

***Title***      **A Plan for the Management of the Cultural Heritage  
at Los Alamos National Laboratory, New Mexico**

***Prepared by***      **Ecology Group for the  
Department of Energy**



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Cover photo: Entrance into Los Alamos during the 1940s and early 1950s.

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# 1 Executive Summary

2 The Los Alamos National Laboratory (LANL) Cultural Resources Management Plan (LANL  
3 Plan) is an **institutional** comprehensive plan that defines the responsibilities, requirements, and  
4 methods for managing its cultural resources. The LANL Plan provides an overview of the cultural  
5 resources program, establishes a set of procedures for effective compliance with historic  
6 preservation laws specific to the cultural heritage here and specific to the United States  
7 Department of Energy, National Nuclear Security Administration (DOE/NNSA) mission,  
8 addresses land-use constraints and flexibility, and makes the public aware of the stewardship  
9 responsibilities and of and steps being taken by DOE/NNSA for managing the cultural heritage of  
10 LANL.

11  
12 A critical aspect of the LANL Plan is that of defining strategies by which to increase land-use  
13 flexibility in support of the DOE/NNSA mission at LANL while at the same time effectively  
14 managing those cultural resources warranting long-term protection. The LANL Plan also provides  
15 a 10-year road map that summarizes and prioritizes the steps necessary for LANL and the Los  
16 Alamos Site Office of DOE/NNSA (LASO) to manage these resources.

17  
18 The Cultural Resources Team of the Ecology Group of the Environmental Stewardship Division  
19 is tasked with the responsibility of assisting LASO with meeting DOE/NNSA historic  
20 preservation compliance mandates. This relationship and specific roles in the compliance process  
21 are defined in the LANL Plan.

22  
23 The LANL Plan is divided into 25 numbered sections grouped into six thematic parts. These are  
24 summarized as follows.

25  
26 **Part I. Background.** Sections 1–6 provide general background information in support of the  
27 LANL Plan.

28  
29 **Section 1** describes the purpose of the LANL Plan. **Section 2** discusses applicable historic  
30 preservation laws, regulations, guidelines, and policies. **Section 3** provides a glossary of terms  
31 commonly used in cultural resources management. **Section 4** briefly describes the physical and  
32 environmental setting of LANL. **Section 5** presents a summary of Pajarito Plateau culture from  
33 the earliest known occupations of the Paleoindian period 10,000 years ago through that of the  
34 Manhattan Project and the Cold War, defined here as ending in 1990.

35  
36 **Section 6** lists the numbers and types of historic properties at LANL and provides brief  
37 descriptions of each general type. As of October 2004, 86% of LANL has received systematic  
38 archaeological survey. The remaining unsurveyed lands are located in the undeveloped portions  
39 of Technical Area (TA) 5, TA-33, TA-68, TA-70, TA-71, and other scattered locations across the  
40 Laboratory.

- 41  
42
- 43 • At LANL, 1933 archaeological sites have been recorded. This includes 1796 prehistoric  
44 archeological sites, most of which are Ancestral Pueblo dating to the 13th through 15th  
45 centuries.
  - 46 • Of these 1796 prehistoric sites, 440 have been assessed for their eligibility for  
47 nomination to the National Register of Historic Places (Register) in consultation with the  
48 New Mexico State Historic Preservation Officer (SHPO). The SHPO determined that  
49 378 were eligible, 61 sites ineligible, and one of undetermined status. Not yet formally  
assessed are 1356 sites.

- 50 • Thus, 1735 archaeological sites are eligible or await formal assessment to the Register
- 51 and, therefore, must be treated as if they are eligible until evaluated.
- 52 • One-hundred-thirty-seven (137) historic archaeological sites have been recorded,
- 53 representing combined Homestead period (ca. 1890 to 1943), Manhattan Project period
- 54 (1942 to 1946), and that portion of the Cold War (1946 to 1990) dating before
- 55 approximately 1963. Of this number, 55 sites have been assessed for Register eligibility
- 56 in consultation with the SHPO. Thirty-five (35) were determined eligible for the Register
- 57 and 20 sites determined ineligible. The remaining 82 sites have not yet been evaluated.
- 58 • Five hundred thirty-six (536) buildings and structures date to the Manhattan Project
- 59 (1942 to 1946) or early portion of the Cold War (1946 to 1956). A total of 189 of these
- 60 have been evaluated for Register eligibility, of which 108 have been determined eligible
- 61 and 81 not eligible.

62  
 63 **Part II. National Historic Preservation Act Compliance: Section 106.** Sections 7–11 address  
 64 how LANL accomplishes compliance with Section 106 of the National Historic Preservation Act  
 65 (NHPA).

66  
 67 **Section 7** presents an overview of Section 106 of the NHPA, the most powerful of the historic  
 68 preservation laws. Section 106 requires Federal agencies to take into account the effects of their  
 69 undertakings on historic properties and empowers SHPOs as regulators for compliance with the  
 70 law.

71  
 72 **Section 8** presents the details of a Programmatic Agreement (PA) between LASO and the SHPO,  
 73 and co-signed by the Advisory Council on Historic Preservation (ACHP), that builds on an  
 74 original PA executed in April 2000 and will be revised to authorize and implement the present  
 75 LANL Plan. The PA together with the LANL Plan streamlines the NHPA Section 106 process.

76  
 77 **Section 9** builds on the PA outlined in the previous section and lays out the revised and updated  
 78 process by which to streamline and to comply with the requirements of NHPA Section 106  
 79 project review. The cultural resources project review system is outlined, including the LANL  
 80 electronic Permits and Requirements Identification system, Excavation/Soil Disturbance Permit  
 81 requests, and other review processes. Key components of the streamlined review include the  
 82 following:

- 83
- 84 • A listing of property types exempt from review.
- 85 • Annual reporting to the SHPO of “No Property-No Effect” undertakings.
- 86 • Being able to immediately proceed with LANL project construction activities once a “No
- 87 Effect Through Avoidance” undertaking has been determined. The determination will be
- 88 reported to the SHPO by means of a letter report or other formal notification.
- 89 • Biannual reporting to the SHPO of “No Adverse Effect” undertakings involving
- 90 remodeling or modification to interior rooms of post-1945 administrative and support
- 91 buildings.
- 92 • Reporting to the SHPO of archaeological surveys with negative findings on a case-by-
- 93 case basis.
- 94

95 Section 9 also states the importance to LANL of moving forward with the formal SHPO  
 96 assessment of the 1356 archaeological sites not yet evaluated for the Register.

97  
 98 **Section 10** outlines in considerable detail the methods used to evaluate, document, and manage  
 99 post-1942 historic buildings and structures, in compliance with the NHPA. It discusses the

100 importance of the development of historic contexts, the manner in which historic significance and  
101 integrity are assessed, and the development of Memorandums of Agreement with the SHPO by  
102 which to document and/or manage specific historic structures and buildings. A total of 26  
103 Manhattan Project and early Cold War historic buildings and structures in 12 separate locations at  
104 the Laboratory have been identified as having exceptional significance and the development of  
105 Preservation Plans for their long-term management should be considered.

106  
107 **Section 11** outlines in considerable detail the conduct of archaeological resources management at  
108 LANL, addressing the methods used to evaluate, document, and manage archaeological sites, in  
109 compliance with the NHPA. It addresses the issues of standards, procedures, and goals. An  
110 outline of the LANL Significance Standards for Archaeological Sites is provided, and its  
111 application to specific project research designs, data recovery plans, and associated  
112 comprehensive agreements is discussed. The methods associated with archaeological survey,  
113 general fieldwork for excavations, and archaeological laboratory procedures are highlighted.  
114 Many of the details for archaeological resources management and other aspects of the cultural  
115 resources program are noted and referenced in Appendix B.

116  
117 **Part III. National Historic Preservation Act Compliance: Section 110.** Sections 12–16  
118 address how LANL accomplishes compliance with Section 110 of the NHPA.

119  
120 **Section 12** presents an overview of NHPA Section 110. Section 110 broadly sets out the historic  
121 preservation responsibilities of Federal agencies. The NHPA also establishes the ACHP as a  
122 Federal watchdog for compliance with the Act.

123  
124 **Section 13** discusses the conduct and status of archaeological survey. It is recommended that the  
125 remaining 14% of LANL unsurveyed land be scheduled for survey during the next several years.  
126 It is noted that the 86% surveyed lands include 14 archaeological surveys conducted during the  
127 period of 1991 to 1995 for which reports have not yet been completed and submitted to the  
128 SHPO. In addition, approximately 400 archaeological sites identified during archaeological  
129 survey as part of the Cerro Grande Rehabilitation Project have not been formally recorded in  
130 compliance with the NHPA. It is recommended that the Laboratory meet with the SHPO to  
131 discuss a process and schedule by which to complete the site records and submit the reports  
132 beginning in fiscal year (FY) 2006.

133  
134 **Section 14** describes issues and responsibilities for compliance with 36 CFR Part 79, Curation of  
135 Federally Owned and Administered Archaeological Collections. These collections include not  
136 only artifacts and samples that have been recovered from various survey, testing, and excavation  
137 programs, but also the field and laboratory records that are associated with these materials.  
138 Currently, the Laboratory of Anthropology at the Museum of New Mexico is the designated  
139 repository for LANL collections. However, sizable collections are also temporarily being held by  
140 the University of California at Los Angeles (representing survey and testing conducted in 1977–  
141 1985) and by the LANL cultural resources program based on the ongoing Land Conveyance and  
142 Transfer Project excavations scheduled for completion in FY 2007. Eventually the collections  
143 will need to be consolidated into a single repository. Some options for permanent curation are  
144 briefly discussed. Artifacts dating to the Manhattan Project and Cold War constitute an important  
145 exception to this collection policy. Such artifacts are collected, evaluated, and temporarily curated  
146 by the LANL cultural resources program in conjunction with the Bradbury Science Museum.  
147 These artifacts eventually may be loaned to other institutions and organizations, or accessioned  
148 by the Museum.

149

150 **Section 15** recommends the establishment of two National Historic Landmark Districts at LANL  
 151 based on the integrity, exceptional state, and national significance that these resources have.

152  
 153 The “*Project Y*” *Manhattan Project National Historic Landmark District* would contain five  
 154 contributing sets of historic properties in an area estimated to be approximately 4 hectares  
 155 (10 acres):

- 156
- 157 • “Trinity Test” V-Site in TA-16
- 158 • “Fat Man” Quonset Hut in TA-22
- 159 • “Little Boy” Gun Site in TA-8
- 160 • “Plutonium Recovery” Concrete Bowl in TA-6
- 161 • “Criticality Accident” Slotin Building in TA-18
- 162

163 The *LANL Ancestral Pueblo National Historic Landmark District* would contain four  
 164 contributing sets of historic properties in an area estimated to be approximately 53 hectares  
 165 (132 acres):

- 166
- 167 • Nake’muu Pueblo in TA-37
- 168 • Tsirege Pueblo in TA-54
- 169 • Sandia Pueblo and Mortandad Cave Kiva in TA-5
- 170 • Sandia Canyon Cave Kiva in TA-72
- 171

172 **Section 16** recommends the establishment of the *Los Alamos Archaeology National Register*  
 173 *Historic District*. This is complementary to but separate from the two National Historic  
 174 Landmark Districts. In addition to important Archaic period and Ancestral Pueblo resources, the  
 175 national register historic district also strives to preserve significant archaeological aspects of the  
 176 Homestead period. The national register historic district is based on the integrity and the great  
 177 significance that these resources have for the State of New Mexico and for the northern New  
 178 Mexico pueblo communities. The national register historic district potentially includes 10  
 179 archaeological site complexes, including the remains of four homesteads or ranch structures  
 180 dating between 1890 to 1943. The combined size of all 10 complexes is approximately  
 181 598 hectares (1496 acres).

182  
 183 **Part IV. Native American Consultation and Outreach.** A number of laws require various  
 184 types of consultation with culturally affiliated, Federally recognized Native American tribes.

185  
 186 **Section 17** provides information on the Native American consultation and outreach program. It  
 187 provides a detailed discussion of cultural affiliation, in particular as it relates to Ancestral Pueblo  
 188 archaeological sites and human remains at LANL. The Pueblo of San Ildefonso claims virtually  
 189 all of LANL with the exception of the Fenton Hill parcel as being within their traditional  
 190 boundaries. In addition, the Pueblos of Cochiti and Santa Clara claim at least portions of LANL,  
 191 while the Pueblo of Jemez is recognized as being affiliated with the Fenton Hill parcel. It has also  
 192 been established that the Jicarilla Apache Nation and possibly the Mescalero Apache Tribe are  
 193 affiliated to a few archaeological sites in Rendija Canyon, and perhaps elsewhere at LANL. All of  
 194 the northern New Mexico pueblos, along with the Hopi Nation in Arizona and the Pueblo of  
 195 Ysleta del Sur in Texas, are considered affiliated to sites dating to the Archaic period. This  
 196 section also considers issues relating to the Native American traditional cultural properties, the  
 197 Native American Graves Protection and Repatriation Act, NHPA Section 106 consultation, and  
 198 various outreach programs.

199

200 **Part V. Strategic Planning and Long-Term Management Issues and Goals.** Sections 18–22  
201 address issues concerning the conduct of strategic planning and aspects of the long-term  
202 management of cultural resources at LANL.

203

204 **Section 18** notes that cultural resources management must be integrated with strategic planning  
205 initiatives. This includes the Ten-Year Comprehensive Site Plan and the Site-Wide  
206 Environmental Impact Statement, both administered by LASO, as well as working with  
207 individual facility strategic planning efforts.

208

209 **Section 19** discusses the importance of working with the SHPO to complete the Register  
210 eligibility determinations of those 1356 previously identified archaeological sites that have not  
211 yet been formally evaluated, and to potentially reassess the boundaries and integrity of a number  
212 of large artifact scatters that may no longer meet the modern standards for eligibility. The purpose  
213 of moving forward to complete these evaluations is to increase land-use flexibility in support of  
214 the DOE/NNSA mission at LANL while at the same time to better focus efforts on those  
215 resources most needing long-term management and protection.

216

217 **Section 20** outlines the rationale and steps for long-term monitoring and protection of key  
218 archaeological sites and historic buildings and structures, as is required under the Archaeological  
219 Resources Protection Act and Section 110 of the NHPA. This includes routine yearly monitoring  
220 of those resources noted in Section 15 as being worthy of National Historic Landmark status, as  
221 well as periodic monitoring of the Section 16 National Register Historic District. In addition,  
222 periodic monitoring would be performed on an as needed basis for sensitive sites such as complex  
223 plaza pueblos and traditional cultural properties, as well as other significant resources threatened  
224 by erosion or by vandalism.

225

226 **Section 21** briefly discusses opportunities for public education, interpretation, and outreach. At  
227 least some interpretation and outreach may be the result of requirements necessitated by NHPA  
228 Section 106 consultation.

229

230 **Section 22** outlines issues pertaining to emergency management at LANL. The May 2000 Cerro  
231 Grande Fire illustrated the need to be prepared for emergencies so that procedures and steps can  
232 be performed to reduce the likelihood of unintentional damage to archaeological resources.

233

234 **Part VI. Safety, Security, and Quality Assurance.** Section 23–25 deal with issues of safety,  
235 security, and the quality of processes and products associated with the cultural resources program.

236

237 **Section 23** summarizes the steps taken by the LANL cultural resources program to make sure that  
238 all field, laboratory, and office work is conducted in a safe and secure manner.

239

240 **Section 24** addresses the fact that an administrative record will be maintained for certain aspects  
241 of the cultural resources program above and beyond the normal archaeological and historic  
242 preservation records described in Sections 10, 11, and 14. These administrative records would  
243 include Native American consultation and formal consultation with regulators including the  
244 SHPO and the ACHP.

245

246 **Section 25** emphasizes the fact that all work performed by and on behalf of the cultural resources  
247 program will be guided by specific standards and procedures and by a general Quality Assurance  
248 Program Plan. These are referenced in Appendix B.

249

250 **Appendix A** consists of an annotated 10-Year Road Map for the LANL Plan that lists key  
251 priorities on a year-by-year basis. These represent the steps felt necessary to successfully  
252 implement the LANL Plan and to best meet both DOE/NNSA mission requirements while being  
253 effectively compliant with historic preservation laws. The 10-Year Road Map will be reviewed on  
254 a yearly basis. It is emphasized, however, the implementation of the road map is contingent on  
255 available funding.

256  
257 **Appendix B** is an annotated list of all documents on file with the LANL cultural resources  
258 program that support this LANL Plan and the daily activities of the program. These include  
259 standards, procedures, plans, guidance documents, laws, regulations, and all other related  
260 materials.

261  
262 Upon acceptance of the LANL Plan by the SHPO and the ACHP, a PA will be executed between  
263 DOE/NNSA, the SHPO, and the ACHP.

264

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410 **List of Acronyms**

411	ACHP	Advisory Council on Historic Preservation
412	AEC	United States Atomic Energy Commission
413	AIRFA	American Indian Religious Freedom Act of 1978
414	APE	area of potential effects
415	ARMS	Archaeological Resources Management System
416	ARPA	Archaeological Resources Protection Act of 1979
417	CGRP	Cerro Grande Rehabilitation Project
418	DOE	United States Department of Energy
419	ENG-DCRM	Document Control and Records Management Group
420	ENV	Environmental Stewardship (Division)
421	ENV-ECO	Ecology Group
422	EO	Executive Order
423	EOC	Emergency Operations Center
424	ER	Environmental Restoration (Project)
425	ESA	Engineering Sciences and Applications (Division)
426	FM	Facility Manager
427	FMU	Facility Management Unit
428	FIRP	Facility Infrastructure and Revitalization Project
429	FS	Field Specimen
430	FY	fiscal year
431	GIS	geographic information system
432	GPS	Global Positioning System
433	HABS	Historic American Building Survey
434	HAER	Historic American Engineering Record
435	HSR-8	Safety and Industrial Hygiene Field Support Group
436	ISM	Integrated Safety Management
437	IWD	integrated work document
438	LANL	Los Alamos National Laboratory
439	LASO	Los Alamos Site Office
440	LIR	Laboratory Implementation Requirement
441	MOA	Memorandum of Agreement
442	MOADs	'Mother of All Databases'
443	NAGPRA	Native American Graves Protection and Repatriation Act of 1990
444	NCB LIR	NEPA, Cultural Resources, and Biological Resources Laboratory Implementation Requirement
445		
446	NEPA	National Environmental Policy Act of 1969
447	NHL	National Historic Landmark (District)
448	NHPA	National Historic Preservation Act of 1966
449	NNSA	National Nuclear Security Agency
450	NTS	Nevada Test Site
451	PA	Programmatic Agreement
452	PARP	Pajarito Archaeological Research Project
453	PM	Project Management (Division)
454	PR-ID	Permit Requirements Identification (system)

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455	PRS	potential release site
456	RCRA	Resource Conservation and Recovery Act
457	RFI	RCRA Facility Investigation
458	S	Safeguards and Security (Division)
459	S-7	Classification Group
460	SALT	Strategic Arms Limitation Talks (I and II)
461	SHPO	State Historic Preservation Officer
462	START	Strategic Arms Reduction Treaty
463	SWEIS	Site-Wide Environmental Impact Statement
464	SWMU	solid waste management unit
465	TA	Technical Area
466	TCP	traditional cultural property
467	THPO	Tribal Historic Preservation Officer
468	TYCSP	Ten-Year Comprehensive Site Plan
469	UCLA	University of California at Los Angeles
470		
471		

## 472 **Part I. Background**

### 473 **Section 1. Purpose of the Cultural Resources Management Plan**

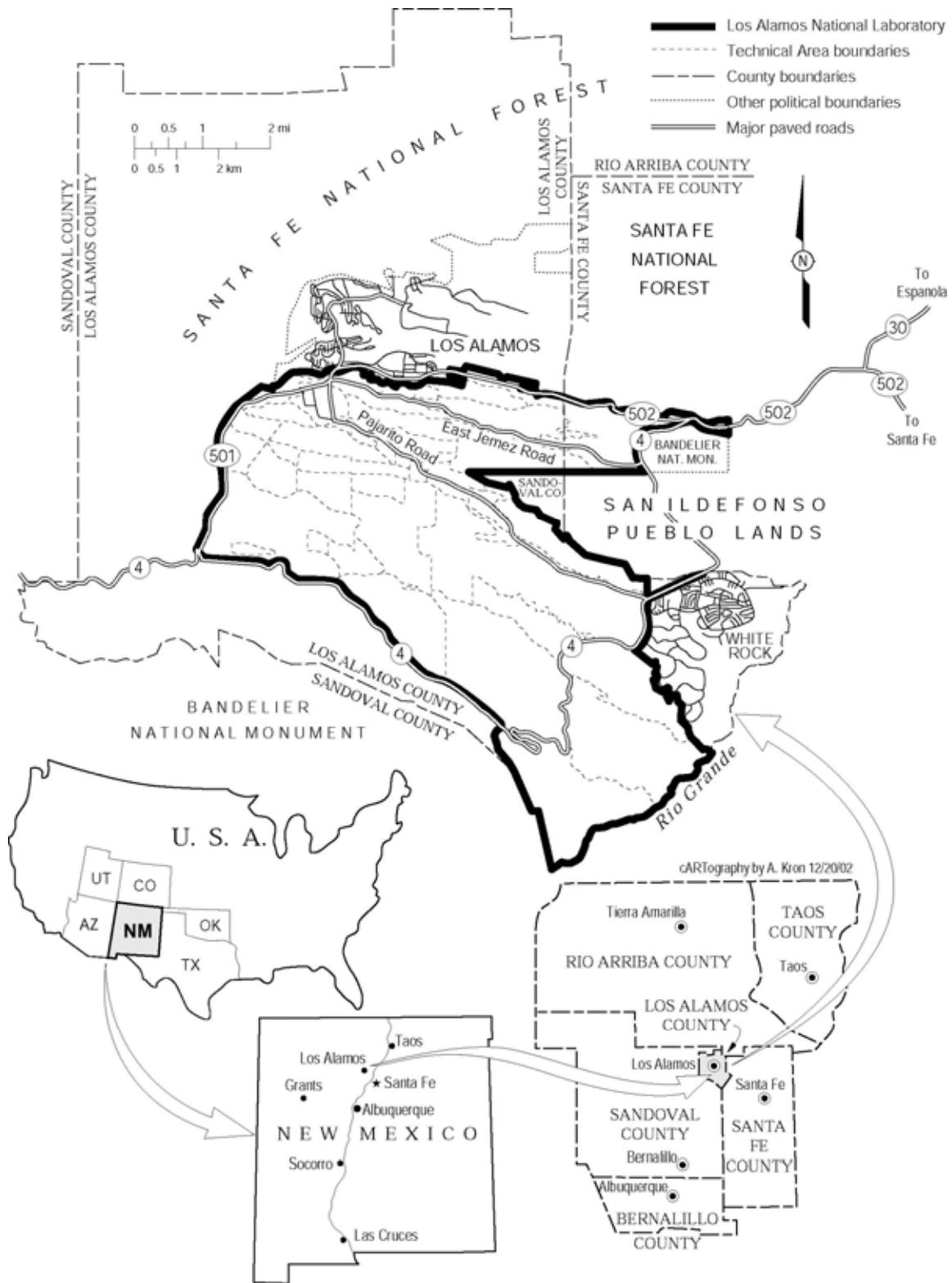
474 Los Alamos National Laboratory (LANL) is currently managed by the University of California  
475 for the United States Department of Energy, National Nuclear Security Administration  
476 (DOE/NNSA). As of September 2003, LANL consisted of approximately 11,643 hectares  
477 (28,747 acres—44.9 square miles) of the Pajarito Plateau, adjacent to the Jemez Mountains in  
478 northern New Mexico (Figure 1.1). This land area began shrinking starting in October 2003 in  
479 response to a Congressionally mandated transfer of excess lands, and by 2007 it is anticipated that  
480 LANL will have an area of approximately 10,000 hectares (24,710 acres). An additional 6  
481 hectares (15 acres) are situated at Fenton Hill, a discontinuous parcel located in the Jemez  
482 Mountains approximately 32 kilometers (20 miles) west of the town of Los Alamos.

