mine Road, which incorporated railroad ties, spikes, pipe fragments, sanitary cans, and miscellaneous metal; some of the rails were embossed with 1944 and 1949. A prominent berm was also observed the north of the grade and rails.

The SR-X3 segment would appear to have more historical integrity than the originally recorded segment and requires further research to assess its eligibility potential. Far Western agrees with Love and Tang's (1996) recommendation of ineligible regarding the originally documented northern segment of CA-SBR-8547H. The original segment lacks integrity and association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and also does not retain the potential to significantly contribute to regional research themes (Criterion D).

CA-SBR-8548H (P-36-008548)

This abandoned segment of the old Trona Highway was recorded by in November 1996 (Love and Tang 1996). That recording documented approximately 570 feet of old roadway extending between the Trona Railway (SBR-8547H) to the contemporary intersection of First and E. Streets in Argus. Available data suggested the old roadway was in use between the 1920s and 1930s, and that it was constructed of a pavement referred to as "desert mix," although of what this consisted was not reported. Associated artifacts were also not noted. Love and Tang (1996) determined that this road segment had lost all integrity, and that the pavement type was not of historical significance. The site was, as such, recommended ineligible for listing on the National Register under Criteria A–D.

In February 2018, Far Western re-visited a roughly 0.10-kilometer segment of the 29-foot-wide roadway intersecting the APE of a proposed staging area in Argus associated with hydrostatic testing of L-311. That re-visit found that the roadbed within the project APE was obscured by modern utilities constructions and surrounding roads, and that its integrity had further deteriorated. Far Western agrees with Love and Tang's (1996) evaluation-based recommendation of ineligible for listing. This segment remains is use and lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and lacks the potential to significantly contribute to regional research themes (Criterion D).

CA-SBR-10316H (P-36-010316)

A segment of the 238-mile-long "Tower Line" (aka Southern California Edison Company Kramer-Victor 115kv Transmission Line; Southern Sierra Power Company Control-San Bernardino Transmission Line; Arrowhead-Mojave Siphon-Devil Canyon-Shandin 115 kV Line) was recorded in December 2000, and updates were prepared for other segments between November 2005 and May 2013. The original powerline was constructed between 1911 and 1913 to service electricity transmission between Bishop and San Bernardino County, and nearly all the line's components have been replaced in the nearly 100 years of its continued operation. Despite this, the line was determined eligible for National Register listing by the California Office of Historic Preservation in April 1995.

Far Western revisited this resource in 2018 for the current project and found that most of the power lines along the documented segment have been upgraded. This segment therefore lacks integrity to the period of significance and is recommended as a non-contributing element of the historic property. This segment remains in use and lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and lacks the potential to significantly contribute to regional research themes (Criterion D).

CA-SBR-13800H (P-36-021497)

The Inyokern-McGen-Searles No. 2 115 kV transmission line also was recorded in May 2010 (Duran 2010), with a segment of it updated in June 2011. Available data suggested that most supporting poles, consisting of the 38-foot T-type wooden variety, had been replaced between 1975 and 1996 and into the 2000s. The transmission line remains in use. The line was recommended ineligible for listing on the National Register under Criteria A–D, and ineligible for listing on the California Register under Criteria 1–4. BLM has since determined the site ineligible for listing.

In 2018, Far Western revisited this resource and noted that the line intersects the L-311 right-of-way in two locations along Trona Road. The site appeared to be as previously described, and no new features, artifacts, or impacts were observed.

CA-SBR-14855H (P-36-023529)

This resource was recorded in 2011 as a deposit of sanitary cans, oil cans, tobacco tins, a cone-top beer can, and fragments of brown and colorless bottle glass. The cone-top beer can suggested a date range of ca. 1935–1960. Far Western revisited the site in 2018 for the current project, noting two separate loci with ceramics and miscellaneous domestic debris as well as bottles and cans. Locus 1 contains about five pieces of white improved earthenware (no marks), a Prince Albert tobacco tin, metal car parts, and fragments of green, sun-colored amethyst, and colorless glass; the Prince Albert tin and the sun-colored amethyst glass suggest a date in the first half of the twentieth century. Locus 2 contained single- and multi-serving sanitary food cans; five-gallon fuel cans; earthenware sherds; a thimble; rectangular meat tins and a key-wind coffee can; and bottle/jar fragments of green, cobalt (Noxema), opaque white ("milk"), aqua, amethyst, and colorless glass. One beverage bottle (cola) had a blue and white applied color label, dating to the 1930s or later, and a light-green cylindrical base with a Hazel Atlas mark dating between 1923 and 1982. Several "church-key" opened cans also suggested a date in the 1930s–1960s range.

The 2011 site record recommended the site ineligible for listing, as the site contained "minimal variety of artifacts and material types" and "lacks sufficient density, diversity, and integrity to address research questions for the area." Far Western agrees with this recommendation. This site lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

CA-SBR-14868H (P-36-023542)

This sparse scatter of mid-twentieth-century refuse was recorded in 2011, with an update in 2013 that noted no changes to the site. It lies 10 meters south of the pavement of US 395, eight miles north of Kramer Junction. The previous recorders noted 17 cans and bases from five bottles, including "church-key" and rotary opened sanitary cans and bottle glass in green, grown, and colorless examples. Makers marks on the bottle bases indicated a date range from the late 1880s to the 1970s and later.

Far Western returned to the site in 2018, re-located the site datum and noting three bottles with makers marks dating to the 1930s–1960s but not observing any of the other previously recorded artifacts. It is possible that most of the deposit was cleared away in the five years between site visits. In any case, there are no features and insufficient artifacts at this location to qualify for listing on either the National or California Registers under any criteria. This site lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

CA-SBR-15435H (P-36-024250)

This site is an extensive refuse deposit scattered along the east side of Rosario Avenue and south of State Highway 58, 0.9-mile east/southeast of Kramer Junction. It was recorded by Far Western in 2012 as a deposit of more than 350 cans (sanitary food, oil, milk) with an estimated date range based on the milk cans of 1917–1985 (Foutch 2012). No other temporally diagnostic items were noted, and an eligibility recommendation was not offered as the resource would not be affected by the then proposed project.

During a return visit in 2018, Far Western found the site, overlapping the 50-meter buffer surrounding the currently proposed A-C Staging Area, to be unchanged and the existing record accurate. This is one of many similar dump sites commonly found along rural roadways. It has no documented association with a known household, group, or individual, and it contains only typical, mass-produced items largely dating to the mid-twentieth century. Although cans are present in great quantity, these are not rare, and possess little in the way of data potential; it is recommended ineligible for listing. This site lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

CA-SBR-16756H (P-36-026449)

This resource consists of six non-contiguous segments of State Route 58 and five associated artifact concentrations. The segment within the current project area is immediately east of Kramer Junction. Far Western recorded the site in 2013 (Higgins et al. 2013), and noted beer cans, sanitary cans, and bottle glass dating to the 1950s–1960s. The road itself was established in 1919 but has been greatly improved and updated since that time.