483  
484 This LANL Cultural Resources Management Plan (LANL Plan) is designed to provide a practical  
485 and user friendly set of steps and procedures for complying with Federal historic preservation  
486 laws and regulations and with DOE/NNSA policies and directives relating to cultural resources at  
487 LANL. A critical aspect of the LANL Plan is that of defining strategies by which to increase  
488 land-use flexibility in support of the DOE/NNSA mission while at the same time most effectively  
489 managing those cultural resources warranting long-term protection. Although historic  
490 preservation laws mandate that all cultural resources be properly evaluated for their integrity and  
491 significance, these same laws recognize that not all “historic properties” are eligible for listing in  
492 the National Register of Historic Places (Register) (described below) or are of equal significance  
493 and value.

494  
495 There are about 2000 known archaeological sites at LANL. The great majority of these sites  
496 represent the villages, farmsteads, resource exploitation areas, rock art panels, trails, and shrines  
497 of more than 10,000 years of Native American use of the Pajarito Plateau, knowledge of which is  
498 still actively preserved in the living memory of modern Puebloan neighbors and other nearby  
499 tribes. The Ancestral Puebloan remains are themselves of such cultural richness and significance  
500 that in the early 1900s the lands now occupied by LANL were included in the then proposed  
501 “Pajarito Park,” which, due to political pressures, was eventually scaled back to that of present  
502 Bandelier National Monument. The other archaeological sites at LANL represent the remains of  
503 homes, wagon roads, trails, trash scatters, fences, and fields of early 20th century Hispanic and  
504 Anglo homesteaders. In addition, the built environment includes hundreds of historic buildings  
505 and structures that represent locations where significant research and development activities took  
506 place—beginning with the Manhattan Project in 1943—that helped to define the recent history of  
507 the United States and many aspects of the modern technological world.

508  
509 Cultural resources can be considered “heritage resources” in that they represent an inheritance or  
510 legacy from past peoples and events that provide a historical context for the present employees  
511 and managers of LANL, for neighboring communities and Native American tribes, and for the  
512 Nation. Therefore, the LANL Plan also provides some information about the nature of these  
513 resources and the rationale for why it is important to manage, protect, and preserve these  
514 resources. The LANL Plan is intended to be comprehensive, however, along with the road map  
515 outlined in Appendix A, the nuts-and-bolts details are largely left to supporting documents, listed  
516 in Appendix B, that help to guide LANL professional cultural resources managers in the daily  
517 conduct of their duties.

518



519  
520  
521  
522

Figure 1.1. Location of Los Alamos National Laboratory.

523 LANL is tasked with the responsibility of assisting the DOE/NNSA Los Alamos Site  
524 Office (LASO) with meeting DOE/NNSA historic preservation compliance mandates at  
525 LANL. This relationship and specific roles in the compliance process are defined in the  
526 LANL Plan.  
527

528 The LANL Plan is organized according to six broad parts, each containing from one to six  
529 distinct topical sections. The overarching parts include background, compliance with Section 106  
530 of the National Historic Preservation Act (NHPA), compliance with Section 110 of the NHPA,  
531 Native American consultation and outreach, strategic planning and long-term management and  
532 goals, and basic safety, security, and quality assurance procedures. The document contains a total  
533 of 25 specific sections and two appendices. Appendix A is a 10-year Road Map for the LANL  
534 Plan. Appendix B is an annotated list of plans, documents, and measures on file at LANL that  
535 support the LANL Plan and the cultural resources program. The Road Map will be reviewed on a  
536 yearly basis. It is emphasized, however, the implementation of the road map is contingent on  
537 available funding.  
538

539 With approval of this Plan by LASO, the New Mexico State Historic Preservation Officer  
540 (SHPO), and the Advisory Council on Historic Preservation (ACHP), the LANL Plan and its  
541 associated implementing Programmatic Agreement (PA) between these agencies and regulators  
542 replaces the original PA of April 2000.

## 543 **Section 2. Cultural Resources Statutes, Executive Orders and** 544 **Memoranda, Regulations, Policy, Standards, and** 545 **Guidelines**

546 There are more than two dozen Federal laws, executive orders (EOs), memoranda, and policies  
547 that touch upon historic preservation and cultural resources issues, however only about half of  
548 these have substantive application to the lands and operations at LANL itself. These are  
549 summarized below.

### 550 **Statutes**

#### 551 ***Antiquities Act of 1906 (16 USC 432, 433)***

552 The Antiquities Act was the first Federal law to provide protection of historic and prehistoric  
553 ruins and monuments and objects of antiquity on Federal lands. It authorized the President to  
554 establish national monuments to protect historic and prehistoric structures and objects of historic  
555 or scientific interest. It also established a system to permit examination and excavation by  
556 qualified researchers to increase knowledge and collect antiquities for permanent preservation in  
557 public museums. Penalties were established for unauthorized excavation and collection.  
558 Implementing regulations are codified at 43 CFR Part 3. It is notable that this law was created in  
559 part as a direct response to the richness of the archaeological resources on the Pajarito Plateau  
560 (including on present LANL lands) and the fact that these and other archaeological resources  
561 throughout the United States were being threatened with destruction from looters and  
562 development.

#### 563 ***Historic Sites Act of 1935 (16 USC 461)***

564 The Historic Sites Act declared a national policy to identify and preserve historic sites, buildings,  
565 objects, and antiquities of national significance. The law authorized the Secretary of the Interior  
566 to conduct surveys, collect and preserve data, and acquire historic and archaeological sites. The

567 Historic American Building Survey (HABS) and Historic American Engineering Record (HAER)  
568 originated from this Act, as well as the National Park Service program of designating National  
569 Historic Landmark (NHL) Districts.

570 ***National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.)***

571 The NHPA is the cornerstone of the current Federal cultural resource preservation program. It  
572 sets forth a general policy of supporting the preservation of historic and prehistoric buildings and  
573 properties by the Federal government for the benefit and education of the people of the United  
574 States. The law states that the Federal government will financially and technically assist efforts to  
575 preserve aspects of prehistoric and historic heritage in the United States and will administer  
576 Federally owned historic and prehistoric resources.

577

578 The Secretary of the Interior is authorized to expand and maintain a Register composed of  
579 districts, sites, buildings, structures, and objects significant in American history, architecture,  
580 archaeology, engineering, and culture.

581

582 The Secretary is empowered to establish criteria for nominating properties to the Register,  
583 designating properties as NHL Districts, considering appeals to recommendations and  
584 nominations, nominating historic properties to the World Heritage List, making determinations of  
585 eligibility of properties for inclusion on the Register, and notifying property owners and the  
586 public when property is being considered for nomination to the Register.

587

588 NHPA encourages the development of state preservation efforts and programs, including the  
589 establishment of a SHPO. The SHPO is required to identify and inventory historic properties in  
590 the state, nominate eligible properties to the Register, implement a statewide preservation  
591 program, communicate with the Federal and state agencies on matters of preservation, ensure that  
592 Register eligible properties are taken into account during planning and development, and provide  
593 information, technical assistance, and education to the public regarding preservation matters.

594

595 A grant program is provided through NHPA that provides funds for states for the purposes of  
596 identifying historic properties and for the preservation of Register properties. Grants are made  
597 available for the operation of the National Trust for Historic Preservation. Additional funds may  
598 be provided for the preservation of NHL Districts threatened with damage or destruction, public  
599 education and training in historic preservation, and to Native American tribes and nonprofit  
600 organizations representing ethnic and minority groups for the purpose of preserving their cultural  
601 heritage.

602

603 NHPA establishes the ACHP. This independent Federal agency is required to advise the  
604 President, the Congress, and other Federal agencies on matters relating to historic preservation,  
605 encourage public education and participation in historic preservation, and review policies and  
606 programs of Federal agencies in order to improve their effectiveness and efficiency.

607

608 Section 106 of NHPA requires Federal agencies to take into account the effect of any Federal or  
609 Federally funded undertaking on any district, site, building, structure, or object that is included in  
610 or is eligible for inclusion in the Register. The ACHP must be given an opportunity to comment  
611 on the undertaking's effect on historic properties unless it is determined by the Federal agency  
612 that there is no effect or no historic property involved in the undertaking. Federal agencies must  
613 take into account the effects of their undertakings on cultural resources at the planning stage and  
614 provide for protective measures or other mitigation and treatments for any affected resources. The  
615 implementing regulations for Section 106 are contained in 36 CFR Part 800.

616 Section 110 of NHPA requires the heads of all Federal agencies to assume responsibility for the  
617 preservation of historic properties located on or controlled by the respective agency. Each Federal  
618 agency is required to undertake a program to locate, inventory, and nominate to the Secretary of  
619 the Interior all properties owned or under control of the agency that appear to qualify for  
620 inclusion on the Register. Historic properties must be recorded and documented in the event of  
621 their damage or destruction due to any Federal agency activity, including routine demolition as  
622 part of infrastructure development. Each Federal agency is required to designate a qualified  
623 official as a Preservation Officer who will coordinate preservation activities of the agency. Costs  
624 of preservation efforts may be included in the planning efforts of any agency undertaking. Dr.  
625 F.G. "Skip" Gosling is the Chief Historian and Federal Preservation Officer for DOE.

626  
627 Section 112 of NHPA requires that any Federal agency responsible for the protection of historic  
628 properties shall ensure that all actions taken on these properties are done by people meeting  
629 professional standards developed by the Secretary of the Interior. This includes both agency and  
630 contract personnel. All data and records produced through historical research shall be  
631 permanently curated in appropriate databases and will be available for use by researchers. Finally,  
632 this section requires that Federal historic preservation include plans to promote protection and  
633 preservation of historic properties to the public.

634  
635 Section 304 of NHPA allows an agency to withhold from disclosure to the public, information  
636 about the location, character, or ownership of a historic resource if the agency determines that  
637 such disclosure may cause a significant invasion of privacy, risk harm to the historic resource, or  
638 impede the use of a traditional religious site by practitioners.

639  
640 NHPA defines historic properties to include archaeological sites, buildings, structures, districts,  
641 and objects that are prehistoric or historic in age. In the southwestern United States, the break  
642 between prehistory and history occurred in the 16th century when written records were produced  
643 by Spanish explorers. Native American oral traditions also provide historical accounts of earlier  
644 periods. Historic properties ordinarily must be at least 50 years old, but younger properties of  
645 exceptional importance may also be included as cultural resources worthy of consideration for  
646 Register eligibility under NHPA.

647 Traditional cultural properties (TCPs) are a particular class of cultural resource, specifically  
648 recognized as such in the 1992 amendments to NHPA. TCPs are places of special heritage value  
649 to contemporary communities because of their association with the cultural practices or beliefs  
650 that are rooted in the histories of those communities. These resources are important in  
651 maintaining the community's cultural identity and are not limited by age or universal  
652 understanding. Sections 101(d)(6) and 101(d)(6)(B) state that properties of traditional religious  
653 and cultural importance to a Native American may be determined to be eligible for inclusion to  
654 the Register. Further, it directs Federal agencies, while carrying out their responsibilities under  
655 Section 106, to consult with any Native American group that attaches religious and cultural  
656 significance to properties that may be affected by a Federal undertaking.

657 In response to the 1992 NHPA amendments, a new policy statement, *Consultation with Native*  
658 *Americans Concerning Properties of Traditional Religious Cultural Importance*, was adopted by  
659 the ACHP on June 11, 1993. The policy contains guidelines for application of the amendments. In  
660 particular, the policy recommends that consultation efforts with Native American groups and  
661 other ethnic groups with traditional cultural values be identified using "culturally appropriate  
662 methods" and that participants in the Section 106 process learn how to approach Native  
663 Americans and others in "culturally informed ways" (ACHP 1993). Consultation with Native  
664 Americans must be conducted with sensitivity to cultural values, socioeconomic factors, and the

665 administrative structure of the group. Specific steps are to be taken to address language  
666 differences and issues such as seasonal availability or lack thereof on the part of necessary  
667 participants. The ACHP's policy statement reaffirms the Federal government's commitment to  
668 maintaining confidentiality regarding cultural resources and states that participants in the Section  
669 106 process "should seek only the information necessary for planning in a manner that respects  
670 the Native American groups need for confidentiality" (ACHP 1993).

### 671 **National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)**

672 The National Environmental Policy Act (NEPA) establishes a national policy that encourages  
673 harmony between humans and the environment. This policy states that the Federal Government  
674 shall use all practicable means to preserve the productive harmony of the environment while  
675 fulfilling social, economic, and other requirements of generations of Americans. Included in  
676 preserving the environment is the preservation of important historic and cultural aspects of  
677 national heritage. The aim of the Act is to have full disclosure of the decision-making process.  
678

679 NEPA requires all Federal agencies to prepare a statement that assesses the impact of any  
680 proposed action on the environment, including any unavoidable adverse environmental effects,  
681 and alternatives to the proposed action prior to implementation of the proposed action. This  
682 statement shall be prepared as early in the planning process as possible and shall accompany the  
683 action's proposal through the agency review process, ensuring that environmental concerns are  
684 addressed in the decision-making process.  
685

686 Implementing regulations issued by the Council on Environmental Quality are codified at 40 CFR  
687 1500-1508. DOE has published counterpart regulations that are codified at 10 CFR 1021 and in  
688 DOE Order 451.1A, National Environmental Policy Act Compliance Program. These regulations  
689 encourage combining NEPA compliance with other regulatory requirements such as those of the  
690 NHPA, American Indian Religious Freedom Act of 1978 (AIRFA), and Native American Graves  
691 Protection and Repatriation Act of 1990 (NAGPRA) (discussed above and below).

### 692 **American Indian Religious Freedom Act of 1978 (42 USC 1996)**

693 The AIRFA reiterates the First Amendment recognition of religious freedom for the peoples of  
694 the United States. Specifically, it refers to the inherent right of indigenous peoples to believe,  
695 express, and exercise their traditional religions, including but not limited to access to religious  
696 sites, use and possession of sacred objects, and freedom to worship through ceremonial and  
697 traditional rites.  
698

699 Federal departments, agencies, and other instrumentalities are directed to evaluate their policies  
700 and procedures in consultation with native traditional religious leaders to determine appropriate  
701 changes necessary to protect and preserve Native American religious cultural rights and practices.  
702 LANL tries to plan activities so that they do not disrupt or adversely affect the practice of  
703 traditional religions. Tribal groups receive advance notification of major construction activities  
704 and are requested to inform DOE/NNSA if these activities would affect a TCP. We also provide  
705 access to resource collection areas for ceremonial activities and hunting.

### 706 **Archaeological Resources Protection Act of 1979, as amended (16 USC** 707 **470aa et seq.)**

708 The Archaeological Resources Protection Act (ARPA) establishes that archaeological resources  
709 on public and Indian lands, which are threatened by unauthorized excavation and looting, are a  
710 part of the Nation's heritage and should be preserved for the benefit of the American people. The

711 law encourages cooperation between individuals possessing private artifact collections and the  
712 archaeological community.

713

714 ARPA specifically protects any material remains of past human life of archaeological interest and  
715 at least 100 years old, including pottery, basketry, bottles, weapons, weapon projectiles, tools,  
716 structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves,  
717 human skeletal materials, or any portion or piece of any of the above located on public or Indian  
718 lands of the United States. Public lands include the national park system, national wildlife  
719 refuges, the national forest system, and all other lands the fee title which is held by the United  
720 States—such as LANL. Indian lands refer to lands of Native American tribes or individuals held  
721 in trust by the United States.

722

723 Unauthorized excavation, removal, damage, alteration, defacement, or attempts to injure any  
724 archaeological resource on public or Indian land are prohibited. No one may purchase, sell, or  
725 exchange any archaeological resource derived from public or Indian lands. The law provides  
726 criminal and civil penalties for any violation. One such case occurred in the late 1990s on LANL  
727 lands, and the individual was successfully prosecuted in accordance with ARPA.

728

729 Permits may be obtained from the appropriate Federal agency by qualified individuals who  
730 propose to excavate or remove archaeological resources from Federally owned or controlled land.  
731 The proposed work must be undertaken for the purpose of furthering archaeological knowledge  
732 for the benefit of the public. Archaeological resources recovered are to remain the property of the  
733 United States and must be preserved by a university, museum, or other qualified institution. The  
734 appropriate Federal land manager must contact any Native American tribe that has a cultural or  
735 religious interest in a site proposed to be excavated under permit.

736

737 Federal agencies may not disclose any information pertaining to the location of sites which would  
738 require an excavation or artifact removal permit unless the disclosure would further the purposes  
739 of ARPA or would not create a risk to the condition of archaeological resources on the site. A  
740 Governor of any state may request locational information from Federal agencies who control land  
741 within the Governor's state. Federal agencies must develop plans for surveying lands not  
742 scheduled for specific undertakings and implement a system for recording and reporting  
743 archaeological violations. Federal managers are required to establish a program to increase public  
744 awareness of and the need to protect archaeological resources.

745

746 The Secretary of the Interior is charged through ARPA to encourage cooperation and exchange of  
747 information among individuals who possess archaeological resources collected before the  
748 enactment of the Act, Federal authorities responsible for archaeological resource protection, and  
749 professional archaeologists.

750 ***Native American Graves Protection and Repatriation Act of 1990 (25 USC***  
751 ***3001 et seq.)***

752 The purpose and intent of the NAGPRA is to acknowledge the ownership of certain Native  
753 American human remains, funerary objects, sacred objects, and objects of cultural patrimony by  
754 Native American tribes or organizations, and to treat these remains and objects in a way that is  
755 agreeable to these tribes or organizations.

756

757 The first provision of NAGPRA covers Native American remains or objects discovered on  
758 Federal or tribal lands after the date of enactment of NAGPRA. The Federal land managing  
759 agency must notify Native American tribes or organizations of the discovery, providing them an

760 opportunity to issue a claim of affiliation to the remains or objects. The tribe or organization  
761 determined to have the right of ownership of the remains or objects may then consult with the  
762 agency to determine what action should be taken with the remains or objects. The agency is  
763 responsible for carrying out these determinations.

764  
765 The second provision of NAGPRA covers Native American remains or objects possessed or  
766 controlled by Federal or Federally assisted institutions, curation facilities, or agencies. The  
767 curation facility shall inventory all of these remains and objects and provide these inventories to  
768 Native American tribes or organizations. The tribes or organizations may issue a claim of  
769 affiliation to the remains or objects. The tribe or organization determined to have the right of  
770 ownership of the remains or objects may then consult with the curation facility to determine what  
771 action should be taken to repatriate the remains or objects. The curation facility is responsible for  
772 carrying out these determinations.

773  
774 NAGPRA also makes provisions for the prosecution of those who knowingly sell, purchase, use  
775 for profit, or transport for sale or profit Native American human remains or objects covered in  
776 this Act, whether or not they derive from Federal or Indian lands.

## 777 **Executive Orders and Memoranda**

### 778 ***Executive Memorandum, September 23, 2004***

779 This executive memorandum addresses government-to-government relations with Native  
780 American tribal governments. This complements and partially supersedes the similar executive  
781 memorandum of April 29, 1994. To ensure that the rights of sovereign tribal governments are  
782 fully respected, the memoranda set forth guidelines requiring Federal agencies to operate within a  
783 government-to-government relationship with Federally recognized tribal governments. This  
784 involves consultation with tribal governments before taking actions that affect those governments,  
785 as well as assessing the potential impact of plans, projects, and activities on tribal trust resources.  
786 Tribal government rights and concerns are considered during the development of such programs  
787 and activities by working directly and effectively with tribal governments on activities that affect  
788 trust properties or tribal governmental rights. Federal programs may be designed to provide  
789 unique solutions to address specific needs of tribal communities.

### 790 ***Executive Order 13007, May 24, 1996***

791 EO 13007 concerns Indian Sacred Sites. In order to protect and preserve Indian religious  
792 practices, Federal land managers must accommodate access to and ceremonial use of Indian  
793 Sacred Sites by Indian religious practitioners and avoid adversely affecting the physical integrity  
794 of sacred sites. A “sacred site” as defined in EO 13007 is “any specific, discrete, narrowly defined  
795 delineated location on Federal land that is identified by an Indian tribe, or Indian individual  
796 determined to be an appropriately authoritative representative of an Indian religion, as sacred by  
797 virtue of its established religious significance to, or ceremonial use by, an Indian religion;  
798 provided that the tribe or appropriately authoritative representative of an Indian religion has  
799 informed the agency of the existence of such a site.” Agencies, where appropriate, shall maintain  
800 the confidentiality of sacred sites, and will implement procedures to manage these resources.

### 801 ***Executive Order 13175, November 6, 2000 (superseded EO 13084 of the*** 802 ***same title)***

803 EO 13084 addresses consultation and coordination with Indian tribal governments. This  
804 document states that each Federal agency must establish a process for regular and meaningful

805 consultation and collaboration with Native American tribal governments in the development of  
806 regulatory matters that directly affect their communities. Policies will take into account tribal  
807 self-government, sovereignty, and treaty rights.

### 808 ***Executive Order 13287, March 3, 2003***

809 EO 13287 states as policy that the Federal government is to provide leadership in preserving  
810 America's heritage by actively advancing the protection, enhancement, and contemporary use of  
811 the historic properties (as defined under the NHPA) owned by the Federal government, and by  
812 promoting intergovernmental cooperation and partnerships for the preservation and use of historic  
813 properties.

### 814 **Regulations**

815 There are a number of regulations that help to implement the intent of the legislation described  
816 above. These are largely self-explanatory and will be listed simply by number and title in the  
817 Code of Federal Regulations:

818 36 CFR 60: National Register of Historic Places

819 36 CFR 63: Determination of Eligibility for Inclusion in the National Register of Historic Places

820 36 CFR 65: National Historic Landmarks Program

821 36 CFR 67: The Secretary of the Interior's Standards for Rehabilitation

822 36 CFR 68: The Secretary of the Interior's Standards for the Treatment of Historic Properties

823 36 CFR 78: Waiver of Federal Responsibilities under Section 110 of the National Historic  
824 Preservation Act

825 36 CFR 79: Curation of Federally Owned and Administered Archaeological Collections

826 36 CFR 800: Protection of Historic Properties

827 43 CFR 7: Protection of Archaeological Resources

828 43 CFR 10: Native American Graves Protection and Repatriation Act Regulations

829

### 830 **DOE/NNSA and LANL Policy**

#### 831 ***DOE Order 1230.2, 1992, revised 2000***

832 DOE's *American Indian Tribal Government Policy* provides general guidance for knowledgeable  
833 and sensitive management interactions with Federally recognized Native American tribes. The  
834 guidance recognizes and commits to a government-to-government relationship between DOE and  
835 Native American tribal governments and provides for proactive departmental consultations before  
836 actions or decisions that could affect tribes. It also encourages early communication and  
837 cooperation with other Federal agencies. DOE is required to encourage tribal governments and  
838 their members to participate fully in national and regional dialogues that concern DOE programs  
839 and issues. Each DOE field office with areas of cultural or religious concern must consult with  
840 Native American tribal governments about potential impacts of proposed DOE actions to those  
841 resources, while avoiding unnecessary interference with traditional religious practices.  
842 Consultation may include, but is not limited to 1) the exchange of information concerning the  
843 location and management of cultural resources; 2) repatriation or other disposition of objects and  
844 human remains; 3) access to sacred areas and traditional resources located on DOE lands in  
845 accordance with safety, health, and national security considerations; and 4) assessment of  
846 potential community impacts.

**847 LASO Pueblo Accords, 1992**

848 LASO and LANL have established a special relationship with the Pueblos of San Ildefonso,  
849 Jemez, Cochiti, and Santa Clara that recognizes all four as sovereign entities that can interact with  
850 each other on a government-to-government basis. Governors from each pueblo and the Assistant  
851 Secretary for Defense Programs (on behalf of DOE) signed an accord on behalf of each  
852 government. The accords provide a procedural framework for consultation, as well as committing  
853 to provide information and input in long-term planning and decision making.

**854 LANL Pueblo Cooperative Agreements, 1994–1996**

855 LANL has signed a similar set of agreements similar to the LASO Pueblo Accords that are  
856 referred as the LANL Pueblo Cooperative Agreements. These Pueblos include San Ildefonso,  
857 Jemez, Cochiti, and Santa Clara. The cooperative agreements provide a procedural framework for  
858 consultation, as well as committing to provide information and input in long-term planning and  
859 decision making.

**860 LASO Management Procedure No. E-10, 1999, revised 2004**

861 Management Procedure E-10, issued by LASO, Office of Facility Operations, defines the duties  
862 of the LASO Cultural Resources Compliance Program Manager and establishes the Manager's  
863 relationship with LANL cultural resources personnel assisting LASO with historic preservation  
864 laws compliance.

**865 DOE Policy 141.1, approved May 2, 2001**

866 DOE Policy 141.1 *Department of Energy Management of Cultural Resources*, issued by the DOE  
867 in 2001, is designed to ensure that DOE programs, including the NNSA and field elements (such  
868 as LANL), integrate cultural resources management into their missions and activities. The policy  
869 is also designed to raise the level of awareness and accountability among DOE (including NNSA)  
870 contractors concerning the importance of the Department's cultural resource-related legal and  
871 trust responsibilities.

872  
873 This policy states that preservation and protection of America's cultural heritage are important  
874 functions and responsibilities of the Federal government for properties under its control or  
875 jurisdiction. This policy helps ensure that DOE maintains a program that reflects the spirit and  
876 intent of the legislative mandates.

**877 Standards and Guidelines**

878 The National Park Service has published a number of documents relating to the establishment of  
879 standards and professional guidelines for the conduct of archaeological and historical  
880 preservation programs by Federal agencies. Included among these are "The Secretary of the  
881 Interior's Standards and Guidelines for Archaeology and Historic Preservation." These standards  
882 and guidelines were first published in the Federal Register in 1983 (48 FR 44716) and have since  
883 been slightly modified and amended.

884  
885 To the extent practicable, the conduct of archaeology and historic preservation at LANL will  
886 adhere to these standards and guidelines. A current list of LANL cultural resources staff members  
887 conducting archaeological and historic preservation activities at LANL, along with a brief  
888 description of their experience and qualifications, is maintained by LANL and by the LASO  
889 cultural resources program manager.

### 890 **Section 3. Glossary of Cultural Resources Acronyms and Terms**

891	<b>ACHP</b>	The Advisory Council on Historic Preservation is an independent Federal
892		agency with statutory authority to review and comment on Federal actions
893		affecting properties listed in or eligible for the National Register of Historic
894		Places, to advise the President and the Congress on historic preservation
895		matters, and to recommend measures to coordinate activities of Federal, state,
896		and local agencies. Its members include Cabinet-level representatives from
897		Federal agencies and presidential appointees from outside the Federal
898		government.
899	<b>Accord</b>	In 1992, a set of agreement documents were signed between LASO and the
900	<b>Pueblos</b>	Pueblos of Cochiti, Jemez, San Ildefonso, and Santa Clara. These four Pueblos
901		are often referred to as the Accord Pueblos. Between 1994 and 1996 a similar
902		set of cooperative agreements were signed between LANL and these four
903		Pueblos. The purpose of these agreements is for increasing communication and
904		dialog between LANL and its Pueblo neighbors.
905	<b>AIRFA</b>	American Indian Religious Freedom Act.
906	<b>APE</b>	Area of potential effect, a term that refers to the sum total of all locations that
907		could be impacted by project construction or other planned undertakings or
908		activities.
909	<b>ARPA</b>	Archaeological Resources Protection Act.
910	<b>Archaeological</b>	Any material remains of past human life or activities which are of archaeological
911	<b>Resources</b>	interest, including (but not limited to) pottery, basketry, bottles, weapons,
912		weapon projectiles, jewelry, tools and the chipped stone debris from tool
913		manufacture, structures or portions of structures, pit houses, rubble mounds,
914		rock paintings, rock carvings, intaglios, graves and grave associations, human
915		skeletal materials, or any portion or piece of any of these items. The term also
916		applies to agricultural sites and residue, resource collection sites and residue,
917		and other materials that can provide information about past human lifeways.
918		Under the guidelines of the ARPA these items must be at least 100 years in age.
919	<b>CFR</b>	Code of Federal Regulations.
920	<b>CRMP</b>	LANL Cultural Resources Management Plan (referred to in this document as
921		“the LANL Plan”).
922	<b>Cultural</b>	A term referring to the cumulative set of historical properties and values of
923	<b>Heritage</b>	specific cultural groups.
924	<b>Cultural</b>	Cultural resources include “historic properties” as defined in the NHPA
925	<b>Resources</b>	“archaeological resources” as defined in the ARPA, and “cultural items” as
926		defined in the NAGPRA.
927	<b>Cultural</b>	The Cultural Resources Team, part of ENV-ECO, assists LASO with
928	<b>Resources</b>	compliance with historic preservation laws and implementation of the LANL
929	<b>Team</b>	Plan.
930	<b>DOE/NNSA</b>	Department of Energy, National Nuclear Security Administration.
931	<b>ENV-ECO</b>	Ecology Group at LANL, charged with assisting LASO and LANL with
932		compliance and related actions concerning biological, cultural, and
933		environmental planning issues at LANL.

934	<b>ENV</b>	Environmental Stewardship Division at LANL.
935	<b>Excavation</b>	Part of the general environmental project review process at LANL in which proposed ground-disturbing activities are evaluated for potential impacts to the environment, including historic properties, as part of the Section 106 review process.
936	<b>Permit</b>	
937		
938		
939	<b>Flotation</b>	Sediment (soil) collected from an archaeological field context during testing or data recovery. It is processed in one or more water baths to separate plant specimens (light fraction) from animal bones, artifacts, and other materials (heavy fraction) for ease of subsequent analysis and identification.
940	<b>Sample</b>	
941		
942		
943	<b>HABS</b>	Historic American Building Survey, a standardized system of records and record keeping for documenting historic buildings.
944		
945	<b>HAER</b>	Historic American Engineering Record, a standardized system of records and record keeping that produces graphic and written documentation of historically significant architectural, engineering, and industrial sites and structures.
946		
947		
948	<b>Heritage</b>	See “Cultural Heritage.” Heritage Resources is an alternate term applied to cultural resources by some agencies.
949	<b>Resources</b>	
950	<b>Historic</b>	These are defined as prehistoric (before the arrival of Europeans) or historic districts, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places. The term includes artifacts, records, and remains that are related to and located in such properties.
951	<b>Properties</b>	
952		
953		
954	<b>Historic</b>	A building or other structure constructed after AD 1890, including both homestead structures and Laboratory-era buildings and structures that have been evaluated for eligibility.
955	<b>Structure</b>	
956		
957	<b>IWD</b>	Integrated work document. A product of the LANL Integrated Work Process system designed to ensure that construction and maintenance activities are carried out in a safe, transparent, and efficient manner.
958		
959		
960	<b>LASO</b>	Los Alamos Site Office, the local DOE/NNSA organization charged with direct oversight of LANL operations and LANL compliance with Federal historic preservation laws and with DOE cultural resources policy.
961		
962		
963	<b>LANL</b>	Los Alamos National Laboratory, including all lands and facilities owned and operated on behalf of DOE/NNSA at Los Alamos.
964		
965	<b>MAP</b>	Mitigation Action Plan, a plan for mitigating impacts to cultural resources as an outcome of the preparation of documents in compliance with the NEPA.
966		
967	<b>MOU/MOA</b>	Memorandum of Understanding/Memorandum of Agreement. A legal agreement prepared between two Federal agencies or a Federal agency and other entity (e.g., state or county government, Native American tribe) that specifies various actions and responsibilities on the part of each signatory party, typically for a single specific project for a specific period of time.
968		
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972	<b>National</b>	The Nation’s master inventory of known historic properties worthy of preservation. The Register is administered by the National Parks Service on behalf of the Secretary of the Interior. Included are buildings, structures, sites, objects, and districts that possess historic architectural, engineering, archeological, or cultural significance at the national, state, or local level.
973	<b>Register of</b>	
974	<b>Historic Places</b>	
975		
976		
977	<b>NAGPRA</b>	Native American Graves Protection and Repatriation Act.

978	<b>National Historic Landmark</b>	This is a special category of landmark designated by the Secretary of the Interior because of its national importance in American history, architecture, archaeology, engineering, or culture.
979		
980		
981	<b>NCO</b>	NEPA Compliance Officer, the LASO official responsible for oversight of
982		LANL compliance with the NEPA.
983	<b>NEPA</b>	National Environmental Policy Act.
984	<b>NHPA</b>	National Historic Preservation Act.
985	<b>OUO</b>	Official Use Only, a designation placed on many LANL cultural resources
986		
987		
988	<b>PA</b>	Programmatic Agreement. A legal agreement prepared between two or more Federal agencies or a Federal agency and other entities (e.g., state or county government, Native American tribe) that specifies various programmatic actions and responsibilities on the part of each signatory party, and which is typically subject to periodic review and update. The “April 2000 PA” specifically refers to the programmatic agreement prepared in April 2000 between LASO and the SHPO, and also signed by the ACHP that streamlined the management of historic properties at LANL and led to the creation of the present Plan.
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995		
996	<b>PL</b>	Public Law.
997	<b>Plan</b>	Cultural Resources Management Plan for LANL.
998	<b>PR-ID</b>	Permit Requirements Identification Process. This is an electronic system that facilitates the environmental, health, and safety review of proposed construction, remodeling, demolition, and maintenance activities at LANL. Cultural resources reviews through the PR-ID system must meet the standards of the Federal Section 106 review process of the NHPA.
999		
1000		
1001		
1002		
1003	<b>Register</b>	National Register of Historic Places (Register), a register of nationally significant historic properties authorized by the NHPA.
1004		
1005	<b>RRES</b>	Risk Reduction and Environmental Stewardship, the former name for the present ENV Division.
1006		
1007	<b>Section 106</b>	A review process established under Section 106 of the NHPA and administered by the ACHP under its regulations at 36 CFR 800.
1008		
1009	<b>Section 110</b>	Section 110 sets out the broad historic preservation responsibilities of Federal agencies and is intended to ensure that historic preservation is fully integrated into the ongoing programs of all Federal agencies. It makes explicit the Federal agency’s responsibility for identifying and protecting historic properties and avoiding unnecessary damage to them.
1010		
1011		
1012		
1013		
1014	<b>SHPO</b>	The State Historic Preservation Officer, specifically that for the State of New Mexico, a regulator created by the NHPA and responsible for review and concurrence with agency undertakings under Section 106 of NHPA.
1015		
1016		
1017	<b>Sacred Site</b>	Location of religious significance or ceremonial use by Native American religious practitioners and made known to the administering Federal agency by an appropriately authoritative representative of a Native American religion.
1018		
1019		
1020	<b>SWEIS</b>	Site-Wide Environmental Impact Statement for LANL Operations.

1021	<b>TA</b>	Technical Area (at LANL).
1022	<b>TCP</b>	A traditional cultural property (or place), as established by the NHPA, is
1023		defined as a place of special heritage value to contemporary communities
1024		(often, but not necessarily, Native American groups) because of their
1025		association with the cultural practices or beliefs that are rooted in the histories
1026		of those communities and are important in maintaining the cultural identity of
1027		the communities.
1028	<b>Tuff</b>	Welded (consolidated and chemically bonded) volcanic ash from ancient
1029		pyroclastic flows (see Section 4).
1030	<b>USC</b>	United States Code.

#### 1031 **Section 4. LANL Physical and Environmental Setting**

1032 The Jemez Mountains are located at the intersection of three major physiographic provinces: the  
 1033 southern Rocky Mountains, the Colorado Plateau, and the Rio Grande rift valley. The Valles  
 1034 Caldera is the dominant feature of the Jemez Volcanic Field, active during the past approximately  
 1035 16 million years, and responsible for the immense quantities of rhyolitic ash that now cap the  
 1036 plateaus and mesas sloping outward from the caldera edge. Volcanic activity is also responsible  
 1037 for the basalt and other igneous materials, including obsidian outcrops located in the Valles  
 1038 Caldera vicinity.

1039  
 1040 Elevations range from 1676 meters (5500 feet) along the Rio Grande valley to over 3050 meters  
 1041 (10,000 feet) in the Sierra de los Valles and the Valles Caldera. The average growing season is  
 1042 from 120 to 160 days, with annual precipitation averaging from between 300 to 450 millimeters  
 1043 (12 to 18 inches). Moisture comes in the form of winter snows and summer monsoonal rainfall.  
 1044 Maximum summer temperatures at LANL average between 90 and 100°F, with minimum winter  
 1045 temperatures averaging between 15 and 25°F.

1046  
 1047 The Pajarito Plateau consists of a series of narrow mesas and deep canyons (Figure 4.1) that trend  
 1048 east-southeast from the Jemez Mountains to the Rio Grande Valley. The defining feature of the  
 1049 Plateau is that of the Tshirege Member of the Bandelier Tuff, a massive series of ignimbrites, or  
 1050 “ash-flow tuffs,” that are the result of a series of large eruptions from the Valles and Toledo  
 1051 calderas, about 1.6 and 1.2 million years ago, respectively.

1052  
 1053 Mesa orientation, solar radiation, and differences in soils and moisture levels contribute to the  
 1054 presence of highly varied ecotones found throughout the Pajarito Plateau. The elevation gradient  
 1055 and the corresponding variable climatic conditions are reflected by the presence of five major  
 1056 vegetation types. These major types are defined by their dominant tree species and by their  
 1057 structural characteristics. These types are juniper savannas, piñon-juniper woodlands, ponderosa  
 1058 pine forests, mixed conifer forests, and spruce-fir forests.

1059  
 1060 Within these five general vegetation types, there are several specific vegetation communities,  
 1061 which are not primarily influenced by elevation or climatic gradients. These communities are the  
 1062 aspen forests, grasslands, scrublands, floodplains, open water, and nonvegetated lands. These  
 1063 communities are influenced by a variety of topographic features, including soils, geologic  
 1064 structures, and moisture conditions.

1065  
 1066 Ponderosa pine forests extend to as low as 1890 meters (6200 feet) in some of the topographically  
 1067 protected canyons such as Ancho and Water. In more open canyons, like Sandia and Los Alamos,



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**Figure 4.1. Aerial view of part of the mesas and canyons of the Pajarito Plateau.**

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ponderosa pine is not normally found below 1921 meters (6300 feet). On the mesa tops and the lower slopes of the Sierra de los Valles, ponderosa pine forests extend to 2378 meters (7800 feet) in elevation. The ponderosa pine is the only overstory species found throughout most of the higher elevation range. However, at lower elevations juniper is also present, and at higher elevations an occasional Douglas fir may be found. The understory characteristic of this community commonly consists of kinnikinnik, Colorado barberry, and Gambel's oak with numerous species of herbs and grasses in the forb layer.

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Mixed conifer forests appear at higher elevations in the mountains and consist of trees that are at least 5 meters (16 feet) tall. Douglas fir, also known as white fir, is the dominant overstory species, although other tree species may also be present in the overstory or mid-story. On north aspects of canyons and on the canyon bottoms above 2104 meters (6900 feet), the mixed conifer forest intergrades with ponderosa pine communities. In flat areas or on eastern exposures, the mixed conifer forest extends to 2591 meters (8500 feet). In protected drainage bottoms and on southern exposures, mixed conifer forests extend to 2744 meters (9000 feet). Some limber pine may be present sporadically. The understory may consist of several shrubs, including ninebark, wild rose, cliff bush, and dwarf juniper with numerous species of herbs and grasses. The average annual precipitation ranges from 51 to 76 centimeters (20 to 30 inches).

There is an obvious relationship between the ecological and topographic characteristics of the area, these relationships impact the kinds of species inhabiting various areas of the Laboratory.

1091 The following is a sampling of these species. Coyote, rattlesnake, bobcat, gray fox, red-tailed  
 1092 hawk, spiny lizard, mule deer, deer mouse, and desert cottontail are found in the lower elevation  
 1093 zone (1700 to 2000 meters; 5610 to 6600 feet). In the middle elevation zone (2000 to 2400  
 1094 meters; 6600 to 7920 feet), particularly in the canyons, coyote, raccoon, mountain lion, American  
 1095 black bear, turkey vulture, American kestrel, golden eagle, gopher snake, rock squirrel, and mule  
 1096 deer can be found. In the same elevation zone (2000 to 2400 meters; 6600 to 7920 feet) on the  
 1097 mesa tops are the American black bear, mountain lion, common raven, pygmy nuthatch, Colorado  
 1098 chipmunk, pine squirrel, and mule deer. The upper elevations (2400 to 3200 meters; 7920 to  
 1099 10,560 feet) are inhabited by the American black bear, mountain lion, green-tailed towhee, hairy  
 1100 woodpecker, Rocky Mountain elk, mule deer, western bluebird, and gray-headed junco.

## 1101 **Section 5. A Brief Summary of Pajarito Plateau Culture History**

1102 Occupation and use of the Pajarito Plateau began as early as 10,000 BC, as foraging groups used  
 1103 the area for gathering and hunting large game animals. The chronological sequence associated  
 1104 with the culture history for the northern Rio Grande was first developed by archaeologists in the  
 1105 1950s and has been periodically updated and revised since. Table 1 depicts the sequence as  
 1106 currently understood for the central portion of the Pajarito Plateau where LANL is situated.  
 1107

1108 **Table 1. Culture History Chronology for Northern Rio Grande Specific to LANL/  
 1109 Pajarito Plateau**

Culture	Period	Dates
Paleoindian	Clovis	9500 to 9000 BC
	Folsom	9000 to 8000 BC
	Late Paleoindian	8000 to 5500 BC
Archaic	Jay	5500 to 4800 BC
	Bajada	4800 to 3200 BC
	San Jose	3200 to 1800 BC
	Armijo	1800 to 800 BC
	En Medio	800 BC to AD 400
	Trujillo	AD 400 to 600
Ancestral Pueblo	Early Developmental	AD 600 to 900
	Late Developmental	AD 900 to 1150
	Coalition	AD 1150 to 1325
	Classic	AD 1325 to 1600
Native American, Hispanic, and Euro-American	Early Historic Pajarito Plateau	AD 1600 to 1890
	Homestead	AD 1890 to 1943
Federal Scientific Laboratory	Manhattan Project	AD 1942 to 1946
	Cold War (Early Cold War)	AD 1946 to 1990 (AD 1946–1956)

### 1110 **Paleoindian Period: 9500 BC to 5500 BC**

1111 During this early time period, small groups of highly mobile Paleoindian hunter-gatherer  
 1112 populations may have followed bison herds up and down the Rio Grande, making frequent trips  
 1113 onto the Pajarito Plateau where they were able to procure obsidian and a variety of subsistence  
 1114 resources. Jemez obsidian has been found at Paleoindian sites in northern Colorado. The time  
 1115 period is represented at LANL and elsewhere on the Pajarito Plateau by isolated projectile points.  
 1116

**1117 Archaic Period: 5500 BC to AD 600**

1118 Archaic hunter-gatherer groups relied on a wide variety of small game and plant species, while  
1119 hunting primarily with the spear and atlatl. The piñon-juniper woodlands on LANL land contain  
1120 evidence of the temporary campsites left behind by these groups as they moved across the  
1121 landscape (Figure 5.1a). Remains representing these campsites are in the form of lithic scatters  
1122 (Figure 5.1b), consisting of obsidian tools, chipping debris, and diagnostic projectile points.  
1123 These sites presumably reflect the seasonal use of upland settings during summer and fall months  
1124 for pine nut collecting, hunting, and lithic procurement activities. During the last 1500 years of  
1125 the sequence, cultigens (such as maize) slowly became the dominant food resource.

**1126 Developmental Period: AD 600 to 1150**

1127 Along the northern Rio Grande, maize horticulturists lived first in semi-subterranean pit  
1128 structures and then in adobe surface structures. They began to make painted pottery with simple  
1129 designs and continued to pursue hunting and gathering relying on the bow and arrow. Most  
1130 habitation sites dating to this time period are located at lower elevations near the Rio Grande, and  
1131 the Pajarito Plateau presumably was used on a seasonal basis. However, hunter-gatherer groups  
1132 may have also continued to use these upland resource areas. The general lack of recorded  
1133 Developmental period sites at LANL and elsewhere on the Pajarito Plateau may be indicative of a  
1134 depopulation of the Plateau at this time. The Developmental period is generally thought by  
1135 archaeologists to represent the earliest demonstrable link with modern Pueblo populations. This  
1136 begins what used to be called the “Anasazi” culture, but is now more properly termed Ancestral  
1137 Pueblo culture.