Far Western revisited the project segment in 2018 and found it to be as previously recorded, noting no additional artifacts. While an evaluation of the larger resource is well beyond the scope of the present study, the segment within the project area retains none of its original (1919) character: it is a paved, maintained, and well-used road with no associated historic-era features (e.g., stone culverts, bridges, rock retaining walls). It is recommended as a non-contributing element of the larger resource. This segment lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and is associated with common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

CA-SBR-16761H (P-36-026463)

Far Western recorded this small refuse deposit in 2013 (Higgins et al. 2013). It lies one mile southeast of Kramer Junction, on an unnamed (but well-used) dirt access road. The site consists of seven 12-ounce flat-top beer cans with "church-key" openings, probably dating to the sometime between the 1940s and the early 1960s. During a revisit in 2018, Far Western noted no additional site constituents. This tiny can scatter lacks association, variety, and quantity. It consists of a single type of mass-produced, mid-twentieth-century refuse that is found along rural roadways throughout the region and the state. Therefore, it has no data potential beyond recordation, and the site is recommended ineligible for listing under all criteria. This site lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

CA-SBR-31228H (P-36-031228)

This is historic-era bladed road segment and associated refuse deposit was originally recorded in 2016 (Martinez et al. 2017). The road segment, estimated to have been created between 1953 and 1973, originates from Randsburg Wash Road (SBR-15014H) and terminates at Trona Road, paralleling the course of the L-311 pipeline. Associated cultural debris included 26 pieces of green and brown glass and a non-descript can. The road was determined to lack integrity of design, materials, workmanship, feeling, and association, but to retain integrity of location. An eligibility recommendation was not offered.

Far Western resurveyed the full extent of the road in 2018, which intersected the APEs of a proposed staging area and access road (representing an unrecorded segment of 16761H) associated with hydrostatic testing of L-311. Several isolated artifacts (primarily beer cans) post-dating the timeframe of pipeline construction were noted along the course of the proposed access road within the project APE, all representing litter that likely derived from recreational use of the road. While of historic age, it is clearly associated with the nearby in-use pipeline, and of absolutely no historical significance (Criterion D). It, moreover, it lacks association with significant historical events or individuals (Criteria A and B) and has no distinctive characteristics (Criterion C). The road is therefore recommended ineligible for listing under all criteria.

CA-SBR-31229H (P-36-031229)

This is a segment of a buried historic-era (ca. 1953–1967) pipeline (L-311) recorded in 2017 (Martinez et al. 2017). The pipeline runs parallel to SBR-31228H, a road segment associated with pipeline construction. The pipeline was considered to lack the potential to provide significant data regarding common regional historical research themes (i.e., transportation, mining, and ranching), but an explicit eligibility recommendation was not offered.

Far Western resurveyed a segment of pipeline in 2018 that intersected the APEs of a proposed staging area and access road associated with hydrostatic testing of the line itself. Several isolated artifacts (primarily beer cans) post-dating the timeframe of pipeline construction were noted along the course of the pipeline and associated proposed access road APE, all representing litter that likely derived from recreational use of said road. Per 16 U.S.C. 470v; 36 CFR 800.14(c), the Advisory Council on Historic Preservation exempts in-use pipelines from Section 106 considerations. The pipeline is therefore recommended ineligible for listing under all criteria.

Trinomial Unknown (P-36-021450)

The Searles electrical substation was recorded in May 2010 (Duran 2010). Noted constituents included oil circuit breakers, transformers, voltage regulators, and a control house. Available data from Southern California Edison suggested it was constructed during the 1950s, although the station remains in use and components have probably been replaced during its operation. The substation was recommended ineligible for listing on the National Register under Criteria A–D, and ineligible for listing on the California Register under Criteria 1–4.

Far Western re-visited the substation in February 2018 and did not identify alterations in site constituents or character from the original recording. Far Western agrees with Duran's (2010) recommendation of ineligible for listing under all criteria. This station is in use and is not associated with significant historical events or individuals (Criteria A and B), has no distinctive characteristics (Criterion C), and currently had no data potential beyond recordation and does not significantly contribute to regional research themes (Criterion D).

NEWLY IDENTIFIED SITES

Forty previously undocumented resources were encountered and recorded during the field inventories. Each is summarized here, along with recommendations for National Register and California Register eligibility. A summary of isolated finds follows these descriptions and management recommendations are provided in the next chapter

A-3

This historic-era refuse deposit is located along the southern edge of State Highway 58, one-half mile east of its intersection with US 395. It contains a mix of historic-era and modern road-side refuse reflecting several episodes of dumping. There are about 300 shards of colorless bottle glass, 200 of brown bottle glass, 50 green and 20 aqua bottle fragments. Both mold-blown and machine-made bottles are represented. Diagnostic artifacts include a bottle base of colorless glass with a post-1953 Owens-Illinois "Duraglas" mark; a probable Latchford Glass Company mark dating to the 1930s–1989 period; a possible Brockway Glass Company mark (1933–1990s); three "church-key" opened beverage cans (1935–1962); an upright pocket tobacco tin (ca. 1907–1960); and a single stamped-end can with crimped side seams (post-1924). Modern debris includes bits of Styrofoam, plastic jugs, and miscellaneous containers.

This site dates to the mid-twentieth century and later, and almost certainly reflects roadside dumping over several decades. There is no way to identify any association with a particular household, individual(s), or other entity (Criteria A and B). The artifacts are common, mass-produced items of the types found along almost any rural highway in the state and the nation, thus they lack rarity or distinction (Criterion C). As a surface scatter, the site also lacks stratigraphy, and associated materials do not have the potential to yield significant information (Criterion D). As such, the site is recommended ineligible for listing under all criteria.

EG-X1

Two segments of abandoned road were recorded about six miles east of the town of Ridgecrest. The segments are very faint two-track linear resources with bits of intact asphalt in some places. A mid/late-twentieth-century bottle base (colorless glass, Latchford Glass Co. mark 1957–1980s) and a few beverage cans ("church-key" and pull tab) were noted along the route. The dirt two-track may be part of an old alignment of Trona Road, but it does not appear on available historical topographic maps or GLOs.

The road is in use and preserves only a modicum of historical integrity or sense of setting. The site is, moreover, not clearly associated with a significant event (Criterion A), makes no contribution to the broad patterns of regional history, is not obviously linked to a significant historical figure (Criterion B), nor does it embody distinctive characteristics or components (Criterion C), and does not have the potential to contribute to regional research themes (Criterion D). The site is therefore recommended ineligible for listing under all criteria.

EG-X2

This single prospect pit is situated west of the L-311 pipeline right-of-way along an unimproved dirt road that appears as a wash on the 1953 Ridgecrest 15-minute series topographic map – the prospect is not shown. Backdirt and waste rock are piled on the east side of the pit, and there are a few scraps of milled lumber and bits of wire nearby. The prospect pit is 14 x 10 feet in size and about five feet deep, cut into the side of a residual outcrop. This may be an example of the "numerous short-lived dry-washing camps" mentioned by Clark (1970:164). As a common, isolated feature with no known associations with significant historical events or individuals (Criteria A and B), no distinctive technological or construction characteristics (Criterion C), and no dateable artifacts or other constituents with the potential to significantly contribute to regional research themes (Criterion D), this resource is recommended ineligible for listing under all criteria.