**1138 Coalition Period: AD 1150 to 1325**

1139 During the Coalition period there was a substantial increase in the number, size, and distribution  
1140 of above-ground habitation sites, with year-round settlements expanding into upland areas  
1141 throughout the Pajarito Plateau. A long-term process of site aggregation begins at this time, with  
1142 early sites containing adobe and masonry rectangular structures with 10 to 20 rooms (Figures 5.2a  
1143 and 5.2b). The remains of these sites are present in the hundreds of small mounds of shaped tuff  
1144 blocks and dense artifact scatters commonly found throughout LANL. In contrast, later sites of  
1145 this period consist of large masonry plaza pueblos that contain more than 100 rooms. A total of  
1146 31 of these large plaza pueblos have been identified at LANL. The construction of agricultural  
1147 features associated with these sites, including terraces, gravel mulch gardens, and dams, suggests  
1148 an even greater reliance on horticulture than previously evidenced in the region. Cavate  
1149 structures, rooms dug into the compacted volcanic tuff cliffs, likely make their first appearance on  
1150 the Plateau towards the end of the Coalition period. The increase in Coalition period site density  
1151 is attributed both to population migration and local population growth.

**1152 Classic Period: AD 1325 to 1600**

1153 The Classic period is characterized by intensive maize agriculture. Ancestral Pueblo settlements  
1154 on the Pajarito Plateau became increasingly aggregated into three large population clusters with  
1155 sizeable numbers of associated outlying fieldhouses and farmsteads. The central site cluster  
1156 consists of four temporally overlapping sites: Tsankawi (Bandelier National Monument), Tsirege  
1157 (LANL), Navawi (San Ildefonso Reservation), and Otowi pueblos. The Otowi pueblos were  
1158 transferred by LANL to the Pueblo of San Ildefonso in 2003. The initial occupation of these four  
1159 pueblos may have occurred during the 14th century, with Navawi and Otowi continuing with  
1160 Tsirege and Tsankawi into the early portion of the 16th century. Oral traditions from the  
1161 contemporary Pueblo of San Ildefonso indicate that Tsankawi was the last of the Pajarito Plateau



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1164

**Figure 5.1a. Artist rendering of Archaic period campsite.  
(Courtesy of Cory Dangerfield)**



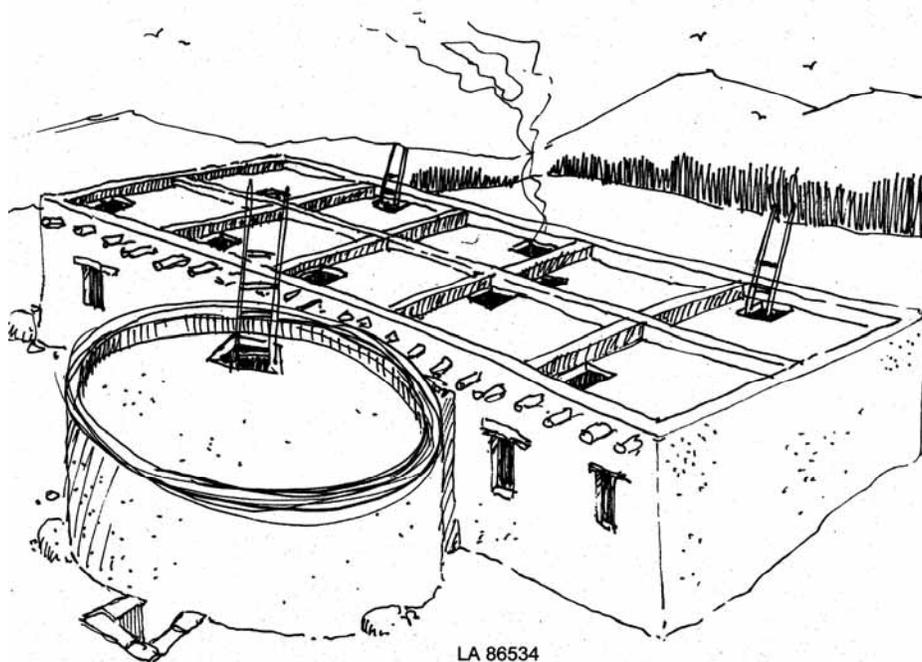
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**Figure 5.1b. Typical lithic scatter representing the Archaic period.  
(Pin flags indicate the location of individual artifacts.)**



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**Figure 5.2a. Coalition period habitation site.**



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**Figure 5.2b. Artist reconstruction of the site depicted in Figure 5.2a (Dave Brewer).**

1174 pueblos to be abandoned. This central group of four Classic period communities is ancestral to  
1175 the Tewa speakers of the Pueblo of San Ildefonso. Tsirege, one of the largest of the Classic period  
1176 pueblos, is also noted for its associated impressive cavate structures and rock art images (see  
1177 Section 15).

### 1178 **Early Historic Pajarito Plateau Period: AD 1600 to 1890**

1179 Due to a series of droughts, the Pajarito Plateau was eventually abandoned as a year-round  
1180 residential area during the mid-1500s. At this time, new pueblos were constructed and occupied  
1181 along the Rio Grande Valley. Although the historic period in northern New Mexico begins with  
1182 Coronado's exploratory expedition up the Rio Grande, most researchers date the period beginning

1183 in AD 1600. This date corresponds with Juan de Oñate's settlement in New Mexico and  
1184 imposition of the Spanish land grant ranch system into Rio Grande communities. In 1680, the  
1185 Pueblo Indians revolted against the Spanish. At this time, several Ancestral Pueblo sites situated  
1186 on the topographically isolated and elevated Pajarito Plateau (including LANL) were reoccupied,  
1187 as they offered natural protection and defense for groups of refugees. With the conquest and  
1188 resettlement of this area by de Vargas (1693 to 1696), the economic and settlement systems of the  
1189 pueblos were completely overhauled and revamped. The large mission communities,  
1190 characteristic of the earlier time period, disappeared, as did the large ranches. Instead, lands were  
1191 granted to dozens of Hispanic families and other individuals who had worked the lands during  
1192 previous years. Only one site dating to this time period, a Pueblo revolt refuge in a late Coalition  
1193 period plaza pueblo, has thus far been identified at LANL.  
1194

1195 Athabaskan groups from northern and western areas have occupied or utilized portions of  
1196 northwestern New Mexico since the 15th century (Figure 5.3a); however, evidence for Navajos  
1197 and Jicarilla Apaches in the northern Rio Grande begins with the Spanish Colonial period. The  
1198 Navajo and Jicarilla made periodic visits to the Rio Grande Valley and Jemez Mountains for  
1199 seasonal hunting and gathering trips, with the Navajo also conducting periodic raiding of the  
1200 Pueblos. The only definable Athabaskan archaeological sites at LANL, a few stone tepee rings on  
1201 lands being transferred to the County of Los Alamos in Rendija Canyon (Figure 5.3b), appear to  
1202 relate to the Jicarilla and date to the last half of the 19th century.  
1203

1204 Mexico declared independence from Spain in 1821, which brought about a more lenient land  
1205 grant policy and an expansion of existing trade networks. Trade between Missouri and Santa Fe  
1206 along the Santa Fe Trail began soon after independence and dominated many of the events in the  
1207 area for the next quarter-century. Increased trade brought many comparatively inexpensive Euro-  
1208 American goods into the northern Rio Grande region, a fact that is reflected in the increase of  
1209 manufactured items identified at sites dating to this period. No sites dating specifically to this  
1210 time period have been identified at LANL.  
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**Figure 5.3a. Athabaskan campsite.**



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**Figure 5.3b. Teepee ring suggesting Athabaskan occupation.**

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The lands that eventually came to be New Mexico remained a part of Mexico until the United States–Mexican war began in the mid-1800s. Troops led by Colonel Stephen W. Kearny raised the American flag in Santa Fe and took possession of these lands for the United States on August 18, 1846. Grazing and seasonal use of the Pajarito Plateau by non-Indians were common during the early Historic period, and the first homesteads were established on the Plateau during the early 1880s. New Mexico was provided with a territorial government in 1850, and it remained a territory until being granted statehood in 1912.

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### **Homestead Period: 1890 to 1943**

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During the early 1900s, New Mexico saw a continuation of traditional farming strategies, cattle grazing, timbering, and a wide variety of cultural practices. However, large-scale sheepherding, timber, and mining activities during this period displaced some Hispanic communities. Seasonal homesteading continued to be prevalent on the Plateau. Wooden cabins, corral structures, and rock or concrete cisterns characterize Hispanic and Anglo Homestead Era sites (Figure 5.4a). Many of the wooden structures burned during the May 2000 Cerro Grande fire (Figure 5.4b). Artifact scatters, consisting of historic debris associated with household and farming/grazing activities, are also commonly found at this time period. Much of the evidence for homesteading at

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LANL dates between 1912 and 1943, likely a reflection of changes relating to both the Enlarged Homestead Act of 1909 and the Grazing Homestead Act of 1916. The period of 1890 to 1943 is typically referred to as the Homestead period at LANL. Most of the central Pajarito Plateau homestead patents were filed by Hispanic peoples who maintained permanent homes in the Rio Grande Valley, using the Pajarito Plateau sites for seasonal farming and resource gathering. Notable exceptions to this pattern included the establishment of a few permanent Anglo commercial concerns such as the Anchor Ranch and the creation of the Los Alamos Ranch School, the latter of which was in operation from 1918 until the late spring of 1943. The end of the Homestead period coincides with the appropriation of lands on the Pajarito Plateau for the Manhattan Project in 1942–1943.



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**Figure 5.4a. Homestead Era habitation on LANL land.**



1245  
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**Figure 5.4b. Homestead depicted in Figure 5.4a after the Cerro Grande fire.**

1247 **Manhattan Project Period: 1942 to 1946**

1248 In 1942, Franklin D. Roosevelt gave his approval for the development of the world's first atomic  
1249 bomb. The geographic and topographic isolation of the Pajarito Plateau that had been a benefit to  
1250 Ancestral Pueblo peoples during the Pueblo Revolt was attractive to project developers, and Los  
1251 Alamos, New Mexico, was selected as the site for design and construction of the atomic bomb.  
1252 Manhattan Project (code-named "Project Y") activities at Los Alamos officially began with the  
1253 closure of the Los Alamos Ranch School after the end of the graduating class of 1943, which had

1254 an accelerated graduation in February. At the same time, additional lands were secured from  
1255 government agencies, such as the Forest Service, and from the predominantly Hispanic  
1256 homesteaders. Construction of Project Y began at the Los Alamos site in 1943 (Figure 5.5). The  
1257 atomic age was ushered in with the detonation of the first atomic device at the Trinity test site in  
1258 southern New Mexico on July 16, 1945. The detonation of the Los Alamos “Little Boy” design  
1259 rapidly followed. On August 6, 1945, this device was detonated over the Japanese city of  
1260 Hiroshima. The subsequent detonation of the “Fat Man” device over Nagasaki on August 9, 1945,  
1261 led to the official surrender of Japan on August 14, 1945. During the period between the  
1262 surrender of Japan and the middle of 1946, Project Y was downsized, with many Los Alamos  
1263 scientists returning to their pre-Manhattan Project academic jobs. The primary mission of the  
1264 Laboratory at that point became that of stockpiling and developing additional atomic weapons.  
1265 The Manhattan Project officially came to an end at Los Alamos with the beginning of the  
1266 atmospheric testing program in the Pacific and the development of the civilian United States  
1267 Atomic Energy Commission (AEC). The AEC officially took over the operation of the Los  
1268 Alamos site in 1947.  
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1271 **Figure 5.5. Remains of wooden protective cover used to shelter Manhattan Project**  
1272 **bomb casings at the end of World War II.**

### 1273 **Cold War Period: 1946 to 1990**

1274 The Cold War lasted from 1946 until approximately 1990. At LANL, the Cold War can be  
1275 divided into at least two components, an early Cold War period lasting between 1946 and 1956,  
1276 and the remainder of the Cold War from 1957 until 1990.

#### 1277 ***Early Cold War: 1946 to 1956***

1278 The AEC made a commitment to retain Los Alamos as a permanent weapons facility. Research at  
1279 the Laboratory during the period of 1946 to 1956 focused on the development of thermonuclear  
1280 weapons. The simmering Cold War came to a full boil in late 1949 with the successful test of

1281 “Joe I,” the Soviet Union’s first atomic bomb. In January of 1950, President Truman approved the  
1282 development of the hydrogen bomb; Truman’s decision led to the remobilization of the country’s  
1283 weapons laboratories and production plants. In 1952, the first completely thermonuclear device,  
1284 “Mike,” was detonated at Enewetak (Eniwetok) atoll in the Pacific. Other key research themes at  
1285 Los Alamos during the Manhattan Project/early Cold War period included supercomputing,  
1286 biomedical and health physics research, explosives research and development, early reactor  
1287 technology, pioneering physics research, and the development of high-speed photography.

### 1288 ***Post-1956 Cold War***

1289 The early Cold War period at Los Alamos ended around 1956, a date that marked the completion  
1290 of all fundamental nuclear weapons design at the Laboratory. In 1957, the gates into the Los  
1291 Alamos town site came down, thus ending the 14-year status of Los Alamos as a closed facility.  
1292 The late Cold War era saw Los Alamos’s continued support of the atmospheric testing programs  
1293 in the Pacific and at the Nevada Test Site (NTS). In 1957, the first of many underground tests at  
1294 NTS was conducted. In 1958, first the Soviet Union and then the United States and Britain  
1295 suspended atmospheric testing. The tensions of the Cold War were exacerbated in 1961 by the  
1296 sealing of the border between East and West Germany in preparation for the construction of the  
1297 Berlin Wall and by the Cuban missile crisis in October 1962. In 1963, Britain, the Soviet Union,  
1298 and the United States signed the Limited Test Ban Treaty, agreeing to outlaw tests in the  
1299 atmosphere, under water, and in outer space. The United States formally engaged in the Vietnam  
1300 War in 1965, a conflict lasting until the cease-fire and political settlement of 1973. In 1972, the  
1301 Strategic Arms Limitation Talks I and II (SALT I and SALT II) resulted in a five-year treaty  
1302 designed to limit the development of antiballistic missiles, and freezing in place the numbers of  
1303 intercontinental ballistic missiles and submarine-launched ballistic missiles. In 1976, the United  
1304 States and Soviet Union signed a peaceful nuclear explosions treaty limiting the size and nature  
1305 of underground nuclear tests. The SALT II treaty was signed in early 1979 by the United States  
1306 and the Soviet Union to limit long-range missiles and bombers, however, late that year President  
1307 Carter called for a major military build-up to counter Soviet military power. In 1980, President  
1308 Carter signed Presidential Directive 59 calling for capacity to wage limited and protracted nuclear  
1309 war. During the 1980s, various renditions of the United States Strategic Arms Reduction Treaty  
1310 (START) were proposed. In 1983, President Reagan proposed the Strategic Defense Initiative,  
1311 popularly known as the Star Wars Defense. The Cold War can be considered as coming to its end  
1312 around 1990. This period began with the 1989 opening of the borders between East and West  
1313 Germany and the subsequent tearing down of the Berlin Wall. It ended with the 1991 creation of  
1314 the Commonwealth of Independent States in the former Soviet Union and the signing of the  
1315 START that began the process of reducing the size of strategic nuclear arsenals in Russia and the  
1316 United States. Many significant historical events occurred over the four decades of the late Cold  
1317 War period, including important research at Los Alamos. Defense mission undertakings during  
1318 this time included treaty and test ban verification programs (such as using satellite sensors to  
1319 detect nuclear explosions), research and development of space-based weapons, and continued  
1320 involvement with stockpile stewardship issues. Nonweapons undertakings supported nuclear  
1321 medicine, genetic studies, National Aeronautics and Space Administration collaborations,  
1322 superconducting research, contained fusion reaction research, and other types of energy research.

### 1323 **Notable Historic Resources in the Vicinity of LANL**

1324 Neighboring Bandelier National Monument was established in 1916 in recognition of its  
1325 outstanding Ancestral Pueblo archaeological resources. Three other sets of resources in the  
1326 vicinity of LANL have been established as NHL Districts: The Bandelier CCC (Civilian  
1327 Conservation Corps) Historic District on Bandelier National Monument (established in 1987);  
1328 Puye Ruins on the Santa Clara Indian Reservation (1966); and the Los Alamos Scientific

1329 Laboratory (1965). The latter is the location of former TA-1 in downtown Los Alamos, which  
1330 includes Fuller Lodge, the Bathtub Row Houses, and the Ice House Monument at Ashley Pond.  
1331 Additional resources of note in Los Alamos County listed in the Register include the Guaje Site  
1332 (1982) and Chupaderos Mesa Village (1990), both large Ancestral Pueblo villages, the  
1333 Chupaderos Canyon Small Structural Site (1990), and the Guaje Water/Soil Control Site (1990)  
1334 all on Santa Fe National Forest lands; the White Rock Canyon Archaeological District (1990,  
1335 1992); Pajarito Springs Site (1982); and two historic wagon roads, Bayo Road (2003) and Grant  
1336 Road (2004). In 2003, 10 “Homestead Era Roads and Trails of Los Alamos, New Mexico” were  
1337 placed on the New Mexico Register of Historic Places.

## 1338 **Section 6. Numbers and Types of Historic Properties at LANL**

1339 As noted in the glossary, archaeological resources include any location exhibiting the traces of  
1340 past human activity that can yield information through use of archaeological methods and  
1341 principles. Homestead sites and features are included in the category of archaeological resources,  
1342 along with trash deposits dating to the Manhattan Project and Cold War—however, more recent  
1343 historic buildings and structures are excluded from consideration as archaeological resources. As  
1344 of October 2004, a total of 1933 archaeological sites have been recorded at LANL. These are  
1345 roughly divided into prehistoric resources versus historic resources. Prehistoric archaeological  
1346 sites at LANL refer to locations containing items used or modified by people, or other physical  
1347 evidence of the use of people, before the establishment of a European presence in the upper Rio  
1348 Grande Valley in the middle of the 16th century. Historic archaeological sites at LANL include  
1349 any archaeological resources dating after that date through the Homestead period, and including  
1350 trash scatters and other nonstructural remains dating to the Manhattan Project and the Cold War.

1351  
1352 As of October 2004, archaeological surveys have been conducted on approximately 90% of the  
1353 land within LANL, with 86% having been intensively surveyed in compliance with Federal  
1354 standards for complete survey coverage. A total of 1796 prehistoric archaeological sites have  
1355 been recorded at LANL, most of which date to the 13th through 15th centuries. A total of 440 of  
1356 these prehistoric sites have been formally assessed for eligibility for nomination to the Register in  
1357 consultation with the SHPO. Of these 378 were determined to be eligible, 61 sites ineligible, and  
1358 one of undetermined status. The remaining 1356 sites, which have not yet been formally assessed  
1359 with respect to Register eligibility, legally are assumed to be eligible until assessed. Therefore, a  
1360 total of 1735 sites are eligible or await formal assessment for nomination to the Register.

1361  
1362 A total of 137 historic archaeological sites have been recorded at LANL, the majority of which  
1363 (124) are structures or artifact scatters associated with the early Historic or Homestead periods.  
1364 The remaining 13 sites are experimental areas and artifacts scatters dating from the Manhattan  
1365 Project and Cold War periods. Of these 137 sites, 34 have been formally declared eligible for the  
1366 Register.

1367  
1368 In terms of the historic built environment (Manhattan Project and more recent), there are a total of  
1369 536 buildings and structures that date to the Manhattan Project and early Cold War. Of these, 56  
1370 date to the Manhattan Project. A total of 189 of these 536 buildings and structures have been  
1371 evaluated for eligibility for inclusion in the Register, of which 108 have been determined eligible  
1372 and 81 not eligible. These figures include a small number of structures younger than 50 years in  
1373 age that are likely to be deemed of exceptional national significance and are thus eligible for  
1374 inclusion in the Register despite not yet having achieved the 50-year-old age limit normally  
1375 required for inclusion in the Register. These potentially exceptional structures are those identified

1376 as the 15 “SWEIS Key Facilities” in the 1999 Site-Wide Environmental Impact Statement for  
1377 Continue Operation of the Los Alamos National Laboratory (SWEIS).

1378

1379 The following is a classification and brief description of the types of archaeological sites or  
1380 features within sites and historic building and structure categories that are known to be present at  
1381 LANL. The archaeological site types are defined on the basis of their size, morphological  
1382 characteristics of associated features, and the nature of the associated artifact assemblages.

1383

1384 **Administration building:** A category of historic building that includes office buildings and  
1385 facilities housing cafeterias and health and safety offices (the latter being change rooms and  
1386 offices for monitoring staff).

1387

1388 **Cavate:** A room carved into a cliff face within the Bandelier Tuff geological formation. The  
1389 category includes isolated cavates, multiroomed contiguous cavates, and groups of adjacent  
1390 cavates that together form a cluster or complex.

1391

1392 **Complex or plaza pueblo:** One or more pueblo roomblocks partially or completely enclosing a  
1393 plaza. Plaza pueblos typically are much larger (in both room numbers and site size) than single  
1394 pueblo roomblock sites, often representing structures originally two or three stories in height.

1395

1396 **Game pit:** A cavity dug down into the tuff bedrock presumed to have been used as a passive  
1397 hunting drop site for larger game animals (e.g., deer) or as concealment from which to lure and  
1398 trap birds.

1399

1400 **Garden plots:** Small, formal agricultural areas, often bounded with cobbles and containing gravel  
1401 mulch (e.g., grid gardens and/or terraces). This site category typically consists of square to  
1402 rectangular-shaped rock alignments, with individual units being more than 3 meters in length (in  
1403 contrast with one- to three-room structures, defined below).

1404

1405 **Grinding slicks:** Concave depressions in bedrock created by the sharpening of stone axes, the  
1406 pulverizing and grinding of plants, or other related activities. These often occur in sets of multiple  
1407 parallel depressions.

1408

1409 **Historic artifact scatter/trash scatter:** A concentration of items, including Euro-American  
1410 artifacts, produced and deposited after AD 1600 (but most typically in the Los Alamos area  
1411 deposited after about AD 1890).

1412

1413 **Historic structure:** A building or other structure constructed after AD 1890, including both  
1414 homestead structures and Laboratory-era buildings and structures that have been evaluated for  
1415 eligibility.

1416 **Isolated object or occurrence:** Individual artifacts (such as a projectile point) or small clusters of  
1417 a single type of prehistoric and historic artifact (e.g., pottery sherds from the same vessel; related  
1418 chippings from the manufacture of a chipped stone tool), found outside the boundaries of defined  
1419 archaeological site. While such items are treated differently from defined archaeological sites for  
1420 management purposes, they can nevertheless inform on past human behaviors and occupations at  
1421 LANL.

1422

1423 **Kiva:** An Ancestral Pueblo ceremonial room, typically circular in shape and partially or fully  
1424 underground, in some cases being excavated deeply into bedrock. Most kivas are associated with  
1425 habitation sites, but some can be found in isolation. “Cave kiva” is a term sometimes used for

1426 unusually large cavate rooms exhibiting a squarish shape, substantial plaster, and other features  
1427 such as petroglyph panels and floor loom holes.

1428

1429 **Laboratory-processing building:** A category of historic building in which laboratory and/or  
1430 processing activities were conducted. This category includes scientific research laboratories or  
1431 facilities that processed chemicals or other experimental materials (such as high explosives,  
1432 tritium, plutonium, metals alloys, etc.).

1433

1434 **Lithic scatter:** Clusters of chipped stone tools and/or pieces of chipped stone produced during the  
1435 manufacturing of chipped stone tools.

1436

1437 **Lithic and ceramic scatter:** A combination of ceramic sherds, chipped stone, and/or ground  
1438 stone artifacts, but lacks identifiable surface structural remains or evidence of pit structures.

1439

1440 **One- to three-room structures:** The remains of a small surface structure constructed of adobe,  
1441 jacal, or masonry. This site typically consists of square to rectangular-shaped rock alignments,  
1442 with individual units being no more than 3 meters in length. The majority of these sites are  
1443 identical to what many researchers term “fieldhouses” and “farmsteads.” Also included in the  
1444 one- to three-room structure category are examples of unusually large rectangular structures,  
1445 along with several smallish structures that are unusual due to the presence of upright stones or  
1446 because of locational considerations such as at the eastern tips of mesas. Some of these “unusual”  
1447 structures may represent shrines or other purposes not directly related to agriculture.

1448

1449 **Pit structure:** Presumed habitation sites with evidence (e.g., depressions) of one or more  
1450 structures built entirely or partially underground.

1451

1452 **Plaza or complex pueblo:** Contains one or more pueblo roomblocks partially or completely  
1453 enclosing a plaza. Plaza pueblos typically are much larger (in both room numbers and site size)  
1454 than single pueblo roomblock sites, often representing structures originally two or three stories in  
1455 height.

1456

1457 **Pueblo roomblock:** The remains of a contiguous, multiroom habitation structure (four or more  
1458 rooms with no enclosed plaza) constructed of adobe, jacal, or masonry. Somewhat amorphous  
1459 mounds containing evidence of stone rubble (“rubble mounds”) but no distinct alignments can be  
1460 included in this category.

1461

1462 **Rock art:** This category includes several subtypes including petroglyphs, pictographs, and rock  
1463 art panels. A petroglyph consists of a design or set of symbols scratched, pecked, or scraped into  
1464 a rock or plastered surface, and which are distinguished from historic and modern graffiti. A  
1465 pictograph consists of a design or set of symbols painted rather than pecked, scratched, or  
1466 scraped. A rock art panel consists of series of petroglyphs (and, rarely, pictographs inside  
1467 rockshelters and cavates) grouped together on a cliff face or boulder.

1468

1469 **Rock/wood enclosure:** A small area enclosed by loosely stacked rock or log alignments (e.g.,  
1470 corral or lambing pen). These are distinguished from one- to three-room structures by the nature  
1471 of the stacking methods and often by the presence of historic artifacts in and around the  
1472 enclosure.

1473

1474 **Rock feature:** Includes typically isolated examples of rock piles, amorphous rock concentrations,  
1475 and/or upright stones. The latter sometimes are in the shape of a ring several meters in diameter

1476 and are often referred to as “rock rings.” Some of these rock features may be identical to what  
1477 researchers refer to as shrines and boundary markers.

1478  
1479 **Rock ring:** A circular arrangement of rocks. Some of these represent the residue from a  
1480 dismantled tepee or wickiup. Another category of rock rings includes circular arrangements of  
1481 shaped or unshaped tuff blocks, sometime with shaped stone uprights, that may represent  
1482 Ancestral Pueblo shrines.

1483  
1484 **Rockshelter:** An overhang, indentation, or alcove formed naturally in a rockface or large boulder,  
1485 or alternatively, a partly enclosed area created by rockfalls leaning against a rockface or large  
1486 boulder, and which exhibits evidence of human use. Rockshelters generally are not of great depth,  
1487 in contrast to caves.

1488  
1489 **Security buildings and structures:** A category of historic buildings and structures that includes  
1490 guard stations, security lights, and fencing.

1491  
1492 **Stairway:** A set of two or more steps carved into a steep section of tuff bedrock, typically  
1493 associated with trails or access to cavates.

1494  
1495 **Support buildings and structures:** A category of historic buildings and structures that includes  
1496 warehouses, water tanks, utilities, and waste treatment facilities.

1497  
1498 **Trail:** Prehistoric or historic path defined by use-wear or cutting into bedrock or soil surfaces,  
1499 along with any revetments, embankments, or other structural components of the trail.

1500  
1501 **Wagon road:** Rutted track in bedrock formed as a result of historic wagon use, along with  
1502 revetments, embankments, or other structural components of the road.

1503  
1504 **Water control feature:** A device (e.g., stone check dams) that controls the flow of water,  
1505 particularly run-off.

## 1506 **PART II. NHPA Compliance: Section 106**

### 1507 **Section 7. Overview of the NHPA Section 106**

#### 1508 **Section 106 of the NHPA**

1509 Section 106 of the NHPA requires Federal agencies to take into account the effects of their  
1510 undertakings on historic properties and affords the SHPO/Tribal Historic Preservation Officer  
1511 (THPO) a reasonable opportunity to comment. In cases such as the finding of an effect by an  
1512 undertaking, either adverse or not adverse, the ACHP will also be afforded the opportunity to  
1513 comment. The historic preservation review process mandated by Section 106 is outlined in  
1514 regulations issued by ACHP. The revised regulations, “Protection of Historic Places” (36 CFR  
1515 Part 800), became effective January 11, 2001, and are summarized below.

#### 1516 ***Initiate Section 106 Process***

1517 The responsible Federal agency first determines whether it has an undertaking, defined as any  
1518 activity that could affect historic properties. Historic properties are properties that are included in  
1519 the Register that meet the criteria for the Register, or await Register eligibility determinations. If  
1520 so, it must identify the appropriate SHPO/THPO, along with other appropriate tribal entities if

1521 there is no THPO, to consult with during the process. It should also plan to involve the public and  
1522 identify other potential consulting parties. If it determines that it has no undertaking, or that its  
1523 undertaking is a type of activity that has no potential to affect historic properties, the agency has  
1524 no further Section 106 obligations.

### 1525 **Identify Historic Properties**

1526 If the agency's undertaking could affect historic properties, the agency determines the scope of  
1527 appropriate identification efforts and then proceeds to identify historic properties in the area of  
1528 potential effects (APE). The agency reviews background information, consults with the  
1529 SHPO/THPO and others, seeks information from knowledgeable parties, and conducts additional  
1530 studies as necessary. Districts, sites, buildings, structures, and objects listed in the Register are  
1531 considered; unlisted properties are evaluated against the National Park Service's published  
1532 criteria, in consultation with the SHPO/THPO and any Indian tribe that may attach religious or  
1533 cultural importance to them.

- 1534
- 1535 • **Criterion A** – Properties that are associated with events that have made a significant  
1536 contribution to the broad patterns of history.
- 1537 • **Criterion B** – Properties that are associated with the lives of persons significant in the  
1538 past.
- 1539 • **Criterion C** – Properties that embody the distinctive characteristics of a type, period, or  
1540 method of construction, or that represent the work of a master, or that possess high  
1541 artistic values, or that represent a significant and distinguishable entity whose  
1542 components may lack individual distinction.
- 1543 • **Criterion D** – Properties that have yielded, or may be likely to yield, information  
1544 important in prehistory or history.
- 1545

1546 In addition to these four criteria, there are seven criteria considerations that are taken into account  
1547 in the evaluation of Register eligibility. Three of these are applicable to properties at LANL:

- 1548
- 1549 • **Criteria Consideration (B)** – A building or structure removed from its original location  
1550 but which is significant primarily for architectural value, or which is the surviving  
1551 structure most importantly associated with a historic person or event.
- 1552 • **Criteria Consideration (E)** – A reconstructed building when accurately executed in a  
1553 suitable environment and presented in a dignified manner as part of a restoration master  
1554 plan, and when no other building or structure with the same association has survived.
- 1555 • **Criteria Consideration (G)** – A property achieving significance within the past 50 years  
1556 if it is of exceptional importance.
- 1557

1558 All historic properties identified within the APE need to be evaluated for Register eligibility.  
1559 Additionally, incomplete or prior evaluations may need to be reevaluated. If the criteria are met,  
1560 then the property is considered eligible for the Register. If questions arise about the eligibility of a  
1561 given property, the agency may seek a formal determination of eligibility from the National Park  
1562 Service. Section 106 review gives equal consideration to properties that have already been  
1563 included in the Register as well as those that have not been so included, but that meet Register  
1564 criteria.

1565

1566 Documentation of the results of the historic property identification process must be provided to  
1567 the SHPO and consultation conducted. If the agency official and the SHPO do not agree, the  
1568 ACHP may be requested to arbitrate if the dispute cannot be resolved, in which case the Keeper  
1569 of the Register will make the eligibility determination. Documentation of the results of the

1570 historic property identification process must be provided to the SHPO and consultation  
1571 conducted.

1572  
1573 If the agency finds that no historic properties are present or affected, it provides documentation to  
1574 the SHPO/THPO and, barring any objection in 30 days, proceeds with its undertaking.

1575  
1576 If the agency finds that historic properties are present, it proceeds to assess possible adverse  
1577 effects.

### 1578 **Assess Adverse Effects**

1579 The agency, in consultation with the SHPO/THPO, makes an assessment of adverse effects on the  
1580 identified historic properties based on criteria found in ACHP's regulations.

1581  
1582 If they agree that there will be *no adverse effect*, the agency proceeds with the undertaking and  
1583 any agreed-upon conditions.

1584  
1585 If they find that there is an *adverse effect*, or if the parties cannot agree and ACHP determines  
1586 within 15 days that there is an adverse effect, the agency begins consultation to seek ways to  
1587 avoid, minimize, or resolve the adverse effects.

### 1588 **Resolve Adverse Effects**

1589 The agency consults to resolve adverse effects with the SHPO/THPO and others, who may  
1590 include Indian tribes, local governments, permit or license applicants, and members of the public.  
1591 ACHP may participate in consultation when there are substantial impacts to important historic  
1592 properties, when a case presents important questions of policy or interpretation, when there is a  
1593 potential for procedural problems, or when there are issues of concern to Indian tribes.

1594  
1595 Consultation usually results in a Memorandum of Agreement (MOA) or data recovery plan,  
1596 which outlines agreed-upon measures that the agency will take to avoid, minimize, or resolve the  
1597 adverse effects. In some cases, the consulting parties may agree that no such measures are  
1598 possible, but that the adverse effects must be accepted in the public interest.

### 1599 **Implementation of MOA**

1600 If a MOA is executed, the agency proceeds with its undertaking under the terms of the MOA.

### 1601 **Failure to Resolve Adverse Effects**

1602 If consultation proves unproductive, the agency or the SHPO/THPO, or ACHP itself, may  
1603 terminate consultation. If a SHPO terminates consultation, the agency and ACHP may conclude a  
1604 MOA without SHPO involvement. However, if a THPO terminates consultation and the  
1605 undertaking is on or affecting historic properties on tribal lands, ACHP shall comment as  
1606 stipulated in 36 CFR Part 800. If the agency terminates consultation, it must submit appropriate  
1607 documentation to ACHP and request ACHP's written comments. The agency head must take into  
1608 account ACHP's written comments in deciding how to proceed.

### 1609 **Tribes and the Public**

1610 Public involvement is a key ingredient in successful Section 106 consultation, and the views of  
1611 the public should be solicited and considered throughout the process. The regulations also place  
1612 major emphasis on consultation with Indian tribes and Native Hawaiian organizations, in keeping

1613 with the 1992 amendments to NHPA. Consultation with an Indian tribe must respect tribal  
1614 sovereignty and the government-to-government relationship between the Federal government and  
1615 Indian tribes. Even if an Indian tribe has not been certified by the National Park Service to have a  
1616 THPO who can act for the SHPO on its lands, it must be consulted about undertakings on or  
1617 affecting its lands on the same basis and in addition to the SHPO.

## 1618 **Section 8. April 2000 LASO/SHPO Programmatic Agreement for** 1619 **the Management of Historic Properties at LANL**

1620 In April 2000, a PA (MOU DE-GM32-00AL77152) was executed between what is now LASO,  
1621 the ACHP, and the New Mexico SHPO for the purpose of specifying and streamlining the  
1622 management of historic properties at LANL under the NHPA.

1623 This document stated that the mission of LANL as a scientific laboratory, with its associated  
1624 operation, maintenance, research, development, waste management, and decontamination and  
1625 decommissioning activities, may have both direct and indirect effects on historic properties  
1626 included in or eligible for the Register.  
1627

1628 The LASO, the SHPO, and the ACHP also agreed that LANL activities that have the potential to  
1629 affect historic properties included in or eligible for the Register can be administered in  
1630 accordance to the stipulations stated in the PA. The PA was designed to be effective for five years  
1631 or until the LANL Plan is accepted by the SHPO and the ACHP. As of June 2005, the  
1632 programmatic agreement has been extended for one additional year by agreement of the signatory  
1633 parties.  
1634

1635 The PA addressed a subset of the historic properties present at LANL—prehistoric and historic  
1636 archaeological sites, and buildings and structures dating to the Manhattan Project and early Cold  
1637 War (1943 to 1956). The Manhattan Project and early Cold War resources to be identified and  
1638 evaluated included, but were not limited to, buildings, structures, experimental areas, and discrete  
1639 groupings of building, i.e., districts. Documentation for properties deemed eligible and ineligible  
1640 for the Register was provided to the SHPO for comment.  
1641

1642 The PA also required the development of historic contexts and themes for historic properties built  
1643 from 1943 to 1956 (the completion of all fundamental nuclear weapons design work at LANL  
1644 and the end of Los Alamos being a closed facility) at LANL, to eventually be included in the  
1645 LANL Plan. In addition, properties constructed from 1956 to 1963 (the latter date representing  
1646 the signing of the Limited Test Ban Treaty) also had to be evaluated for effects from proposed  
1647 Laboratory undertakings, even though the historic contexts for these properties are still in  
1648 development. Because of the nature of the work at LANL, it was recognized that certain  
1649 properties less than 50 years of age would be eligible as exceptionally significant as defined in  
1650 eligibility Criteria Consideration G.  
1651

1652 Included in the PA was a list of property types that were exempt from identification and  
1653 evaluation as well as a list of activities or undertakings that were deemed exempt from cultural  
1654 resource management review. These and other aspects of the PA are contained in Section 9 and  
1655 elsewhere in the LANL Plan. A copy of the original PA itself is available at LANL, as specified  
1656 in Appendix B.  
1657

## 1658 **Section 9. NHPA Section 106 Compliance Review Process at LANL**

1659 The LASO and LANL integrate cultural resource concerns/reviews into program and project  
1660 planning in a timely fashion in order to protect significant cultural resources and to avoid  
1661 unnecessary delays, conflicts, and costs for its undertakings.

1662  
1663 The LANL Cultural Resources Team conducts approximately 800 to 1000 reviews of proposed  
1664 Laboratory projects each year. These projects range in size and complexity, from routine to  
1665 specific actions like constructing new buildings, power lines, and utility corridors; repairing and  
1666 replacing existing signs, paving, utility lines, fencing, and lightning protection; maintenance of  
1667 dirt and paved roadways; installing storm water gauging stations; relocating sheds and trailers;  
1668 environmental restoration (ER) sampling and cleanup of areas; and the designating of pertinent  
1669 facilities as excess property for eventual demolition.

1670  
1671 Compliance reviews and all other work conducted in support of the NHPA at LANL are  
1672 performed by individuals meeting the professional qualification standards set forth in the  
1673 Secretary of the Interior's Standard and Guidelines for Archaeology and Preservation (48 FR  
1674 44716).

### 1675 **How Laboratory Projects are Initiated**

1676 In order to properly understand the Section 106 compliance process at LANL, it is first necessary  
1677 to briefly discuss and illustrate how the institution is currently organized, as of July 2005. The top  
1678 of the Laboratory management chain is the Director's Office. Situated directly underneath are  
1679 eight associate directors responsible for virtually all operations and management at LANL. These  
1680 eight directorates include Administration, Nuclear Weapons, Security and Facility Operations,  
1681 Technical Services, Strategic Research, Threat Reduction, Weapons Engineering and  
1682 Manufacturing, and Weapons Physics. Nested under these directorates are a number of Divisions  
1683 responsible for the day-to-day operations of LANL. Within each division are a number of Groups  
1684 and within each Group are several teams.

1685  
1686 For example, the LANL Technical Services Directorate contains eight divisions, including  
1687 Environmental Stewardship (ENV). ENV Division comprises five groups, including Ecology  
1688 (ENV-ECO), along with several additional programs. ENV-ECO breaks out into four teams,  
1689 Cultural Resources, NEPA, Ecorisk, and Biological Compliance Assurance. The Cultural  
1690 Resources Team maintains two programs: Historic Buildings and Archaeology.

1691  
1692 In addition to ENV Division, other Divisions of considerable significance to the Section 106  
1693 process at LANL include Facility and Waste Operations (facility management and project  
1694 review), Project Management (PM—planning), Health, Safety, and Radiation Protection  
1695 (excavation permit review), and Security and Safeguards (S—document classification and  
1696 emergency services) who along with ENV are in the Operations Directorate; Engineering  
1697 Sciences and Applications (ESA), a major landholder in the Weapons Engineering and  
1698 Manufacturing Directorate; and Dynamic Experimentation a major landholder in the Weapons  
1699 Physics Directorate.

1700 In terms of actual land use, LANL is divided into discrete geographical areas called Technical  
1701 Areas (TAs), in part based on the specific type of work currently or formerly conducted in the  
1702 area. The highest number designated for a TA is 74, but only about two-thirds of these 74  
1703 numbers are actually used due to changes in land use and TA function over the 60 years of  
1704 LANL's existence. For management purposes the Laboratory is divided into nine facility

1705 management units (FMUs) made up of one or more individual TAs or portions of TAs. These  
1706 FMUs are nested within the Facility Operations Support Division of the Directorate for Security  
1707 and Facility Operations.

1708

1709 Facility Managers (FMs) are responsible for managing and maintaining the facilities within their  
1710 FMU. The FM is responsible for authorizing and directing all facility work (construction of new  
1711 facilities, upkeep and upgrading of existing facilities, and all operations conducted within and  
1712 surrounding the facilities), in accordance with the Integrated Safety Management (ISM) Program  
1713 and the authorization basis of the facilities. FMs deal with the multifaceted requirements of  
1714 LASO, LANL, and various laws governing environmental protection, occupational health and  
1715 safety of workers and the public, radiation protection, facility safety codes, and fire protection.  
1716 All of this work is in support of LANL's strategic mission.

### 1717 **How LANL Cultural Resources Personnel Receive Undertakings for** 1718 **Section 106 Compliance Reviews**

1719 LANL receives notification of Laboratory projects through several means. The most common are  
1720 through the Laboratory's formal Permit Requirements Identification (PR-ID) System project  
1721 profile process; Excavation/Soil Disturbance Permit Requests (Excavation Permits). Notifications  
1722 are also occasionally received through phone calls and e-mail messages. All APEs for each of  
1723 these projects are reviewed for accuracy and for potential impacts to both archaeological and  
1724 historical resources, including historic buildings.

1725

1726 The PR-ID process is a LANL service, implemented and overseen by the Engineering Division  
1727 Document Control and Records Management Group (ENG-DCRM) of the ISM Program. The  
1728 PR-ID process is used to assist LANL personnel in identifying and managing environment,  
1729 safety, and health Laboratory Implementation Requirements (LIRs) and potential impacts to  
1730 proposed or ongoing projects. Among these are new construction, programs, and processes; ER  
1731 projects; experiments; blading roads; maintenance and upgrading facilities; and the  
1732 decontamination, decommissioning, demolition, or shutdown of a facility. ENG-DCRM and  
1733 various ENV Division groups review the PR-IDs for potential impacts to the environment,  
1734 cultural resources, threatened and endangered species, wetlands, and created outfalls; potential  
1735 release sites (PRSs); solid waste management units (SWMUs); and also review the PR-IDs for the  
1736 generation of airborne emissions, new waste streams, and impacts to water quality. A formal LIR  
1737 has been established specifically for NEPA, cultural resources, and biological resources project  
1738 review (thus referred to as the NCB LIR).

1739

1740 Project personnel complete a PR-ID form, which ENG-DCRM then posts on a web site for  
1741 designated subject matter experts to review and post comments. The normal review period for a  
1742 PR-ID is two weeks.

1743

1744 Another component of the ISM Program, as well as a part of the Facility Management Work  
1745 Control Program, is the Excavation/Soil Disturbance Permit (Excavation Permit) review process.  
1746 Excavation permits are, as with PR-IDs, reviewed for potential impacts to worker health and  
1747 safety, the environment, cultural resources, utilities, PRSs, and SWMUs; or impacts that would  
1748 result in unpermitted disposal of hazardous waste. Safety and Industrial Hygiene Field Support  
1749 Group (HSR-8) and the general operations services contractor (KSL) initiate, evaluate,  
1750 coordinate, and approve any activity requiring excavation and/or soil disturbance on DOE-  
1751 designated property. All Laboratory ground-disturbing activities have to obtain an Excavation  
1752 Permit Request from HSR-8. These documents go through a review process by subject matter

1753 experts similar to that defined above for the PR-ID process. The normal review period for an  
1754 Excavation Permit is two weeks.

1755

1756 A separate review system at LANL is that associated with the Integrated Work Management  
1757 process—a process for doing work in a manner that protects people, the environment, property,  
1758 and the security of the nation. This process is designed to accommodate work ranging from a  
1759 preventative maintenance operation with a set of well-defined steps to a large, one-time research  
1760 experiment, as well as all new construction at LANL. The review system is electronic and is set  
1761 up in manner similar to that described for the PR-ID system. The primary review mechanism is  
1762 referred to as the Job Hazard Analysis tool. Cultural resources review is fully integrated into this  
1763 process.