EG-X3

A stacked-rock cairn and two "church-key" opened beverage cans were recorded 0.7 mile east of Trona Road at a point about seven miles to the east of the town of Ridgecrest along an unimproved dirt road that appears as a wash on the 1953 Ridgecrest 15-minute series topographic map. The cairn is of a type typical of hikers making a trail, rather than a mining claim or other historic-era feature. The cans suggest a date in the mid-twentieth century. This site lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics or stratigraphy (Criterion C), and contains no data potential beyond recordation, nor that significantly contributing to regional research themes (Criterion D); it is therefore recommended ineligible for listing under all criteria.

EG-X4

This very dispersed scatter of mid-twentieth-century cans and bottles lies just east of Trona Road and three miles north of Red Mountain, California. There are fewer than 20 items represented, including "church-key" opened beverage cans (1935–1960s), a brown glass liquor bottle neck with "brandy"-type finish, a key-wind-opened sardine tin, a mangled lid possibly from an oil can, and shards of amethyst, aqua, and brown glass. There is also sparse modern debris here. No features were observed in the vicinity. This isolated refuse scatter lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics or stratigraphy (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D). It is recommended ineligible for listing under all criteria.

EG-X5

This site lies close to EG-X4, also just east of Trona Road. It is made up of fewer than 20 items, including a "paint"-type internal friction lid can with lug handles, vent-hole milk cans (Simonis Type 11/12/19/21) dating anywhere from 1917 to the 1980s, "PUNCH HERE" milk cans (Simonis Type 18) dating between 1935 and 1950, single-serving sanitary food cans, and a small colorless "jelly" jar of the type once given away to be reused as juice glasses. This isolated, mid-twentieth-century scatter lacks association with significant historical events or individuals (Criteria A and B), has no distinctive characteristics or stratigraphy (Criterion C), and contains only common, mass-produced items with no data potential beyond recordation and that do not significantly contribute to regional research themes (Criterion D).

EG-X6

This resource lies along an unnamed access road connecting to Trona Road. It includes a metal well head (pipe) with cover, a concrete block with embedded anchor bars (pier or mount), a foundation wall, and four refuse concentrations containing flooring tile, cinder blocks, domestic containers, and other debris. Diagnostic items include a colorless bottle base with an Owens-Illinois mark dating to after 1958; a colorless glass jar base with a Glass Container Corp. mark dating between 1934 and ca. 1968; and a flat-top can with lithographed label marked "[Real G]old/California Orange Base" from the mid-twentieth century. The well and foundation wall indicate that a structure or structures once stood here, but it doesn't show up on available historical topographic or GLO maps. Additional research is necessary to identify the origin and function of this site and to assess its eligibility for listing.

EG-X35

A small cairn was recorded 0.7 miles southeast of the intersection of US 395 and the Randsburg Cutoff, south of the town of Red Mountain. It may have served as a marker for a nearby mining claim, although there is no sign of a marker post. The cairn consists of seven small- to medium-sized cobbles stacked two courses high. As no artifacts were observed, the cairn cannot be dated; in addition, its exact function is unknown. As an isolated pile of stones with no dateable constituents, this resource cannot be linked to a known activity, significant event, or individual (Criteria A and B), is unremarkable in its design and construction (Criterion C), possesses no data potential beyond recordation, and does not significantly contribute to regional research themes (Criterion D). It is therefore ineligible for listing under all criteria.

EM-X1

This site is refuse scatter and three rock features in the town of Red Mountain, 0.3 miles east of US 395. Feature 1 is an unmortared rock ring constructed of about 60 large, semi-angular cobbles and measuring 72 x 78 inches, with the rocks stacked two courses high. Feature 2 is cluster of roughly 25 medium- to large-sized cobbles forming a loose pile 78 x 63 inches in size. Feature 3 is a smaller cluster of about 18 large cobbles, 67 x 46 inches in size. Their origin and function are unknown. Also on the site are about 50 vent-hole milk cans (Simonis Type 8, 1915–1925); 20 each single- and multi-serving sanitary food cans; a one-pound, internal-friction lid margarine can embossed "USA/1/3 LESS/THAN/BUTTER"; a Union Carbide oil can; a milk-glass cosmetics jar with Hazel Atlas mark (1920s–1964); several fragments of colorless glass jar(s); and one shred from a white ware plate. Although the artifacts are common, mass-produced items, their early twentieth-century date and physical association with the three rock features suggests that additional research is necessary to determine the origin and nature of the site, and to assess its eligibility for listing.

EM-X2

This is a mining site with a mechanically dug prospect trench and one each mechanical and hand-dug prospect pit, along with a collapsed rock cairn made of 36 medium to large cobbles. One grinding slick was noted on an outcrop of fine-grained volcanic bedrock near the southeastern corner of the historic-era site; the mechanically excavated trench stops just short of the outcrop. The grinding slick shows smooth polish in a circular wear pattern, slightly concave, with pecking but no striations. The wear surface measures 23 x 23 centimeters.

The only artifact observed was a Prince Albert tin (early to mid-twentieth century), possibly used for holding the mining claim. The earliest available topographic maps (1903–1915 USGS quadrangles) show no mining in the vicinity. The next available map is the 1947 Trona 1:250,000 map, which includes a mining symbol in the vicinity that probably indicates the Rand Mining District (see forward to the site description for EM-X9). These prospects are most likely related to that district. However, the fact that no actual mine workings (shafts, adits, headframes, etc.) are present here indicates that the prospects were unsuccessful. It may be another of Clark's "numerous short-lived dry-washing camps" (1970:164), though somewhat late in time. Thus, the site would have played no significant role in the development of the larger district. As an unremarkable example of a very common resource type with only a single artifact that is not clearly associated with a significant event or individual (Criteria A and B); makes no contribution to the broad patterns of regional history, does not embody distinctive characteristics or components (Criterion C); possesses no data potential beyond recordation, and does not significantly contribute to regional research themes (Criterion D); the historic-era portions of this site are recommended ineligible for listing under all criteria, accordingly.

Similarly, the single grinding slick is a prehistoric isolate with minimal data potential beyond its recordation does not contribute significantly to any criteria for listing and is also considered a non-contributing portion of site eligibility. Overall, this site is recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

EM-X3

This resource consists of seven rock "stacks" with one, two, or (in a single case) seven small cobbles placed on top of larger boulders. The site is located roughly one-half mile east of US 395 on a small knoll west of Red Mountain. It falls within the Rand Mining District but contains no artifacts or other diagnostic elements to indicate its age, origin, or function. These may require further research before eligibility can be assessed. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

EM-X4

This site includes three prospect pits, one sanitary can, and shards of blue bottle glass, located roughly one-half mile east of US 395 on a small knoll west of Red Mountain. It is 250 meters south/southwest of site EM-X3, on the same landform. The features are three broad, shallow pits (all less than three feet deep) with adjacent but collapsed cairn markers. The two artifacts are non-diagnostic, except to the extent that the sanitary can dates to the twentieth century. Given its location, this site is probably associated with the Rand Mining District. However, as an unremarkable example of a very common resource type, with no developed mine workings to indicate it was a successful venture, the prospecting area would have played no significant role in the development of the larger district. It has no clear link to a significant event or person (Criteria A and B); it has no distinctive characteristics of engineering, design, or construction (Criterion C); nor does it have data potential beyond its recordation (Criterion D). It is recommended ineligible for listing under all criteria, accordingly.