## 1764 **Identification, Inventory, and Evaluation**

1765 Employing the criteria for listing in the Register, as well as historic contexts and themes  
1766 developed at LANL, LASO will identify historic structures and properties using standardized  
1767 field survey forms developed by LANL and reviewed by Parties. LASO will evaluate resources  
1768 so identified for listing in the Register. These resources include archaeological sites, TCPs,  
1769 buildings, structures, experimental areas, and discrete groupings of buildings or archaeological  
1770 sites, i.e., districts. Documentation for properties deemed eligible and ineligible for the Register  
1771 will be provided to the SHPO for comment.

1772

1773 LASO will also identify and evaluate resources that were constructed between 1942 and 1963  
1774 (signing of the Limited Test Ban Treaty) for proposed undertakings. Resources less than 50 years  
1775 of age may be eligible as exceptionally significant as defined in 36 CFR Part 60, Criteria A,  
1776 Consideration G.

## 1777 **Property Types and Undertakings Exempt from Section 106 Identification** 1778 **and Evaluation**

1779 The following property types are exempt from identification and evaluation:

- 1780 • Structures with minimal or no visible surface manifestations (i.e., pits, underground storage  
1781 tanks, underground vaults, buried material disposal areas, septic tanks, underground  
1782 pipelines, sewer lines, and steam, storm water, acid, or electrical manholes)
- 1783 • Above-ground fuel tanks
- 1784 • Wells and bore holes
- 1785 • Road-block barriers and siren poles
- 1786 • Transformer and pressure relief valve stations
- 1787 • Mobile trailers and modular buildings and enclosures—these structures are used either as  
1788 mobile trailers that are moved on site, or premanufactured sides and roofs typically resting on  
1789 poured concrete pads. They serve as temporary administrative support office space or storage  
1790 facilities. Most have been brought on site over the last 25 years.

1791 The following activities or undertakings are exempt from cultural resource management review,  
1792 provided that (a) they do not affect those qualities that make a historic property eligible for the  
1793 Register and (b) that they do not involve ground-disturbing activities.

1794

- 1795 • Replacement or removal of general equipment of facility components
- 1796 • Installation, maintenance, repair, storage, relocation, removal, or replacement of process or  
1797 laboratory equipment and associated systems
- 1798 • Siting, installation, maintenance, repair, removal, and operation of plant water systems

- 1799 • Siting, installation, maintenance, repair, removal, or replacement of plant and building
- 1800 electrical systems
- 1801 • Siting, installation, maintenance, repair, removal, or replacement of communications and
- 1802 computer systems
- 1803 • Routine service activities such as mowing and trimming grass, shrubs, or trees; moving
- 1804 furniture and equipment; snow removal; erosion control; housekeeping services; small-scale
- 1805 road, sidewalk, and parking lot repair; maintenance and repair of vehicles and equipment,
- 1806 fencing, signs; maintenance of safe/vaults and locks; and routine decontamination of tools,
- 1807 surfaces, and equipment
- 1808 • Operation and maintenance of waste treatment, storage, and disposal facilities
- 1809 • Maintenance, repair, modification, or direct in kind replacement or refinishing associated
- 1810 with structures or buildings
- 1811 • Installation, maintenance, repair, or replacement of equipment used in current operations
- 1812 designed to maintain compliance with permits and Occupation Safety and Health Act
- 1813 regulations and Americans with Disabilities Act regulations
- 1814 • Installation and maintenance of features for hazard prevention of equipment, buildings, and
- 1815 structures
- 1816 • Installation, maintenance, removal, and repair of security systems
- 1817 • Installation, maintenance, removal, repair, or replacement of heating and air conditioning
- 1818 systems
- 1819 • Modification to steam condensate systems and chemical treatment systems
- 1820 • Routine upgrades and modification to fire protection systems
- 1821 • Removal of asbestos-containing materials from existing buildings and structures
- 1822 • Removal of polychlorinated biphenyl contaminated items
- 1823 • Installation or modification of personnel safety systems

#### 1824 **“No Property-No Effect” Undertakings**

1825 Those undertakings determined to have no direct or indirect effect on historic properties because  
 1826 no properties are present in the APE (“no property no effect”) will be allowed to proceed and are  
 1827 to be reported on a biannual basis to the SHPO with the documentation available for review and  
 1828 comment.

#### 1829 **“No Effect Through Avoidance” Undertakings**

1830 Those undertakings determined to have no direct or indirect effect on historic properties because  
 1831 all eligible properties within the APE will be avoided by project activities will also be allowed to  
 1832 proceed and are reported to the SHPO on a project-by-project basis for review and comment. The  
 1833 SHPO may submit comments within 30 days and LASO and LANL will make a good faith effort  
 1834 to consider them. If the project has already been completed, the SHPO comments will be taken  
 1835 into consideration in the future when a similar “no effect through avoidance” project is proposed.

#### 1836 **“No Adverse Effect” Undertakings**

1837 Unless specifically exempted, LANL undertakings involving the remodeling or modification to  
 1838 interior rooms of administrative or support buildings built after 1946 (the Manhattan Project) will  
 1839 be considered to have “no adverse effect” and allowed to proceed. Documentation and supporting  
 1840 justification for the determination will be provided by LASO to the SHPO on a biannual basis.  
 1841

1842 Following guidance included in the Advisory Council on Historic Preservation’s *Balancing*  
 1843 *Historic Preservation Needs with the Operation of Highly Technical or Scientific Facilities*

1844 (1991), and given the fact that adaptable design is an essential element of experimental facilities,  
1845 the remodeling or renovation of Register eligible technical laboratories, shops, and structures,  
1846 where those modifications or renovations support the continued scientific mission of the property  
1847 will also be considered to have “no adverse effect.” Mission-related upgrades to technical  
1848 buildings and structures will be allowed to proceed provided that the modifications are in keeping  
1849 with the Laboratory’s industrial vernacular style. Upgrades not exempted from Section 106  
1850 identification and evaluation will require 35mm black and white photographic documentation of  
1851 the present condition, review of archival photographs and the collection of architectural plans and  
1852 drawings. These documents and photographs will be compiled and maintained by LANL  
1853 throughout the lifecycle of the property. A biannual report of such undertakings will be provided  
1854 to the SHPO. Documentation and supporting justification for the determination of “no adverse  
1855 effect” will be provided by LASO to the SHPO on a case-by-case basis when requested. All other  
1856 undertakings, including the demolition of properties, will be evaluated through the application of  
1857 36 CFR Part 800.5–800.6.

1858  
1859 Modifications to technical laboratories, shops and structures that are protected under the NHPA,  
1860 but have not received Register eligibility assessments will follow the procedures and  
1861 requirements delineated in 36 CFR Part 800.4–800.6.

1862  
1863 Undertakings that may have the potential to affect a prehistoric or historic property(s) will be  
1864 evaluated, and if a determination of “no adverse effect” is made, it will be documented and  
1865 submitted to the SHPO for review and comment.

## 1866 **“Adverse Effect” Undertakings**

1867 All undertakings determined to have an adverse effect to an eligible property will have a plan  
1868 developed to resolve the adverse effect. This plan may include 1) modifying the undertaking to  
1869 avoid the property, 2) modifying the undertaking to minimize the adverse effect, 3) completely  
1870 documenting the property if a building or structure, and 4) partially or completely excavating an  
1871 archaeological site.

1872  
1873 For undertakings that may affect Register eligible historic and/or prehistoric archeological sites,  
1874 LASO will follow the procedures contained in 36 CFR Part 800.5–800.6, with the following  
1875 exceptions: Adverse effects to isolated historic trash scatters and prehistoric artifact scatters and  
1876 rock features on bedrock will be reviewed and resolved as outlined below. These data recovery  
1877 procedures will be carried out in lieu of procedures set forth in 36 CFR Part 800.

1878  
1879 • Isolated trash scatters are historic sites that are temporally associated with the Homestead  
1880 Period occupation of LANL (1890 to 1942) but are not physically associated with any  
1881 homestead feature or patented homestead site and may have limited information  
1882 potential. Isolated trash scatters typically represent remote dumping activities and may  
1883 even comprise a single dumping event. Data recovery will include a detailed recording of  
1884 the site (if not already done) and the analysis of surface artifacts (carried out in the field  
1885 unless additional information would be gained through subsequent laboratory analysis).  
1886 Prior to the commencement of the data recovery, the NNSA/DOE will notify the SHPO  
1887 of its intent to conduct research. Written notification will identify both the site and the  
1888 proposed undertaking. Results of any data recovery project carried out under this  
1889 provision will be reported to the SHPO.

1890  
1891 • Prehistoric artifact scatters represent activity areas that on the Pajarito Plateau are  
1892 primarily associated with the Archaic period (5,500 BC to 600 AD lithic scatters) or the

1893 Ancestral Pueblo period (AD 600 to 1600 lithic and/or ceramic scatters). Isolated rock  
 1894 features are frequently of unknown cultural affiliation. Prehistoric artifact scatters and  
 1895 isolated rock features situated on bedrock will be mitigated through in-field data  
 1896 recovery. With the limited data potential resulting from the proximity to bedrock, the  
 1897 information content of these sites will be exhausted through in-field analysis and site  
 1898 recordation. Data recovery for artifact scatters situated on bedrock will entail the detailed  
 1899 recording of the site including an infield analysis of artifacts. Should there be potential  
 1900 for additional information to be gained through subsequent laboratory analysis, limited  
 1901 numbers of artifacts may be collected. Data recovery of rock features situated on bedrock  
 1902 will consist of a precise description of the feature, a site sketch, digital and 35mm and  
 1903 black and white photographs, and infield analysis of any associated artifacts. Collection  
 1904 and subsequent laboratory analysis may be conducted for artifacts with the potential to  
 1905 yield additional information. Native American organizations will be consulted concerning  
 1906 the potential of these sites to be TCPs. Prior to the commencement of the data recovery,  
 1907 the LASO will notify the SHPO of its intent to conduct research under this provision.  
 1908 Written notification will identify both the site and the proposed undertaking. Results of  
 1909 any data recovery project carried out under this provision will be reported to the SHPO.

1910  
 1911 Adverse effects to Register eligible buildings and structures will be resolved by implementing the  
 1912 procedures listed below, except for those historic buildings and structures deemed “exceptionally  
 1913 significant” and discussed in Section 10. Notification of the intent to implement these procedures  
 1914 will be sent to the SHPO and the Council for comment. If the Council and SHPO do not comment  
 1915 on the proposed resolution of adverse effects, the procedures will be implemented 15 days after  
 1916 notification of intent.

1917  
 1918 Documentation conducted under 1 and 2 will be carried out according to the standards of the  
 1919 Historic American Building Survey/Historic American Engineering Record (HABS/HAER),  
 1920 Level Two, with original LANL construction drawings substituted for new drawings, and  
 1921 medium format black and white photographs substituted for large format, when appropriate.

- 1922  
 1923 1. Prior to demolition or major remodeling, the interior and exterior of the building or  
 1924 structure will be photographed. Archival quality, medium format black and white  
 1925 photographs will be produced in accordance with the standards set forth in the Secretary  
 1926 of the Interior’s Guidelines for Architectural and Engineering Documentation.  
 1927
- 1928 2. A listing of all LANL drawings for the property will be compiled, and key drawings will  
 1929 be submitted. If available, drawings and technical schematic plans will be submitted  
 1930 depicting any significant instrumentation historically housed in the property.  
 1931 Documentation will include a map showing the location of the property relative to the  
 1932 entire Laboratory. Additionally, the general site area will be documented so that there  
 1933 will be a permanent archival record of the history and appearance of the technical area  
 1934 where the property is located. A site map will also be generated depicting, at a sufficient  
 1935 scale, the footprint of each eligible and non-eligible building or structure within the  
 1936 associated technical area as they appear today. A series of historic site maps, representing  
 1937 the technical area’s construction history, will also be included.  
 1938
- 1939 3. A written history will be prepared and will include a use history of the eligible property  
 1940 supplemented with information from oral interviews. This use history will include a  
 1941 discussion of the associated technical area’s role at LANL, its historical significance, and  
 1942 a comparison of its mission with similar missions historically conducted at Los Alamos  
 1943 or at other Department of Energy Manhattan Project or Cold War facilities, as applicable.

1944 LANL historic building survey forms, with representative drawings and photographs, will  
1945 also be included.

1946  
1947 4. Undertakings affecting historic properties will commence only after drawings have been  
1948 compiled and medium format photographs have been produced. A final report will be  
1949 submitted to the SHPO after the undertaking is complete.

1950  
1951 5. Copies of all documentation, including historical and architectural information, will be  
1952 provided to the New Mexico SHPO. The New Mexico State Records Center and  
1953 Archives, Santa Fe, New Mexico, will be the designated repository. Original negatives  
1954 will be curated at LANL's photographic archives.

1955  
1956 Historically significant equipment and "artifacts" associated with historic properties will be  
1957 identified prior to removal or demolition action. These artifacts may have interpretive or  
1958 educational value as exhibits within local, state, or national museums and will be curated, as  
1959 appropriate, at LANL. Museums will be notified of the availability of artifacts.

## 1960 **Documentation of Section 106 Compliance Review Field Checks and** 1961 **the Marking of Sites for Avoidance**

1962 In order to properly review and evaluate project undertakings, it is often necessary for qualified  
1963 resource managers to conduct field checks. In a similar vein, if a project undertaking has  
1964 associated activities that are performed in the vicinity of a known historic property, it is often  
1965 deemed necessary to clearly mark for avoidance (with string and flagging tape) the boundaries of  
1966 the property. These field checks and site marking activities are documented in field activity logs  
1967 that accompany individual site and project files.

## 1968 **Negative Archaeological Surveys**

1969 In the event that an archaeological survey in a previously unsurveyed portion of the Laboratory  
1970 results in a negative finding, this finding will be conveyed to the SHPO on a case-by-case basis.  
1971 In support of this requirement, LANL will provide the SHPO with baseline documentation of all  
1972 previous systematic surveys.

## 1973 **Recommended Changes in Register Eligibility Status or Changes in** 1974 **the Boundaries of Register Eligible Sites**

1975 Recent major survey and excavation projects at LANL have brought into question the status  
1976 and/or size of a substantial number of archaeological sites at LANL previously determined  
1977 eligible for listing in the Register. For example, some sites were not adequately studied in terms  
1978 of the integrity of subsurface deposits or the nature of local geomorphic processes (such as  
1979 bedrock and alluvial settings). Other sites, such as large artifact scatters, may have been  
1980 unsystematically surface mapped and therefore sizable areas without artifacts and likely without  
1981 subsurface deposits were inadvertently included within the site boundaries.

1982  
1983 Archaeological sites that warrant reevaluation include Archaic period lithic scatters (both on mesa  
1984 tops and in canyon bottoms), Ancestral Pueblo artifact scatters, one- to three-room structures, and  
1985 other rock features (including agricultural features) that are on bedrock with little likelihood of  
1986 intact subsurface deposits.

1987  
1988 A separate boundary problem warranting reevaluation is the fact that a number of previously  
1989 determined Register eligible "sites" represent the arbitrary separation of related features in

1990 proximity to one another or, in some cases, the arbitrary lumping of a number of spatially and  
 1991 perhaps chronologically discrete features.

1992  
 1993 Any requested change of boundary or eligibility status will be thoroughly documented and will be  
 1994 presented to the SHPO as part of the normal Section 106 review process. Reevaluation involving  
 1995 actual formal subsurface testing (as opposed to probes to determine the depth of subsurface  
 1996 deposits in bedrock locations), such as might be required for large Archaic period sites in canyon  
 1997 bottoms, will first be reviewed as part of the normal Section 106 process by the SHPO and  
 1998 appropriate culturally affiliated Native American tribes prior to actual testing.

## 1999 **Section 10. Methods, Procedures, and Goals for Management of** 2000 **Post-1942 Historic Buildings and Structures at LANL**

### 2001 **Goals for the Management of Historic Buildings and Structures at LANL**

2002 Beginning in 1943 and continuing to the present, a large number of buildings and structures have  
 2003 been constructed at LANL, many of which have been renovated, moved, or demolished. The  
 2004 distinction between buildings and structures is that buildings are designed for sheltered  
 2005 occupancy by humans, animals, and materials, while structures are architectural and engineering  
 2006 features not meant to be occupied (e.g., berms, firing pits, utility corridors, landscape elements).  
 2007 Together these are commonly referred to as the “built environment.”

2008  
 2009 The April 2000 PA between LASO and the New Mexico SHPO defined a number of steps and  
 2010 goals for evaluating and managing the post-1942 historic built environment at LANL in  
 2011 compliance with Section 106 and Section 110 of the NHPA. Key elements of the agreement  
 2012 included the development of appropriate historic context statements, the development of an oral  
 2013 history program, the development of public outreach and interpretation options, and the  
 2014 continuation of a LANL-wide historic properties identification and evaluation effort, prioritized  
 2015 by the risk to historic properties from mission-related activities.

2016  
 2017 LANL’s management of its post-1942 historic built environment through this LANL Plan is  
 2018 intended to be flexible, subject to periodic review and revision. The LANL Plan functions as a  
 2019 framework for both short- and long-term management actions related to historic properties.  
 2020 Reference to specific compliance guidance and standards on file at LANL is contained in  
 2021 Appendix B. It includes property listings, methods, and examples of LANL historic property  
 2022 documents, eligibility assessment reports, historical contexts, and preservation plans.

### 2023 **LANL Historic Buildings and Structures Assessment Process**

2024 Under the April 2000 PA, there are several types of buildings and structures that are exempt from  
 2025 evaluation requirements. These include mobile and modular trailers and buildings,  
 2026 premanufactured buildings resting on poured concrete pads, structures with minimal or no visible  
 2027 surface manifestations (i.e., pits, underground storage tanks, material disposal areas, septic tanks,  
 2028 underground pipelines, and manholes), above-ground fuel tanks, wells and bore holes, road-block  
 2029 barriers and siren poles, and transformer and pressure relief valve stations.

2030  
 2031 Only a subset of LANL’s nonexempt buildings and structures, those dating from 1942 to 1956  
 2032 (Manhattan Project and early Cold War Era) and from 1957 to 1963 (the signing of the Limited  
 2033 Test Ban Treaty), are currently being identified and evaluated for effects from proposed  
 2034 Laboratory undertakings. Properties less than 50 years of age may also be identified and  
 2035 evaluated for their exceptional significance as defined in NHPA eligibility Criteria Consideration

2036 G. These include what has been called “key facilities” in the LANL SWEIS. Assessments of the  
2037 historic built environment at LANL include, but are not limited to, buildings, structures,  
2038 experimental areas, and discrete groupings of built environment features considered together as  
2039 being part of a potential historical district.

2040  
2041 Using the LANL Ten-Year Comprehensive Site Plan (TYCSP) list of excess buildings (i.e.,  
2042 buildings no longer deemed necessary for LANL mission activities) and the LANL cultural  
2043 resources database of historic Laboratory buildings, an inventory of properties subject for  
2044 evaluation for inclusion on the Register was developed. It is noted that certain types of properties  
2045 are exempt from review, as specified in the April 2000 PA, and were excluded from the inventory  
2046 list (see Section 9).

2047  
2048 As of October 2004, of the approximately 536 historic properties on the inventory, 255 are in the  
2049 process of being evaluated for their historic significance and eligibility for inclusion on the  
2050 Register. Of the remaining 281 properties, 189 have been evaluated (108 eligible and 81 not  
2051 eligible), with 92 properties still to be evaluated.

## 2052 **Register Eligibility Assessments**

2053 As mentioned above, Register eligibility assessments are being conducted for buildings and  
2054 structures built between 1942 and 1963. Initial eligibility assessments include both historical  
2055 background information and property descriptions. The assessment reports also include location  
2056 maps, photographs, and current floor plans of properties. The documentation of historic  
2057 properties and associated equipment is conducted in two stages: field visits and historical research  
2058 (specific methods are detailed below). During the initial field visit, cultural resource management  
2059 staff document each property’s architectural and engineering elements. The exterior and interior  
2060 of the properties are described following the format of LANL’s historic building survey form  
2061 (Appendix B). Moreover, representative views of the properties are digitally photographed,  
2062 significant equipment is noted, and a determination of overall physical integrity is made.

2063  
2064 In addition to the field visits, cultural resources staff conduct research regarding the history of  
2065 operations at each property. Research sources include as-built and historic engineering records,  
2066 information provided by current and former site workers, documents housed at LANL’s records  
2067 center and archives, and historic LANL photographs. Photographic resources may include general  
2068 facility photographs, aerials, and photographs of experiments. Preliminary historical information  
2069 is often available from LANL’s RFI [Resource Conservation and Recovery Act (RCRA) Facility  
2070 Investigation] work plan reports. The background information contained in these reports was  
2071 gathered by LANL’s ER Project during the 1990s in support of the characterization of LANL  
2072 TAs.

2073 Evaluation efforts are based on the application of the criteria for eligibility established in 36 CFR  
2074 Part 60. Additional evaluation guidance with special relevance to LANL’s cultural resources  
2075 program is included in the ACHP’s *Balancing Historic Preservation Needs with the Operation of*  
2076 *Highly Technical or Scientific Facilities* (1991). In general, buildings and structures must be 50  
2077 years old or older and meet at least one of the four criteria of eligibility to be eligible for inclusion  
2078 on the Register. Occasionally, a property, although less than 50 years old, is associated with an  
2079 event of exceptional significance and can be eligible for the Register under Criteria Consideration  
2080 G, “exceptionally important properties that have achieved significance within the last fifty years.”  
2081 See Appendix B, “Documenting Historic Buildings,” for a more in-depth discussion of the  
2082 criteria for eligibility.

2083 In compliance with Section 106 of the NHPA (as amended), eligibility assessment reports are  
2084 submitted to the DOE/NNSA for transmittal to the SHPO for review and concurrence. All  
2085 documents that the Cultural Resources Team produces are reviewed by S Division Classification  
2086 Group (S-7) prior to release.

## 2087 **Integrity**

2088 The LANL Cultural Resources Team has developed four integrity codes to assess potentially  
2089 eligible buildings and structures: (1) Excellent, (2) Good, (3) Fair, and (4) Poor. These are  
2090 described in more detail below. The integrity requirements for properties eligible under Criterion  
2091 A of 36 CFR Part 63, Determinations of Eligibility for Inclusion in The National Register of  
2092 Historic Places, are less stringent than for those properties eligible under Criterion C. A  
2093 historically significant property with a level 3 integrity could still be eligible, especially if an  
2094 element of historical uniqueness is involved. Properties eligible under Criterion C should have no  
2095 lower than a level 2 integrity. Level 4 integrity properties are not eligible for the Register.

## 2096 ***The Role of Historical Contexts in Eligibility Assessments***

2097 LANL cultural resources managers are currently conducting multiple property evaluations of  
2098 Manhattan Project and Cold War Era facilities in support of the DOE/NNSA's NHPA compliance  
2099 process. Recent evaluations have included an assessment of all properties under the  
2100 administrative control of LANL's ESA Division and an assessment of the Laboratory's remaining  
2101 Manhattan Project properties. Short- and long-term planning decisions at LANL—coupled with  
2102 the scheduled demolition of aging and obsolete facilities—are key factors in the decision to  
2103 evaluate LANL's historic properties as a contextually related grouping of buildings and structures  
2104 and not, as has been carried out in the past, on an individual basis.