EM-X5

This multi-component resource lies along a dirt access road southwest of Red Mountain. It contains multiple mining features (five prospect pits, two shafts), a claim marker post, two concrete foundations, a scatter of late nineteenth and early twentieth-century refuse, two millingslabs, and two formed flake tools (one obsidian, one quartzite). Diagnostic artifacts include roughly 60 vent-hole milk cans (pre-1930s), a "Calumet" baking powder can (1890s–1940s), a can embossed "California Cap Co." dating to 1910–1930, a "Pluto" brand Florida water bottle fragment, and an embossed brick fragment from the Los Angeles Stoneware and Sewer Company dating between 1891 and 1906. One of the mining shafts still has its vertical wooden bracing; it is currently fenced off for safety. The concrete foundations have embedded anchor rods and probably once held machinery, possibly for providing power to the hoist. The 1911 USGS Randsburg quadrangle shows several mining symbols to the southwest of the site and to the south around Atolia, but none at the site location itself. However, Clark does show mines in this vicinity (1970:Figure 30), though marked only as "Silver Mines."

The artifact assemblage suggests that this site may be part of the original 1890s mining period in the Rand Mining District, perhaps continuing into the ca. 1905–1919 tungsten boom. As a potentially early example of this regionally important enterprise, and one with multiple features and a large artifact assemblage, the site could be eligible for listing under Criteria A/1 and D/4. However, more research is necessary to fully assess this potential.

The prehistoric component consists of four artifacts, of which only one might be temporally diagnostic. Likewise, the site encompasses an area deemed to have the lowest potential to preserve buried prehistoric archaeology. Given the very limited research potential of these items (Criterion D), considering its lack of association with a significant event or individual (Criteria A and B), and due to the fact that prehistoric items do not embody distinctive characteristics or components (Criterion C), the prehistoric component is recommended ineligible for listing under all criteria, and is considered a non-contributing portion to the eligibility of the site as a whole.

EM-X6

This relatively large mining site contains nine mining pits, a reinforced mine shaft, and a refuse deposit with miscellaneous cans and a single bottle fragment. It is one-tenth of a mile east of US 395 in the town of Red Mountain. The mining pits range in size from 10 x 15 feet across x 3 feet deep to 25 x 21 feet across x 8 feet deep. The shaft is 47 x 34 feet and at least 25 feet deep, with a 5-x-5-foot opening reinforced with rocks and currently fenced off for safety. The cans are dominated by sanitary types, with two pull-top cans (1962 or later) and five upright pocket tobacco tins (ca. 1907–1960) that may have been used to hold claim papers. The site lies within the Rand Mining District, and the presence of the reinforced shaft suggests a moderate level of investment to identify a viable ore body. Additional research is necessary to determine the relationship of this site to the larger mining district and to assess its potential for listing.

EM-X7

Located between mining sites EM-X6 and EM-X8 is this single prospect pit with two scraps of wire-wrapped lumber. The pit is 23 x 25 feet across and four feet deep. There is no claim marker and no associated artifacts to date the pit, which is probably related to the prospecting activities that mark this entire vicinity. As an isolated feature of a very common type, with no clear association, distinctive features, or dateable artifacts, it contributes little to our understanding of the larger Rand Mining District and clearly played no major role in the development of that district. Moreover, the site is not clearly associated with a significant event or individual (Criteria A and B), does not otherwise embody distinctive characteristics or components (Criterion C), does not have the potential to significantly contribute to regional research themes (Criterion D), and is therefore recommended ineligible for listing under all criteria.

EM-X8

Fifteen to 20 meters east of Red Mountain Road (aka US 395) is an extensive refuse scatter with thousands of artifacts and several small areas of dense slag or clinker and broken firebrick, possibly representing a kiln operation or small ore-processing and testing features. The artifacts include thousands of bottle glass shards (brown, olivine, aqua, white opaque ["milk"], amethyst, green, colorless) with crown, brandy, and indeterminate finishes; colorless canning jars; window glass; thousands of cans, including vent-hole milk cans dating from the 1910s to the 1950s, upright pocket tobacco tins of about the same vintage, coffee cans, meat tins, and beverage cans with both "church-key" and pull-tab openings (1935–1960s and 1962–1970s, respectively). Other artifacts include crucible fragments, ceramic tablewares, and miscellaneous hardware.

The sheer number and variety of artifacts at this site, and its location amidst the mining features of the Rand Mining District, suggest that it served as a general dump location for the mining operations (and perhaps for the nearby town, as well). The kiln/ore processing features are somewhat unique and indicate that the site had more than one function. Overall, more research is needed to fully characterize this resource and assess its eligibility for listing.

EM-X9

This resource is a large, multi-component site consisting of features and debris associated with early and mid-twentieth-century mining activity in and around Red Mountain, as well as a flaked stone assemblage. The site is located east of US 395 and west of Red Mountain. Features within the site include a corral/fenced area, a mine shaft and pad, multiple prospect pits and trenches, a section of railroad grade (likely the Randsburg Railway; SBR-5731H), 14 historic-era artifact loci, and one concentration of cryptocrystalline silicate (CCS), obsidian, quartzite, and fine-grained volcanic (FGV) flaked stone tools and debitage.

The historic-era component contains tens of thousands of artifacts. Boundaries to the south and east were drawn around artifacts and features within 15 meters of each other, and the northern boundary was defined by diagnostic artifacts of one per 15 meters. The western boundary is defined by private property along the highway. Artifacts continue for at least 500 meters to the north along the railroad grade outside of the current boundary.

The earliest historical components are probably associated with early twentieth century (ca. 1909–1913) operation of the Osdick stamp mill, which primarily processed sheelite ore (i.e., tungsten) from the White Flower claim near Atolia, as well as community development stemming from the establishment of the Osdick station in January 1910, situated at milepost 26.8 of the Randsburg Railway (Serpico 2004). A small silver mining boon after the post-WWI wane of tungsten demand fostered community expansions and the local establishment of two settlements, Osdick, which gained a post office in February 1922, and Inn City (aka "Sin City" or "Gin City"), composed of little more than miners' tents and shacks. Local service was officially consolidated under the name Red Mountain in June 1928 (Serpico 2004).

Given the large area of the historical component, the incorporation of the railroad grade (see back to *CA-SBR-7377H*, page 61), and other constructed features visible outside the boundary of the site but connected by non-diagnostic artifacts, these resources may warrant an archaeological district designation. Because of the complex nature of this site and the huge assemblage, the historic-era component is recommended eligible for listing under Criteria A and D due to its association with, and data potential pertaining to the historically significant Rand Mining District. The historical component is not linked to individuals of historical significance (Criterion B), but further research is necessary to determine if incorporated historical features convey significantly distinct characteristics (Criterion C).

The prehistoric component includes six bifaces, one Elko projectile point reworked into a drill, a unifacial millingslab, a bifacial handstone, and about 100 pieces of debitage – one-third of them obsidian. The site encompasses an area deemed to have the lowest potential to preserve buried prehistoric archaeology, but given this relatively varied assemblage with obsidian, the site may provide data addressing regional research questions of land-use organization, toolstone acquisition, and chronology. The presence of ground stone also suggests that the site was a small encampment, rather than simply a toolstone reduction area. In addition, there are relatively few prehistoric sites of substance in the vicinity. For these reasons, the prehistoric component is recommended eligible under Criterion D. Available data do not indicate the prehistoric component would be eligible under Criteria A, B, or C.

EM-X10

Multiple rock alignments, a possible platform, and miscellaneous refuse mark this site, located east of site EM-X9 (see above). The ground-level rock alignments form right angles, curved enclosures, and pathways or fences/walls. One feature in particular, Feature 2, is a broad enclosure with rounded corners and an opening that resembles a cattle chute (though only one course high), suggesting an animal corral. The "platform" (Feature 3) is a broad, flat area that has been cleared of stones.

Artifacts noted at the site included two files (one flat and one half-round), and adze blade, upright pocket tobacco tins, Type 9 vent-hole milk cans (1915–1930), square-bodied hole-in-cap cans, bottle glass (green, aqua, colorless), chicken wire, a tire chain, a crucible, and a saw blade. One brown bottle base was embossed with and "L" (and a star?) inside a keystone, possibly from the Lincoln Glass Bottle Company (1942–1952). A colorless bottle base had an embossed Illinois-Pacific Glass Company mark dating to ca. 1910–1920s, and an oval colorless base was embossed with "IXL," possibly from the IXL Glass Bottle Company (early 1920s). This somewhat unique site requires additional research to determine its origin, function, and age, and to assess its eligibility for listing.

EM-X11

Site EM-X11 is a refuse deposit comprised of approximately 50 cans, located along the eastern edge of US 395 and well removed from any other recorded sites or features. Most of the cans are 12-ounce beverage cans with "church-key" openings (1935–1960s); six others are pre-1930 hole-in-cap cans. Also recorded was a single-serving sanitary food can and an internal friction dry goods can. This temporally mixed can dump has no clear association but probably represents "road toss." There is no stratigraphy and little in the way of artifact variety among these common, mass-produced items. Moreover, the site is not clearly associated with a significant event or individual (Criteria A and B), does not otherwise embody distinctive characteristics or components (Criterion C), and does not have the potential to significantly contribute to regional research themes (Criterion D). It is recommended ineligible for listing under all criteria, accordingly.

EM-X12

This relatively small deposit of cans and bottles is in the town of Kramer Hills, just south of State Highway 58. It contains domestic items, mostly food containers: evaporated milk cans, sanitary cans, "church-key" opened beverage cans, one each coffee and key-wind meat tin, and 30 pint-sized internal friction lid (paint?) cans. Also present is a can marked "GILMORE OIL CO.," three colorless bottle bases with 1920s–1964 Hazel Atlas marks, a milk-glass vessel base marked "…SINOL/SALT'OM D/CHEMICAL CO." of unknown date, a colorless drinking glass, and fragments from a Coca-Cola bottle. No features were observed, except for the highway. This resource appears to be a mid-twentieth-century dumping event with no apparent associations. It is made up of common, mass-produced domestic items with little in the way of data potential beyond its recordation. The site is not clearly associated with a significant event or individual (Criteria A and B), does not otherwise embody distinctive characteristics or components (Criterion C), and does not have the potential to significantly contribute to regional research themes (Criterion D). It is recommended ineligible for listing under all criteria, accordingly.

RB-X1

This tiny can dump lies just downslope/east of Trona Road, roughly one mile south of the town of Atolia. It most likely represents roadside dumping. About 50 cans were observed in an area of 6 x 4.5 feet, with a general dispersal of cans in the vicinity. The artifacts are "church-key" opened beverage cans dating from sometime between 1935 and the 1960s. As a small roadside dump with no exact date, no artifact variety or stratigraphy, no clear association with a significant event or individual (Criteria A and B), and does not otherwise embody distinctive characteristics or components (Criterion C), this small assemblage of common, mass-produced items with no date potential beyond recordation is recommended ineligible for listing under all criteria.

RB-X5

This resource is a segment of unimproved dirt road running east from US 395, about 3.9 miles north of the intersection of US 395 and State Highway 58 (formerly Highway 466) at Kramer Junction. It is 10–12 feet wide and one mile long, with no associated features (culverts, retaining walls, bridges, etc.) and no artifacts observed. The road is depicted on the 1954 USGS Boron 15-minute quadrangle, leading to a small group of two wells, a tank, and what appear to be two abandoned structures (none of these features are shown on the earlier USGS maps, suggesting that they date to ca. 1950). At this point the road ends at a five-way intersection of dirt roads.

Indications are that this dirt road once provided access (one of six routes) to the ca. 1950 wells and associated features. As such, it would not have played any significant role in the development of the larger regional transportation system or settlement. There is no evidence that it is affiliated with any important events, trends, or individuals (Criteria A and B), and it includes no distinctive engineering, design, or construction characteristics (Criterion C). It also has very little potential to add to our understanding of regional or extra-regional history (Criterion D). The road is therefore recommended ineligible for listing under all criteria.

RB-X7

This is a segment of the historic Pinnacles/Teagle Wash Road running east from Trona Road southeast of the town of Ridgecrest and continuing east and north for several miles to rejoin Trona Road near Argus. It appears as an unnamed, unimproved road on the 1953 USGS Ridgecrest 15-minute quad and continuing onto the 1949 Searles Lake 15-minute quad. The segment recorded for this study is 1.5 miles long and roughly 20 feet wide. It has no associated features or artifacts and appears to be maintained and used.

There is no indication that this road played any significant role in the development of the larger regional transportation system or settlement. There is no evidence that it is affiliated with any important events, trends, or individuals (Criteria A and B), and it includes no distinctive engineering, design, or construction characteristics (Criterion C). It also has very little potential to add to our understanding of regional or extra-regional history (Criterion D). The road is therefore recommended ineligible for listing under all criteria.

RB-X8

This resource is a segment of what is currently called Stephens Mine Road, branching off Trona Road just northwest of Searles Valley. It appears on the 1953 Ridgecrest 15-minute quadrangle, which shows it heading northeast for roughly four miles to the "Stephens Holding Mines" in the Spangler Hills (Section 36, T27S/R41E); from there it turns sharply to the northwest to return to Trona Road. There is no mention of these holdings in Swope and Gregory (2017) and only a brief mention of the Spangler Mining District by Clark (1970:152), who describes it as "a number of narrow west-striking gold-quartz veins" in granitic rock. From this it appears that these holdings were not particularly successful.

Given this, available data suggest that this road would not have played any significant role in the development of the larger regional transportation system, settlement, or mining. There is no evidence that it is affiliated with any important events, trends, or individuals (Criteria A and B), and it includes no distinctive engineering, design, or construction characteristics (Criterion C). It also has very little potential to add to our understanding of regional or extra-regional history (Criterion D). The road is therefore recommended ineligible for listing under all criteria.

SN-X1

This resource consists of two standing, in-use utility poles, forming part of a longer line, southeast of the intersection of F and 1st Streets in the town of Argus. Date nails in one of the poles are stamped "35" and "58." No artifacts were observed in association with the poles. They are 15 inches in diameter and 15 feet tall. Additional research is needed to determine the age, associations, and possible significance of the utility line as a whole.