2106 A key element of the multiple property documentation format is the development of a historical  
2107 context. Context statements provide information about historical patterns and trends and identify  
2108 themes, geographical areas, and chronological periods (U.S. NPS 1999). In order to determine  
2109 Register significance, LANL properties are viewed in light of their associated historical contexts  
2110 and themes. The multiple property documentation format and its contextual emphasis is an even  
2111 more important evaluation tool when a determination of "exceptional significance" is being  
2112 considered for a property built in the last 50 years (Criteria Consideration G)—assessing the  
2113 historical significance of recent properties is often difficult because the reviewer lacks the  
2114 historical perspective that comes with the passage of time.

2116 DOE has identified several corporate-level Cold War contexts. Some of the context topics have  
2117 little connection to LANL operations, such as Milling and Mining, Fissile Material Production,  
2118 and Power Administrations. DOE site-wide contexts that have strong associations with LANL's  
2119 Cold War mission include Nuclear Weapon Components and Assembly; Nuclear Weapon Design  
2120 and Testing; Nuclear Propulsion; Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy,  
2121 and Nuclear Science; and Energy and Environment. LANL is in the process of developing a  
2122 context statement for the Cold War period. Due to the complexity of subthemes associated with  
2123 LANL's primary Cold War context (Nuclear Weapons Research and Development), this context  
2124 statement will be written in two phases: 1) an "umbrella" context document and 2) specific  
2125 thematic documents. The umbrella context will present general chronological and geographical  
2126 information, identify historical trends, and place local activities in a broader national context. The  
2127 umbrella document will also list properties that are potentially associated with the overall context  
2128 statement and, most importantly, identify the key LANL themes. Thematic documents are more  
2129 in-depth historical discussions of identified themes, emphasizing local historical patterns, trends,

2130 and interrelationships. Ultimately, specific local themes will also be placed within the broader  
2131 history of LANL, the DOE, the nation, and the world.

2132 Identified LANL themes and subthemes, many spanning both the Manhattan Project and Cold  
2133 War periods, are listed below.

- 2134 • **Weapons Research, Development, Testing, and Stockpile Support:** Atomic Bomb,  
2135 Hydrogen Bomb, Technical Development (High Explosives, Initiators, Detonators,  
2136 Limited Production), Pacific Testing, NTS Testing, Treaty Verification, and Nuclear  
2137 Safety and Security
- 2138 • **Super Computing:** ENIAC, Monte Carlo, MANIAC, Stretch
- 2139 • **Reactor Technology:** Clementine, LOPO, SUPO, HYPO, Omega West, LAMPRE,  
2140 UHTREX, Kivas, Godiva, Rover/Nuclear Propulsion
- 2141 • **Biomedical/Health Physics:** Radiation Effects on Humans/Animals, Fatalities,  
2142 Standards, Exposure Limits, Shielding, Bioassay, Remote Handling, Medical Isotopes
- 2143 • **Strategic and Supporting Research:** Nuclear Science, Pioneering Physics, Energy  
2144 Research
- 2145 • **Environment/Waste Management:** Material Disposal Practices, Waste Management,  
2146 Clean-up, Demolition and Decommissioning
- 2147 • **Administrative and Social History:** General Administration of Facility, Social  
2148 Organization of Laboratory and Town, Security Practices, Civil Defense
- 2149 • **Architectural History:** Construction and Demolition History, Architectural Styles

## 2150 **Detailed Procedure for Documenting the Historic Built Environment**

### 2151 ***Property Databases and LANL Facility Management Information***

2152 The LANL cultural resources building database and the ENG-DCRM databases are accessed to  
2153 gain initial information about a building. Available information usually includes construction  
2154 dates, names of properties, original and current functions and lists of schematic drawings for each  
2155 property. The ‘Mother of All Databases’ (MOADs) also has information about the original name  
2156 and number of a property (if it has changed through time), the builder, construction type and  
2157 material, and additions and their construction dates.

### 2158 ***Engineering Drawings***

2159 Using the drawing lists from the MOADs, building plot plans, elevations, floor plans, structural  
2160 sections, roof details, and building additions are copied if available. Some of the building  
2161 drawings that are used in documenting a building are classified as “official use only” documents.  
2162 Prior to the inclusion of these drawings in written compliance documentation, they are reviewed  
2163 by S-7 to ensure that there is nothing “classified” in the drawings and that they are releasable to  
2164 the public. Copies of the original as-built elevations and floor plans and the most current as-built  
2165 elevations and floor plans are obtained for use during field visits to record and verify the building  
2166 architectural characteristics.

### 2167 ***Initial Background Research***

2168 ER Project RFI work plans are consulted for information pertaining to the original function of a  
2169 property, including any PRSs in the area that are also indicators of the operations in the building  
2170 or structure. The ER Project has conducted historical research on the operations taking place at  
2171 different outdoor experimental areas as well as buildings. The RFI work plans and associated  
2172 references are used as initial sources for historical background information.

**2173 Field Visits**

2174 Once initial background information is gathered, a walk-through of the facility is conducted. If  
2175 possible, the walk-through is done in the company of a person knowledgeable of the history of  
2176 the facility, such as a current or former site worker, as well as personnel from the Facility  
2177 Infrastructure and Revitalization Project (FIRP) Office. Digital photographs of the facility's  
2178 exterior and interior are taken and reviewed by an Authorized Derivative Classifier or personnel  
2179 from S-7 to make sure there are no classification issues. The digital photographs are used in the  
2180 initial historic building eligibility assessment report. Occasionally, photography is not allowed for  
2181 security reasons.

2182  
2183 An assessment of existing original equipment is conducted during the field visit. Digital  
2184 photographs are taken and reviewed by S-7. In the event that historically significant project  
2185 equipment exists in a building, a walk-through of the facility is scheduled with representatives  
2186 from the Bradbury Science Museum to see if there is anything that should be retained for future  
2187 exhibits. Such equipment is stored at LANL's cultural resources facilities or the museum's  
2188 warehouse. Personnel from S Division evaluate items of interest for public display or loan to  
2189 other institutions. Items removed from facilities are screened for contamination in accordance to  
2190 the policies of the FIRP Office and current facility management.

**2191 LANL Historic Building Survey Forms**

2192 Using information from field visits, historical research, and engineering drawings, a historic  
2193 building survey form is completed. Much of the information contained in the survey form is  
2194 architectural in nature (i.e., material types, doors, windows, foundations, walls, roofs, etc.), and  
2195 consulting architectural and engineering specialists gather this information as well as verify  
2196 LANL's as-built elevations and floor plans.

**2197 Historic Photographs**

2198 The Laboratory's photographic archives are searched for historic building photographs. These  
2199 photographs are used in the eligibility assessment reports and in the final documentation reports.  
2200 Historic photographs of particular interest are those showing the building(s) under construction  
2201 and in operation, associated experiments, and equipment.

**2202 Geographic Information System Maps**

2203 Cultural resources staff prepare Geographic Information System (GIS) maps as part of the  
2204 building documentation process. These maps show the location of the building(s) within their  
2205 specific LANL TA and in relationship to the rest of the Laboratory.

**2206 Oral History Program**

2207 Whenever feasible, oral history interviews are conducted to supplement the historical documents,  
2208 drawings, and photographs associated with the activities carried out in a historic property. Oral  
2209 interviews of current and former site workers are conducted according to LANL security  
2210 protocols and following professional oral history standards. Unless otherwise requested by the  
2211 participant, interviews are recorded and notes are also taken. The recorded interviews are retained  
2212 and archived at LANL, and interviews may be transcribed. Some of the information contained in  
2213 the interviews may not be available for public dissemination. If appropriate, verbatim transcripts  
2214 or interview notes are included in the appendices of the final documentation reports. In most  
2215 cases, information from the interview is also incorporated into the text of the report. All  
2216 interviewees sign a release form prior to being interviewed [see Appendix B]. This form

2217 stipulates that, although LANL retains recordings and notes, the interviewee can request copies of  
2218 recordings, notes, transcriptions, or other documents arising from the interview.

### 2219 **Historical Significance**

2220 In evaluating the historical significance and integrity of LANL properties, the Cultural Resources  
2221 Team looks at (1) the use history (the original and current function), (2) the building's  
2222 architecture, (3) the presence of any additions or modifications, and (4) the building's physical  
2223 integrity. Oral interviews are conducted with site workers to evaluate historical significance and  
2224 integrity. Information gathered through oral interviews conducted with site workers is also used  
2225 in the evaluation of historical significance and integrity.

### 2226 **Eligibility Criteria**

2227 Evaluation efforts are based on the application of the criteria for eligibility established in 36 CFR  
2228 Part 60. Additional evaluation guidance with special relevance to LANL's cultural resources  
2229 program is included in the ACHP's *Balancing Historic Preservation Needs with the Operation of*  
2230 *Highly Technical or Scientific Facilities* (1991). These criteria are detailed in Section 2. The  
2231 National Park Service has written several publications that list the criteria for eligibility and  
2232 provide guidance for the assessment of historic properties. Register Bulletin 15 explains how to  
2233 apply the Register Criteria for Evaluation. Selection criteria for recent properties are given in  
2234 Register Bulletin 22: *Guidelines for Evaluating and Nominating Properties that Have Achieved*  
2235 *Significance Within the Last Fifty Years*.

2236

2237 There are four general property types associated with LANL's historical themes:

- 2238 1. Laboratory-Processing Buildings such as high explosives and tritium processing and research  
2239 facilities.
- 2240 2. Administration Buildings such as office buildings and facilities housing cafeterias and health  
2241 and safety offices (change rooms and offices for radiological monitoring staff).
- 2242 3. Security Buildings and Structures such as guard stations, security lights, and fencing.
- 2243 4. Support Buildings and Structures such as warehouses, water tanks, utilities, and waste  
2244 treatment facilities.

### 2245 **Integrity Review for Buildings**

2246 The Cultural Resources Team has defined four integrity levels to assess potentially eligible  
2247 properties: 1) Excellent, 2) Good, 3) Fair, and 4) Poor.

- 2248 1. Excellent Integrity—the property is still closely associated with its original function and  
2249 retains integrity of location, design, setting, workmanship, materials, feeling, and association.  
2250 Little or no remodeling has occurred to the property and all remodeling is in keeping with its  
2251 associated historic context and significant period of use.
- 2252 2. Good Integrity—the property's interior and exterior both retain historic feeling and character  
2253 but some of the original significant equipment may be gone. The property may have had  
2254 minor remodeling.
- 2255 3. Fair Integrity—a property in this category should retain original location, setting, association,  
2256 and exterior design. All associated interior significant equipment may be absent but the  
2257 essential question is "Is this property still recognizable to a contemporary of the building's  
2258 historic period?" This question can be answered by reference to historic photographs and by

2259 conducting visits with former occupants who had seen the building in its original functioning  
2260 condition.

2261 4. Poor Integrity—the property has no connection with the historically significant setting,  
2262 feeling, and context. Major changes to the property have occurred. The property would be  
2263 largely unrecognizable by reference to historic photographs and by conducting visits with  
2264 former occupants.  
2265

2266 The integrity requirements for properties eligible under Criteria A and B are less stringent than  
2267 for those properties eligible under Criterion C. A historically significant property with a level 3  
2268 integrity could still be eligible, especially if an element of historical uniqueness is involved.  
2269 Properties eligible under Criterion C should have no lower than a level 2 integrity. Level 4  
2270 integrity properties are not eligible for the Register.

## 2271 **Curation of Artifacts, Records, and Photographs**

2272 In accordance with Federal legislation 36 CFR Part 79, “Curation of Federally Owned and  
2273 Administered Archaeological Collections,” significant historical artifacts and architectural  
2274 elements, if not contaminated, are retained and curated at an appropriate LANL facility. Historic  
2275 artifacts, including scientific equipment and building fixtures, are curated at LANL’s Bradbury  
2276 Science Museum and at LANL’s cultural resources facilities. Those items at the Bradbury  
2277 Science Museum become the responsibility of the Museum. LANL drawings are usually archived  
2278 on microfiche cards and stored at the LANL engineering records office, although some hard  
2279 copies of drawings have been archived at LANL’s archives and records center. LANL  
2280 photographs, including original negatives, are archived at both the main photographic facility and  
2281 at the LANL archives and records center. The largest single repository for historic LANL  
2282 documents is the archives and records center; however, pertinent historical documents are  
2283 sometimes retained by individual LANL organizations and are also located off-site at other DOE  
2284 facilities, Federal records repositories, and at the National Archives II in College Park, Maryland.

## 2285 **Exceptionally Significant Historic Buildings and Structures to be** 2286 **Retained and Managed**

### 2287 ***Development of Preservation Plans for Identified Properties***

2288 Twenty-eight (28) exceptionally significant historic buildings and structures in 14 separate  
2289 locations at LANL have been identified as candidates for long-term retention and management.  
2290 These include the following:

- 2291 • TA-6-37 “Concrete Bowl”
- 2292 • TA-6 “Bomb Cover” (LA 131234-C)
- 2293 • TA-8-1, Gun Site “Little Boy Design Building,” along with an associated “Shop and  
2294 Storage Building” [TA-8-2] and “Laboratory Building” [TA-8-3]
- 2295 • TA-12-4, “Hexagonal Firing Pit”
- 2296 • TA-16-58 “HE Magazine”
- 2297 • TA-16-430, “HE Pressing Building,” with associated rest houses and corridors [TA-16-  
2298 435, -437]
- 2299 • TA-16-516, V-Site “Trinity Assembly Building” and an associated “Equipment  
2300 Building” [TA-16-517]
- 2301 • TA-16-1451, “Back Gate Guard Station”

- 2302 • TA-18 Complex: TA-18-1, "Slotin Criticality Accident Building;" TA-18-2, "Battleship
- 2303 Building Control Bunker;" TA-18-23, "Critical Assembly Building, Casa 1;" TA-18-26,
- 2304 "Hillside Vault;" TA-18-29, "Pond Cabin"
- 2305 • TA-22-1, "Fat Man Assembly Building"
- 2306 • TA-33-27, "Guard House;" TA-33-28, "Water Tower"
- 2307 • TA-41-1, -2, -6, and the north half of -4, "Underground Vault/Ice House Complex"
- 2308 • TA-60-17, -19, "Assembly Building and Rack Tower Complex"
- 2309 • TA-73-15, "East Gate Guard Tower"

2310

2311 Several of these properties are discussed below in Section 15 in relation to a potential Manhattan  
 2312 Project National Historic Landmark District.

2313

2314 Preservation plans for identified properties will be developed by LANL staff and reviewed by the  
 2315 SHPO. These plans will identify regular inspection and maintenance schedules, funding sources,  
 2316 property managers, and acceptable reuse functions. While repairing or maintaining the properties,  
 2317 LANL will follow guidance published by the Department of Interior: *The Secretary of the*  
 2318 *Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*  
 2319 (1990).

### 2320 **Strategies for Adaptive Reuse**

2321 In accordance with Section 110 of the NHPA, other uses for historically significant,  
 2322 noncontaminated properties should be developed as an alternative to demolition. Alternate uses  
 2323 could include office space, storage, and interpretative areas. Other alternate uses at LANL are  
 2324 being examined. For example, the "back gate" guard station is being considered for use as a  
 2325 visitor information center in the summer months, and the "front gate" guard tower has been  
 2326 proposed for use as the focal point for an improved Los Alamos County Gateway park.

### 2327 **Identification of Long-Term Maintenance Requirements for Exceptionally** 2328 **Significant Buildings and Structures**

2329 Buildings and structures at LANL that are considered to be of exceptional historic significance,  
 2330 such as those included in the potential Manhattan Project National Historic Landmark described  
 2331 below, will each be maintained in accordance with individual preservation plans as described  
 2332 above. Because of the special long-term maintenance and protection requirements engendered by  
 2333 their status as historic properties of exceptional significance, it may be prudent to assign these  
 2334 buildings and structures to the oversight of a single entity at LANL. This individual's  
 2335 organization would arrange to have the duties of long-term maintenance and monitoring of these  
 2336 buildings and structures performed by appropriate LANL staff and technical consultants (such as  
 2337 a historical architect) in coordination with the cultural resources program.

## 2338 **Section 11. Methods, Procedures, and Goals for Archaeological** 2339 **Resources Management at LANL**

2340 All archaeological work conducted at LANL is accomplished within a rigorous set of standards,  
 2341 procedures, and goals. This includes archaeological fieldwork [survey, excavation, field checks,  
 2342 the monitoring of project activities, and the use of a Global Positioning System (GPS)],  
 2343 laboratory work [washing, labeling, analysis, and long-term storage of artifacts], compliance  
 2344 review, the preparation of archaeological reports, and other aspects of cultural resources  
 2345 management involving the use of archaeological skills and personnel.

2346 **Significance Standards for Register Evaluation of Archaeological**  
 2347 **Sites at LANL**

2348 A general research design (significance standards) for the conduct of archaeological work at  
 2349 LANL was developed in association with excavations and laboratory analyses as part of the  
 2350 ongoing DOE/NNSA Land Conveyance and Transfer Project. This overarching research design  
 2351 was reviewed by the SHPO and the ACHP and was provided to culturally affiliated Native  
 2352 American tribes. This general research design will be modified as may be necessary after the  
 2353 Land Conveyance and Transfer Project is completed in 2007.

2354  
 2355 The general archaeological research design includes the following elements and numbered  
 2356 chapters listed below. A set of research questions is provided at the end of each chapter and is  
 2357 discussed in relation to the following time periods: Paleoindian, Archaic, Developmental,  
 2358 Coalition, Classic, Historic Pajarito Plateau (1600–1890), and Homestead (1890–1943):  
 2359

2360 **RESEARCH CONTEXT**

- 2361 1. Introduction  
 2362 2. Purpose and Scope of the Research Design  
 2363 3. Bedrock Geology  
 2364 4. Natural Environment  
 2365 5. Culture History  
 2366 6. Previous Archaeological Research at LANL

2367 **RESEARCH DOMAINS**

- 2368 7. Chronometrics  
 2369 • Relative  
 2370 ○ Stratigraphy and soil development; Projectile point typology; Ceramic seriation  
 2371 and cross-dating  
 2372 • Chronometric  
 2373 ○ Radiocarbon; Dendrochronology; Archaeomagnetism; Obsidian hydration;  
 2374 Luminescence  
 2375 8. Geoarchaeology  
 2376 • Geomorphic and site formation processes  
 2377 • Geophysical studies  
 2378 9. Paleoenvironment  
 2379 • Tree-rings  
 2380 • Pollen  
 2381 • Phytoliths  
 2382 • Packrat middens  
 2383 • Archaeological sites  
 2384 • Faunal remains  
 2385 • Stable carbon isotopes  
 2386 • Soil development and geomorphic history  
 2387 10. Settlement Patterns  
 2388 • Land use  
 2389 • Community patterns  
 2390 • Site layout (including construction history)  
 2391 • Site structure (room, feature, activity area, middens, etc.)  
 2392 11. Subsistence and Seasonality  
 2393 • Plant remains  
 2394 • Pollen remains

- 2395 • Faunal remains
- 2396 • Coprolites
- 2397 • Blood residue analysis
- 2398 • Artifactual: chipped stone, ground stone, ceramic
- 2399 12. Technology
  - 2400 • Chipped stone
  - 2401 • Ground stone
  - 2402 • Ceramics
  - 2403 • Architecture
  - 2404 • Features
- 2405 13. Characterization of Raw Materials
  - 2406 • Embedded, direct or indirect procurement
  - 2407 • Trace-element analysis: x-ray fluorescence, neutron activation analysis
  - 2408 • Petrographic analysis
  - 2409 • Microprobe analysis
- 2410 14. Temporal Indicators of Cultural Interaction
  - 2411 • Paleoindian, Archaic, Developmental, Coalition, Classic, early Historic Pajarito
  - 2412 Plateau, and Homestead periods
- 2413 15. Implementing the Research Design
- 2414 **REFERENCES CITED**
- 2415

## 2416 **LANL-Specific Excavation Project Research Designs and Data**

## 2417 **Recovery Plans and Associated Comprehensive Agreements**

2418 In addition to the general archaeological research design described above, each individual  
 2419 excavation project will have a research design and data recovery plan that addresses those issues  
 2420 and questions pertinent to the sites and features being excavated. These research designs are  
 2421 reviewed by the SHPO.

2422 Along with the archaeological research designs and data recovery plans, comprehensive  
 2423 agreement(s) for intentional excavation under NAGPRA will be prepared for all culturally  
 2424 affiliated tribes.

## 2425 **LANL Archaeological Baseline Studies**

2426 A series of baseline studies have been prepared, or are in the process of being prepared, that serve  
 2427 to support the ongoing Land Conveyance and Transfer excavations, but which will also aid in the  
 2428 formulation of the general and specific archaeological research designs. In each case the baseline  
 2429 study has been prepared by a recognized expert.

2430 These baseline studies are listed in Appendix B. Because they have considerable application to  
 2431 Pueblo neighbors and to land-holding agencies outside of LANL, they will be placed together  
 2432 into a separate volume as part of the DOE/NNSA Land Conveyance and Transfer Project  
 2433 excavation series.  
 2434

## 2435 **Archaeological Field Survey Manual**

2436 A manual has been prepared to guide the conduct of archaeological survey at LANL, similar in  
 2437 scope and purpose to the building assessment process described in Section 10. The manual covers

2438 both archaeological materials and general safety considerations. The manual includes the  
2439 following sections:

- 2440
- 2441 • Prefield Review
- 2442 • Field Operating Procedures
- 2443     ○ Survey Technique
- 2444     ○ Cultural Property Definitions
- 2445     ○ Site Recording Procedures
- 2446 • Laboratory Procedures
- 2447 • Postfield Reporting
- 2448 • Appendix A: GPS Procedures
- 2449 • Appendix B: Infield Artifact Analysis Coding Sheets
- 2450 • Appendix C: Lithic Artifact Dictionary
- 2451 • Appendix D: Site Forms
- 2452 • Appendix E: Site Map Conventions
- 2453 • Appendix F: Style Guide Sheet
- 2454

2455 Aspects of the manual are covered in the Heritage Resources Archaeological Survey  
2456 implementing procedure (see Section 25 and Appendix B).

## 2457 **Archaeological Excavation—Field Procedures Manual**

2458 A general field procedures manual was prepared for use in the Land Conveyance and Transfer  
2459 Project excavations, and serves as the basis for excavation projects at LANL. The Land  
2460 Conveyance and Transfer Project included the excavation of Archaic period lithic scatters,  
2461 Ancestral Pueblo roomblocks, fieldhouses, artifact scatters, and agricultural sites.