SN-X2

One shallow prospect pit and a sparse scatter of refuse comprise this resource. It is located 1.5 miles northeast of the intersection of US 395 and Trona Road, north of Red Mountain. The L- 311 pipeline corridor runs through the southern edge of the site and may have caused minor impacts during construction. The prospect pit is 18 x 15 feet across and three feet deep, with a pile of backdirt to one side. Roughly 125 fragments of brown, green, amethyst, and colorless bottle glass are scattered in the vicinity, along with a few other items: a car seat spring, two aluminum pull-tab beverage cans (1962–1970s), and a key-wind opened coffee can lid embossed with "MEDIUM GRIND COFFEE [illegible] PERCOLATOR." The few temporally diagnostic items include two green bottle bases (probably Coca-Cola) with Owens-Illinois marks dating to 1954 or later; a post-1940s Pepsi-Cola bottle with red and white applied color label; and fragments of amethyst bottle glass that suggest a pre-1930 date.

The amethyst bottle may date to the period of the prospect pit, judging by other dated mining operations in the region; the other artifacts appear to be later and may represent a separate dumping event. In any event, both the pit and the artifacts are common finds with no known associations to significant events and/or individuals (Criteria A and B). The pit exhibits no distinctive characteristics of engineering, design, or construction, and the assemblage is made up of mass-produced items dating mostly to the mid-twentieth century or later, with little variety or quantity and no real data potential beyond their recordation (Criteria C and D). This resource is therefore recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X3

This moderately dense scatter of bottles, cans, and ceramics lies 1.4 miles northeast of the intersection of US 395 and Trona Road, north of Red Mountain. It consists of about 195 bottle/jar fragments (green, dark brown, opaque white ["milk"], and colorless), 53 sherds of unidentified ceramics (two possible bowls, one possible sewer pipe fragment), 15 cans, and three fragments of galvanized sheet metal. The diagnostic items include a pre-1962 amber glass Clorox bottle fragment, a pre-1930 vent-hole evaporated milk can, and a 1962–1972 aluminum pull-tab can. These items indicate more than one episode of dumping in the early to mid-twentieth century and perhaps later. As an unassociated assemblage of common, relatively late, mass-produced items with little data potential (Criterion D) that is not clearly associated with a significant event or individual (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C), this dump site is recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X4

This mining site is located 1.5 miles northeast of the intersection of US 395 and Trona Road, north of Red Mountain. In consists of two shallow prospect pits and a scatter of historic-era debris. The two pits are hand-excavated and measure 15 x 31 x 2 feet and 29 x 18 x 3 feet. The refuse scatter contains 14 colorless glass bottle shards, 18 cans, a five-gallon metal bucket, and a door from a small appliance. Temporally diagnostic items suggest a mid- to late twentieth-century date for the artifacts (e.g., "church-key" opened beverage cans, aluminum pull-tab beverage cans, 1920s–1964 Hazel Atlas mark), although two tobacco tins may date to the excavation of the two prospect pits (1930s or earlier?).

This temporally mixed scatter includes common, mass produced items which are low in quantity and limited in variety, negating its contribution the regional research themes (Criterion D). The site is also without known associations to significant events and/or individuals (Criteria A and B). Furthermore, the prospect pits are unremarkable examples of a very common resource in the region, with nothing to suggest that they were successful in striking ore; they do not exhibit no unique or distinctive characteristics of engineering, design, or construction (Criterion C). As such, this resource is recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X5

This refuse deposit consists of a scatter of 11 mid-twentieth-century bottles and a single can. The site is located 1.5 miles northeast of the intersection at US 395 and Trona Road. Most of the bottles are colorless oval alcohol "flasks," a few are brown. Makers marks include Glass Containers Corp. (1933–1984) on an oval bottle, Anchor Hocking (1944?) on an oval alcohol flask and 1948 on a round bottle/jar base; Owens-Illinois (1954 or later) on a colorless jar base and 1929–1954 on an oval alcohol bottle; Hazel Atlas dates 1953 and 1954 on two oval brown bases, probably alcohol; a Maywood Glass Co. 1942 mark on a colorless oval base; a Hazel Atlas mark on a ca. 1940s–1950s paneled shoe polish bottle; and a ca. 1930s–1940s Cocomalt internal friction lid.

This small assemblage of containers appears to date to the 1940s–1950s period and probably represents domestic dumping. It is made up of common, mass-produced items with no associated features and no other known associations. The lack of variety or rarity indicates that its data potential is quite limited (Criterion D). It is, moreover, not clearly associated with a significant event or individual (Criteria A and B), does not otherwise embody distinctive characteristics or components (Criterion C), and is recommended ineligible for listing under all criteria, accordingly. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X6

This site consists of a single obsidian flake tool and a single white CCS flake lying adjacent to an unimproved dirt two-track road. The site is 1.4 miles northeast of the intersection of US 395 and Trona Road, north of Red Mountain. Although the obsidian flake tool can provide a relative age (hydration reading) and a source location, the data potential of these two artifacts is quite limited (Criterion D). Moreover, the site encompasses an area modeled to have the lowest potential for buried prehistoric archaeological deposits, is not clearly associated with a significant event and or individual (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). The site is therefore recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X7

A scatter of more than 100 shards of bottle glass, three pieces of ceramics, and three cans were recorded 1.4 miles northeast of the intersection of US 395 and Trona Road, east of Red Mountain. The cans are "church-key" opened beverage cans dating to the period 1930–1960s, and the ceramics are stoneware sherds that resemble sewer pipe material. Among the bottles is a half-pint liquor flask base fragment of colorless glass with a recent "OI" (Owens Illinois) mark, pieces of a green wine-type bottle base with kick-up, and about 25 fragments of colorless bottle glass. This small assemblage is made up of common, mass-produced items with no known associations and little data potential (Criterion D), is not clearly associated with a significant event (Criterion A), does not embody distinctive characteristics or components (Criterion C), and is not obviously linked to a significant historical figure (Criterion B). It is therefore recommended ineligible for listing under all criteria. Regardless, the proposed project location associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X8

This historic-era refuse scatter and five thermal features are on a dirt road (see forward to SN-X9) leading northeast from Trona Road, northeast of its intersection with US 395. Within the wider scatter are three artifact concentrations. The five thermal features are roughly circular clusters of rock, some of them fire-affected, and at least one with visible charcoal. These are interpreted as possible fire rings or hearths of unknown age. They range in diameter from 7 x 9 feet to 4 x 3.5 feet and consist of from 11 to 32 cobbles.

The artifacts in Concentration 1 include brown, green, aqua, and colorless bottle fragments and a sherd from a ceramic (porcelain?) plate with blue floral transfer-print design. Makers marks on some of the bottles suggest a date range in the 1930s–1950s; bottle types include household (Clorox), alcohol, and miscellaneous beverage. Concentration 2 includes a piece of white porcelain with "Made in Japan" mark (post-1921), the base to a colorless "Ball" canning jar, one colorless bottle with white applied color label and a 1934–1968 Glass Container Corp. makers mark, and a brown bottle base with the same mark. Concentration 3 contains similar items. The larger, more dispersed scatter contains a wider variety of artifacts: tea tins, beverage cans and bottles, ceramic vessel fragments, shell buttons, sheet-metal craps, construction pipe, chunks of concrete.

While the artifacts at this site are common and mass-produced, the assemblage has both quantity and variety. Archival research might identify a particular household or other entity responsible for the materials. In addition, the five thermal features need to be investigated more thoroughly to try and determine their age, origin, function, and potential significance. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X9

This resource is a segment of unimproved but well used dirt roadway that may coincide with a road depicted on the 1897 General Land Office (GLO) plat for this area and labeled “Randsburg to Skillings Well.” The recorded segment is approximately 135 feet long and 12–17 feet wide; it continues in both directions beyond the project area. No artifacts were observed on the roadway, although it does run through the large historic-era refuse scatter recorded as SN-X8 (see above). Additional research is necessary to determine what role this nineteenth-century road may have played in the development of the transportation system and settlement of this area. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X10

This deposit of cans and glass fragments and a single rock ring lies 50 feet north of an unimproved dirt access road off Trona Road, about 1.5 miles east of its intersection with US 395. The rock ring is made up of 24 rocks and measures four feet in diameter. A few bits of charcoal lie inside the ring, suggesting use as a campfire location. Four “church-key” opened beer cans (two Burgermeister, one Regal Pale, one Lucky Lager) lie next to the ring. Other artifacts on the site include about 85 cans and a handful of broken bottles (brown, aqua, colorless). Roughly half the cans are 12-ounce beverage containers with “church-key” openers; the rest are single- or multi-serving sanitary food cans, evaporated milk cans, and aluminum pull-tab beverage cans.

The rock ring and adjacent beer cans probably represent a single camping/picnicking event during the 1950s–1960s period; however, the larger refuse deposit reflects either one large or several small mid-twentieth-century dumping events not directly related to the campfire ring. Such roadside dumps are common features of the rural landscape that typically cannot be linked to a particular household, group, or individual and have minimal data potential (Criterion D). The site is, moreover, not clearly associated with a significant event (Criterion A), does not embody distinctive characteristics or components (Criterion C), and is not obviously linked to a significant historical figure (Criterion B). This site is therefore recommended ineligible for listing under all criteria. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X11

This resource is a small, dispersed scatter of cans and bottle glass on the edge of an unimproved dirt access road off Trona Road, 1.4 miles northeast of its intersection with US 395. Most of the constituents are 12-ounce beverage cans with “church-key” openings (n=38), dating to the mid-twentieth century. There are a few milk cans and one 12-ounce aluminum pull-tab can (1962–1972). A brown glass bottle base bears an Owens-Illinois “Duraglas” embossed mark with the date mark for 1952.

This small assemblage of 1950s–1960s cans and bottles represents casual roadside dumping, a common occurrence in rural locations such as this. The materials are mass-produced items with little data potential, as they cannot be linked to any known household, group, or individual (Criterion D). The site is, moreover, not clearly associated with a significant event (Criterion A), does not embody distinctive characteristics or components (Criterion C), and is not obviously linked to a significant historical figure (Criterion B). The site is therefore recommended ineligible for listing under all criteria. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SN-X12

In the same general vicinity as SN-X11 is another example of roadside dumping, this one including 63 cans, 280 shards of bottle glass, 13 ceramic fragments, a few roofing shingles, and other miscellaneous debris. Eight bottle bases have embossed makers marks, including two colorless cylindrical bottle/jar bases with Hazel Atlas marks (1920s–1964), a colorless cylindrical bottle base with a Glass Container Corp. mark (1933–1983), an indeterminate mark on a colorless flask-type alcohol bottle, an Owens-Illinois mark for 1934, 1944, or 1954 on another cylindrical colorless bottle/jar base, a brown base with a mark for the Maywood Glass Company (1930–1959), and brown base fragments from two "SANI/CLOR" bottles (one with a possible Latchford-Marble Glass Co. mark dating 1939–1957). The cans include mostly single-serving sanitary food cans.

This ca. 1930s–1950s dump is one of many similar dump sites commonly found along rural roadways. It has no documented association with a known household, group, or individual, and it contains only typical, mass-produced items dating to the mid-twentieth century. This dump site has limited variety, no rarity, and little in the way of data potential (Criterion D); The site is, moreover, not clearly associated with a significant event (Criterion A), does not embody distinctive characteristics or components (Criterion C), and is not obviously linked to a significant historical figure (Criterion B). It is recommended ineligible for listing under all criteria. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SR-X1

This resource is a single, isolated prospect pit with no associated artifacts or other features. It is situated 1.4 miles southeast of the intersection of Searles Station Cutoff Road and Trona Road, north of Red Mountain. The pit is 13 x 11 feet across and 1.5 feet deep, with a backdirt pile to one side. While clearly associated with mining, the isolated pit is a very common and unremarkable type of feature, cannot be dated, has no known association with persons or events of historical significance (Criteria A and B), and, as an unsuccessful exploration, would not have played a significant role in the development of regional mining (Criteria C and D). It is recommended ineligible for listing under all criteria, accordingly.

SR-X2

A few hundred feet north of SR-X1 is a larger mining site with seven prospect pits and a trench. The features range in size from 11 x 9 feet to 127 x 90 feet; no artifacts were observed anywhere on the site. Such features are very common in the region, and these do not exhibit unique or distinctive characteristics. The lack of artifacts makes them impossible to date, as they do not appear on available historical maps. Nor is there likely to be any documentation to identify who excavated the features. They have no data potential beyond their recordation (Criterion D). The site is, moreover, not clearly associated with a significant event and/or individual (Criteria A and B) and does not embody distinctive characteristics or components (Criterion C). This site is therefore recommended ineligible for listing under all criteria.

SR-X4

This small prehistoric campsite is situated along the southern edge of a dirt access road adjacent to the L-311 pipeline corridor. The site consists of 30 purple FGV flakes, two red and tan CCS flakes, a purple FGV simple flake tool, and a purple FGV core. Multiple dirt bike and other off-highway vehicle (OHV) vehicle tracks intersect the site, attributing to a poor state of condition.

Given the lack of temporally diagnostic artifacts, considering the low diversity of the observable assemblage, due to the disturbed site context, and since it encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits, the site is considered ineligible for listing under all criteria.

The site is not clearly associated with a significant event (Criteria A), is not obviously linked to a significant historical figure (Criteria B), makes no contribution to the broad patterns of regional history, does not embody distinctive characteristics or components (Criteria C), and does not have the potential to contribute to regional research themes (Criterion D). Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

SR-X5

This multicomponent site is just east of the intersection Trona and Searles Station roads and consists of a prehistoric lithic reduction station and historic-era refuse deposit. The prehistoric component includes a sparse scatter of 17 purple FGV core reduction flakes and a single obsidian flake. Historic-era refuse includes milk cans dating between 1917 and 1930, tobacco tins, and food cans dating to the early 1960s. Multiple OHV routes and the well-traveled east-west-trending unimproved road intersect the site, which contribute to a fair condition assessment.

Given the paucity of temporally diagnostic prehistoric artifacts, considering the low diversity of the observable prehistoric assemblage, due to the site's disturbed context, the and since the site encompasses an area modeled to have the lowest sensitivity for buried archaeological deposits (Criterion D), Far Western recommends that the prehistoric component of this site be considered ineligible for listing, or otherwise non-contributing, because of this and due to the fact that it is not clearly associated with a significant event or individual (Criteria A and B), it makes no contribution to the broad patterns of regional history, and does not embody distinctive characteristics or components (Criterion C).

Likewise, roadside refuse deposits of the kind comprising the historical component are common and of little to no informative value regarding regional research themes (Criterion D), nor do they speak to significant historical events or persons (Criteria A and B). The historical component, moreover, does not embody distinctive characteristics or components (Criteria C). Far Western therefore recommends that the historic-era component also be considered ineligible for listing, or a non-contributing portion. Overall, the entire site is recommended ineligible for listing under all criteria. Regardless, the proposed project access road associated with this site has been removed from the current project design, and adverse effects due to project design are not expected.

NEWLY RECORDED ISOLATES

Survey of the L-311 project APE resulted in the recordation of 13 prehistoric and 120 historic-era isolated finds (Table 12). More than half (ca. 54%) of the few prehistoric isolates are single or coupled pieces of debitage, while half of all historic-era isolates are single or coupled cans of varied purpose. Overall, however, cans comprise nearly half of all isolated resources documented during the current project, while nearly a third (ca. 28%) are small refuse scatters comprised of fewer than nine cans. Historic-era litter is prolific in the current project area. None of the newly recorded isolates are considered eligible for listing.

Table 12. L-311 Isolate Summary.

ISOLATE CATEGORY	NO.	%ERA	%TOTAL
PREHISTORIC			
Core/Tested Cobble	2	15.4	1.5
Debitage (1–2 flakes)	7	53.8	5.3
Handstone	1	7.7	0.8
Millingslab	1	7.7	0.8
Simple Flake Tool	1	7.7	0.8
Small SRL	1	7.7	0.8
Prehistoric Subtotal	**13**	**-**	**9.8**
HISTORIC-ERA			
Automotive	1	0.8	0.8
Bottle	15	12.5	11.3
Bottle & Other (1 Bottle + 1 Can, Ceramic, or Tire)	2	1.7	1.5
Can (1–2 cans)	60	50.0	45.1
Debris (1–2 pots, pans, milled lumber, etc.)	2	1.7	1.5
Insulator	1	0.8	0.8
Jar	1	0.8	0.8
Small Refuse (3–-9 cans and/or other single type)	37	30.8	27.8
Tool	1	0.8	0.8
Historic-era Subtotal	**120**	**-**	**90.2**
Total	**133**	**-**	**-**

CHAPTER 8. ELIGIBILITY AND MANAGEMENT RECOMMENDATIONS

Based on Far Western's limited (i.e., non-excavation and non-collections-based) assessment of site eligibility to the National Register and California Register, only one newly recorded site (EM-X9) is recommended eligible for listing (Table 13). The site is associated with the Rand Mining District, likely incorporates a segment of the Randsburg Railway (SBR-5731H), and has the potential to contribute significant information relating to aspects of technological innovation, economic development, aspects of ethnicity and gender, consumer choice and economic/social conditions, and/or corporate mining policy. As such, the historic-era component of this site is recommended eligible for listing under Criteria A and D; further research would be required to assess its eligibility under B and/or C. Although possessing little potential to preserve buried prehistoric archaeology based on GIS-based sensitivity modeling, the prehistoric component nonetheless retains the potential to significantly enhance understanding of regional prehistoric hunter-gatherer land-use organization, toolstone acquisition, and chronology, especially considering the rarity of prehistoric resources in the vicinity. The prehistoric component is therefore considered a contributing element of site eligibility under Criterion D.

The site area does not intersect any proposed work locations, but a proposed access road extending from US 395 to Location M does intersect the site area. None of the documented site elements are within the extant access roadway, which is itself not historical. However, two site loci (Loci 2 and 3; both historic-era debris scatters), two features (Features 4 and 6; a corral and barrel branding heater, respectively), and two piece-plotted artifacts (A9 and A10; a prehistoric biface and millingslab, respectively), have the potential to be impacted by off-road traffic (see site record in Confidential Appendix G). Far Western therefore recommends that efforts be extended to prevent off-road traffic. The road margin should be fenced for protection beginning 100 feet before the site boundary and ending 100 feet after the site boundary.

Nine newly recorded historic-era sites (i.e., EG-X6, EM-X1, EM-X3, EM-X6, EM-X8, EM-X10, SN-X1, SN-X8, and SN-X9), and the historic-era component of one multicomponent site (EM-X5) require further research, including archival studies and/or limited test excavation, to fully assess site eligibility. Of these ten sites, one is a road (SN-X9), three are mining related (EM-X5, EM-X6 and EM-X8), three are historic refuse deposits (EG-X6, EM-X1, and SN-X8), one is a utility line (SN-X1), and two incorporate rock features (EM-X3 and EM-X10).

Three of these sites (EM-X3, SN-X8, and SN-X9) are located in work areas or along access roads that have been removed from the project, therefore no further management is warranted at this time. Of the remaining seven sites, only the utility line (SN-X1) is within a work location (i.e., Argus LNG), but it is anticipated that work within this location will necessarily avoid this in-use utility line. All other newly recorded resources that require further research are within or overlap existing access roads. Thus, proposed work efforts will only have adverse effects on these resources if maintenance of these roads extends beyond the existing road prism. Effects can be limited by fencing-off resource areas intersected by access road APEs.

All other newly recorded sites, as well as all but one previously recorded site (i.e., SBR-7377H) and the project portions of two others (i.e., SBR-10316H and SBR-16756H) are considered ineligible for listing, or otherwise deemed non-contributing to resource eligibility. The recorded segment of a historic-era railroad grade intersecting the Argus LNG (i.e., SBR-8547H) is recommended ineligible for listing, but a newly documented segment (SR-X3) intersecting the northern buffer of Location T and an adjacent proposed access road will require further historical research to assess its contribution to site eligibility, or lack thereof. This resource should be flagged for avoidance. Although sites SBR-10316H was previously determined eligible for listing, that portion within the current project area is not considered to be a contributing portion. Similarly, although currently unevaluated overall, that portion of SBR-16756H intersecting the A-C Staging Area is not considered significant and would not constitute a contributing element to resource eligibility. Sites KER-7738/SBR-13799H, SBR-13800H, and P-21450 were previously determined ineligible by BLM.

On the whole, SBR-7377H is eligible to the National and California Registers under Criteria A and D. However, the four new intra-site loci documented during the current project variably contribute to this eligibility. Further research is required to assess the contributions of SBR-7377H site areas EG-X32 and RB-X4, but EG-X33 is considered a non-contributing portion to the eligibility of the larger site. Since PG&E has removed Locations J and K south as well as the associated access road from the project design, no further management of these resources is warranted for the current project. If PG&E wishes to use the access road connecting the northern and southern portions of Location K, Far Western recommends fencing-off that segment of the nearby access road along the course of the extent of EG-X34, which probably represents a segment of the Randsburg Railway (SBR-5731H), and is a significant contributor under Criterion A.

Finally, a clear majority (nearly 96%) of the L-311 APE intersects areas modeled to have the lowest or low potentials to preserve buried prehistoric archaeological material, limiting the potential for unidentified resources to be found during construction. Those work locations modeled to have high or the highest sensitivity include Location Z and the eastern portion of the Argus LNG. Otherwise, the western part of the Argus LNG and nearly all of Location Y incorporate areas modeled to have moderate potential for buried prehistoric archaeology. At minimum, the areas with high-highest sensitivity for the presence of buried resources should be monitored during construction.

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PROJECT AREA

CONFIDENTIAL APPENDIX B

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