2462  
2463 Prefield work procedures include evaluations to assess geomorphic context and integrity and may  
2464 include the installation of a series of humidity sensors at specified depth intervals a year prior to  
2465 project fieldwork, such as was conducted for excavations in the White Rock and Rendija Canyons  
2466 tracts. In addition, ground-penetrating radar surveys are conducted at selected sites to identify  
2467 subsurface features.

2468  
2469 A series of recording forms were devised for use with the excavations and are applicable to most  
2470 sites at LANL. These forms include

- 2471 • Area Definition Form
- 2472 • Area Log
- 2473 • Auger Form
- 2474 • Burial Form
- 2475 • Daily Field Journal
- 2476 • Field Specimen (FS) Catalog
- 2477 • Feature Form
- 2478 • Feature Log
- 2479 • GPS Form
- 2480 • Grid Level Excavation Form
- 2481 • Instrument Mapping Form
- 2482 • Room Summary Form
- 2483 • Sample Log
- 2484 • Stratigraphy Log
- 2485 • Stratigraphy Unit Summary Form

2486 The field procedures explain the purpose and proper use of these forms. In addition, the field  
2487 procedures manual describes techniques specific to each of the four main site types: artifact  
2488 scatters, roomblocks, fieldhouses, agricultural sites. The manual concludes with a statement on  
2489 the Native American Monitors present during the excavations. It refers the reader to the  
2490 NAGPRA intentional excavation agreement for relevant policies and procedures when potential  
2491 NAGPRA discoveries are made.

2492  
2493 Aspects of the manual are covered in the implementing procedure for Cultural Resources  
2494 Archaeological Excavation and Laboratory Procedures (see Section 25 and Appendix B).

## 2495 **General Laboratory Procedures**

2496 Archaeological laboratory analyses are currently performed in Building 14 in TA-21, in  
2497 proximity to the offices of the LANL cultural resources staff. A general set of laboratory  
2498 procedures was prepared for use in the Land Conveyance and Transfer Project excavations. They  
2499 will be modified and updated as needed for future projects. The laboratory procedures include the  
2500 following elements:

- 2501 • Checking artifacts in
- 2502 • Washing
- 2503 • Computer versions of the FS catalogs
- 2504 • Re-bagging and creating new bags
- 2505 • Photographs
- 2506 • Flotation samples processing
- 2507 • Human remains and NAGPRA items

2508  
2509 As with the fieldwork, a number of record logs are necessary for data tracking and for quality  
2510 control as part of the duties of laboratory personnel. These include logs for processed flotation  
2511 samples, a log listing bags or samples created in the laboratory (as opposed to field bags and  
2512 samples), a daily log listing data conflicts and questions requiring consultation and resolution  
2513 with field personnel, and logs to track human remains and NAGPRA-related grave associations  
2514 and objects. And of course, one of the more important tasks of the archaeological laboratory is to  
2515 maintain an inventory and tracking system for all notebooks and accompanying paperwork that  
2516 comes in from the field.

2517  
2518 Once artifact analyses and data recording are completed—including sketches and photographs as  
2519 appropriate—artifacts are placed into appropriate containers for long-term curation and storage.  
2520 Other duties performed by laboratory staff include the maintenance of field vehicles logs and the  
2521 maintenance and updating of lists of vendors from which to purchase necessary field and  
2522 laboratory supplies.

2523  
2524 The Laboratory was tasked with the respectful processing, analysis, and curation of human  
2525 remains and other NAGPRA-related items. Under the terms of the NAGPRA intentional  
2526 excavation comprehensive agreement for the Land Conveyance and Transfer Project, culturally  
2527 affiliated tribes (in this particular case the Pueblos of San Ildefonso and Santa Clara, and  
2528 potentially also the Jicarilla Apache Tribe) had the right to request an in-the-laboratory or on-the-  
2529 archaeological-site review of NAGPRA remains and objects at any time they so desired. Actual  
2530 analyses of the human remains were performed by a qualified professional human osteologist,  
2531 and human remains and other NAGPRA items were stored in a safe, clean, and secure area within  
2532 the laboratory facility. The NAGPRA remains and objects will then be repatriated to the

2533 culturally affiliated tribe when agreed upon with the tribe and with LASO and after publication of  
2534 a notice to repatriate in the Federal Register.

2535

2536 Aspects of the manual are covered in the implementing procedure for Cultural Resources  
2537 Archaeological Excavation and Laboratory Procedures (see Section 25 and Appendix B).

## 2538 **PART III. NHPA Compliance: Section 110**

### 2539 **Section 12. Overview of the NHPA Section 110**

#### 2540 **Section 110 of the NHPA**

2541 Section 110 of the NHPA sets out the broad historic preservation responsibilities of Federal  
2542 agencies and is intended to ensure that historic preservation is fully integrated into the ongoing  
2543 programs of all Federal agencies. It makes explicit the Federal agency's responsibility for  
2544 identifying and protecting historic properties and avoiding unnecessary damage to them. Section  
2545 110 also charges each Federal agency with the responsibility for considering projects and  
2546 programs that further the purposes of the NHPA, and it declares that the costs of preservation  
2547 activities are eligible project costs in all undertakings conducted or assisted by a Federal agency.  
2548

2549 The 1992 additions to Section 110 of NHPA set out some specific benchmarks for Federal agency  
2550 preservation programs:

- 2551 • Historic properties under the jurisdiction or control of the agency are to be managed and  
2552 maintained in a way that considers the preservation of their historic, archeological,  
2553 architectural, and cultural values.
- 2554 • Historic properties not under agency jurisdiction or control but potentially affected by  
2555 agency actions are to be fully considered in agency planning.
- 2556 • Agency preservation-related activities are to be carried out in consultation with other  
2557 Federal, state, and local agencies, Indian tribes, and the private sector.
- 2558 • Agency procedures for compliance with Section 106 of the Act are to be consistent with  
2559 regulations issued by the ACHP.
- 2560 • An agency may not grant assistance or a license or permit to an applicant who damages  
2561 or destroys historic property with the intent of avoiding the requirements of Section 106,  
2562 unless specific circumstances warrant such assistance.  
2563

2564 Seven specific standards for Section 110 were published in the Federal Register in April 24,  
2565 1998, along with recommendations for the implementation of these standards. These standards  
2566 recognize that the preservation and use of historic properties and their careful consideration in  
2567 agency planning and decision-making are in the public interest, are consistent with the declaration  
2568 of policy set forth in the NHPA, and must be a fundamental part of the mission of any Federal  
2569 agency. These standards and guidelines are intended to assist Federal agency personnel and the  
2570 agency head in carrying out their policies, programs, and projects in a manner consistent with the  
2571 requirements and purposes of Section 110 of the NHPA, related statutory authorities, and existing  
2572 regulations and guidance.  
2573

2574 An agency should use these standards and guidelines, and consultation with the Secretary and  
2575 others, to ensure that the basic individual components of a preservation program called for in  
2576 Section 110 are in place. The preservation program should also be fully integrated into both the

2577 general and specific operating procedures of the agency. The agency's preservation program  
2578 should interact with the agency's management systems to ensure that historic preservation issues  
2579 are considered in decision-making. The program should try to ensure that the agency's officials,  
2580 employees, contractors, and other responsible parties have sufficient budgetary and personnel  
2581 resources needed to identify, evaluate, nominate, manage, and use the historic properties under  
2582 agency care or affected by agency actions.

2583  
2584 These standards are listed below:

2585 **Standard 1.** Each Federal agency establishes and maintains a historic preservation program that is  
2586 coordinated by a qualified Preservation Officer and that is consistent with and seeks to advance  
2587 the purposes of the NHPA. The head of each Federal agency is responsible for the preservation of  
2588 historic properties owned or controlled by the agency.

2589 **Standard 2.** An agency provides for the timely identification and evaluation of historic properties  
2590 under agency jurisdiction or control and/or subject to effect by agency actions.

2591 **Standard 3.** An agency nominates historic properties under the agency's jurisdiction or control to  
2592 the Register.

2593 **Standard 4.** An agency gives historic properties full consideration when planning or considering  
2594 approval of any action that might affect such properties.

2595 **Standard 5.** An agency consults with knowledgeable and concerned parties outside the agency  
2596 about its historic preservation related activities.

2597 **Standard 6.** An agency manages and maintains historic properties under its jurisdiction or control  
2598 in a manner that considers the preservation of their historic, architectural, archeological, and  
2599 cultural values.

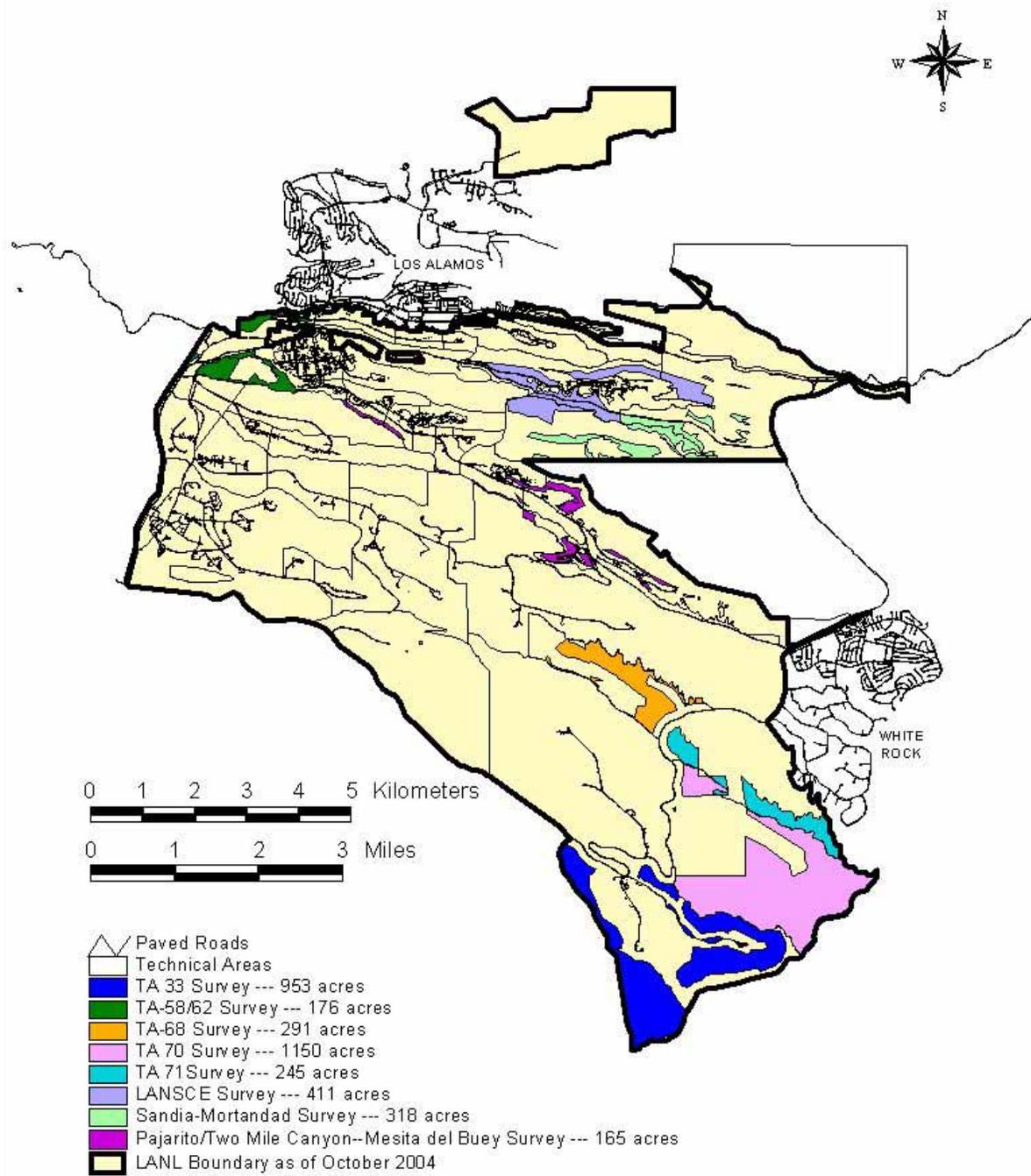
2600 **Standard 7.** An agency gives priority to the use of historic properties to carry out agency  
2601 missions.

### 2602 **Section 13. Archaeological Survey at LANL and Survey on Non-** 2603 **LANL Lands**

2604 Approximately 86% of LANL has been systematically surveyed for archaeological resources. In  
2605 descending order of acreage, the TAs with portions lacking survey include TA-33, TA-5, TA-71,  
2606 and TA-68.

2607  
2608 It would be prudent to proactively survey the remaining unsurveyed 14% of LANL land so as to  
2609 enhance land-use planning and so as to prevent unwelcome delays in project execution due to  
2610 lengthy SHPO and Native American consultations, and cultural resources mitigation measures  
2611 that may be required by the SHPO and the ACHP. Figure 13.1 depicts the unsurveyed areas and  
2612 divides them into seven separate parcels. In ascending acreage these include a combined parcel  
2613 including portions of Pajarito and Two Mile Canyons along with Mesita del Buey (165 acres); a  
2614 combined TA-58 and TA-62 parcel (176 acres); a TA-71 parcel (245 acres); a TA-68 parcel (291  
2615 acres); a combined parcel containing portions of Sandia and Mortandad Canyons (318 acres); a  
2616 survey of several areas around the Los Alamos Neutron Science Center in and around TA-53 (411  
2617 acres); a TA-33 parcel (953 acres); and a TA-70 parcel (1150 acres). In addition to these seven  
2618 survey parcels, there is a considerable need to resurvey an area of approximately 52 acres in and  
2619 around Tsirege Pueblo that has not been completed to modern standards.

2620



2621  
2622

2623  
2624

**Figure 13.1. Unsurveyed areas at LANL.**

2625 It is noted that the 86% survey coverage at LANL includes a number of surveys conducted as part  
 2626 of the LANL ER Program primarily between 1991 and 1995. While these survey project areas  
 2627 and their associated sites are included as part of the overall survey database for LANL project  
 2628 review, reports have not yet been completed and submitted to SHPO for 13 of these surveys. A  
 2629 similar situation exists for a survey conducted on behalf of the LANL RCRA program. These  
 2630 survey projects are listed in Table 2 by affected TA, associated ER Operable Unit number, and  
 2631 the approximate number of associated archaeological sites. A map depicting these survey areas is  
 2632 provided as Figure 13.2. It is noted that some of the sites have since been included as part of other  
 2633 projects and project reports.

2634 **Table 2. LANL Archaeological Survey Projects Lacking Reports as of October 2004**

Technical Area/Location	ER Operable Unit No.	Site Numbers (approx.)
TA-6, -22, -40	1111	12
TA-8, -9, -69	1157	28
TA-14, -67	1085	9 (+5 Bldgs)
TA-15	1086	101
TA-16	1082	39
TA-36	1130	69
TA-39	1132	39
TA-49	1144	84
TA-53	1100	20
TA-54	1148	19
Los Alamos/Pueblo Canyons	1049	30
Lower Los Alamos Canyon	1049	8 + Otowi Bridge Nat. Register Historic District
Mortandad Canyon	1049	3
TA-14, -15, -67	RCRA	27 (3 tested)

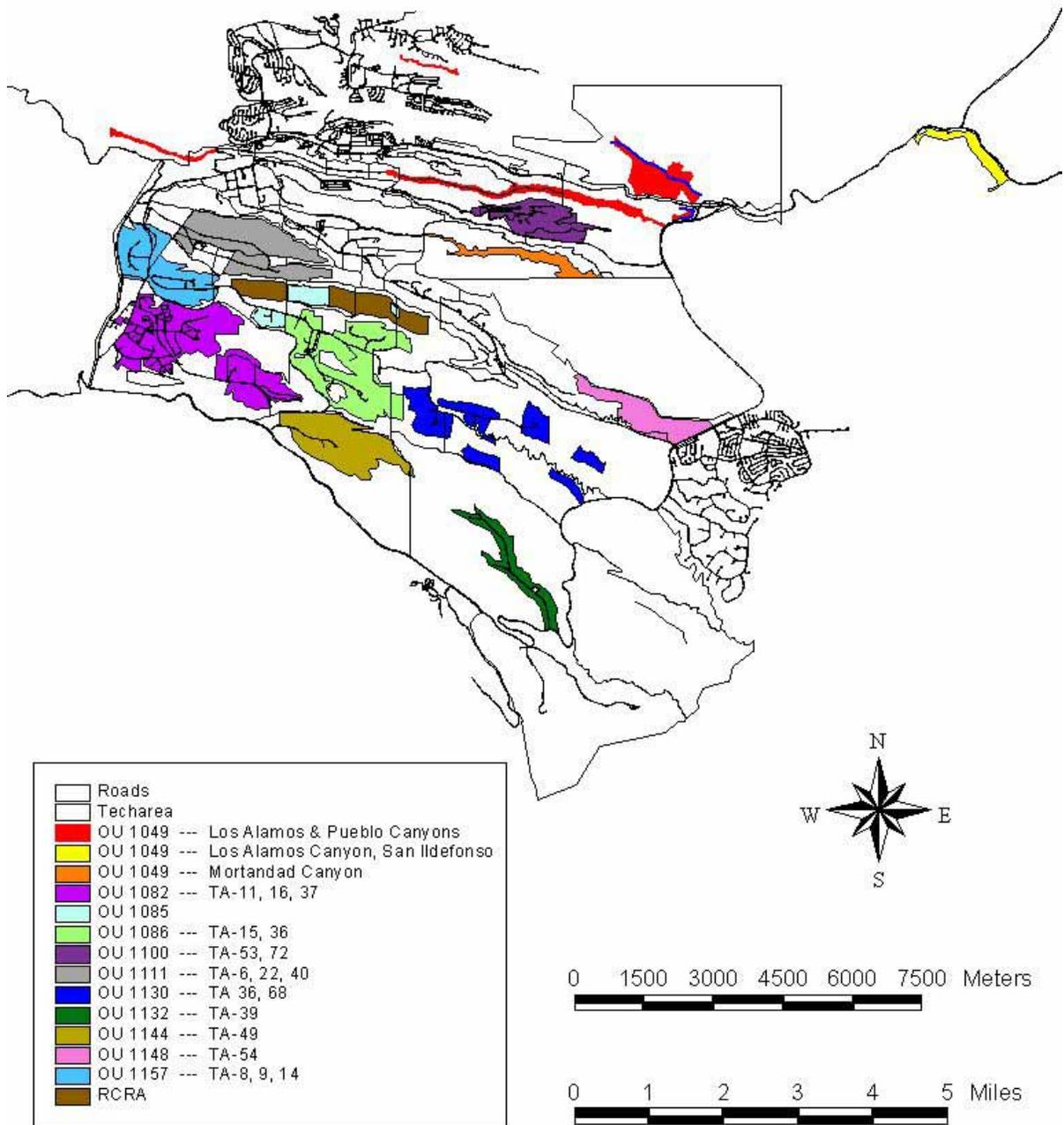
2635

2636 LASO will meet with the SHPO to discuss and schedule the completion and submission of these  
 2637 survey reports, a task anticipated to begin in FY 2006.

2638

2639 Any future project undertakings at LANL proposed for the 14% of unsurveyed areas must first be  
 2640 subject to systematic archaeological survey as described in Section 11. A detailed report will be  
 2641 submitted to the SHPO, including the evaluation of discovered sites for the Register, and a  
 2642 determination of the effects of the proposed project on these sites, as required by 36 CFR 800.  
 2643 The results of this consultation must be taken into account in project planning, and any adverse  
 2644 effects will require consideration by the SHPO and the ACHP and will likely require resolution.  
 2645

2646 A similar situation exists for archaeological survey that was conducted in support of the Cerro  
 2647 Grande Rehabilitation Project tree thinning activities during the period of FY 2001 through FY  
 2648 2004. Because of the urgency of tree thinning and other post-Cerro Grande fire rehabilitation  
 2649 measures, an arrangement was made with the SHPO under the emergency provisions of the  
 2650 NHPA. This strategy allowed LANL archaeologists to survey and locate archaeological sites in  
 2651 advance of rehabilitation activities and to mark archaeological sites for avoidance during these  
 2652 activities. The sites were marked with string and flagging tape, were located using GPS  
 2653 technology, and brief notes regarding the nature of the sites were put on a single page field form  
 2654 (Figure 13.3). The agreement with the SHPO was that detailed archaeological site recording and  
 2655 reporting of the sites using New Mexico Archaeological Resources Management System  
 2656 standards and their reporting to the SHPO would be delayed until after the rehabilitation project



2657  
2658  
2659  
2660

**Figure 13.2. ER Project survey areas.**



2661

2662 **Figure 13.3. Cultural resources staff surveyed and located archaeological sites**  
 2663 **before Cerro Grande rehabilitation activities.**

2664 had been completed. A total of 60 of the approximately 460 newly identified archaeological sites  
 2665 have been fully recorded as of October 2004. It is anticipated that the remaining 400 sites will be  
 2666 satisfactorily recorded and submitted to the SHPO during the next several years.

2667

2668 Occasionally the LANL cultural resources management staff is tasked to perform archaeological  
 2669 surveys on adjacent Federal, state, municipal, or tribal lands in support of LANL initiatives.  
 2670 Examples include surveys for specific locations on U.S. Forest Service land proposed for studies  
 2671 of paleoseismic hazards, and the placement of characterization wells within reservation lands of  
 2672 the Pueblo of San Ildefonso. Since these surveys are Federal undertakings, they are performed to  
 2673 LANL standards.

2674

2675 **Section 14. Archaeological Collections and Laboratory-Era**  
 2676 **Equipment and Artifacts**

2677 In accordance with Federal legislation 36 CFR Part 79, "Curation of Federally Owned and  
 2678 Administered Archaeological Collections," significant historical artifacts and architectural  
 2679 elements, if not contaminated, are retained and curated at an appropriate facility, such as a  
 2680 museum. With five major exceptions, all archaeological collections from LANL are currently  
 2681 maintained and curated in the Laboratory of Anthropology at the Museum of New Mexico. The  
 2682 first exception includes collections made prior to the creation of LANL in 1943, which are housed  
 2683 at the Smithsonian Institution and other repositories. These earlier collections are outside of the  
 2684 Federal legal mandate of DOE/NSSA.

2685 The second exception is collections gathered at LANL during the course of a major survey  
2686 conducted throughout the Pajarito Plateau during the course of the Pajarito Archaeological  
2687 Research Project (PARP) by the University of California at Los Angeles (UCLA) during the  
2688 period of 1977 through 1985. These collections are still housed at UCLA. However, the PARP  
2689 collections from LANL land are the responsibility of DOE/NNSA and will be reacquired when  
2690 UCLA has completed its ongoing studies of the collection.

2691  
2692 The third exception includes collections obtained during archaeological excavations conducted at  
2693 LANL in support of the DOE/NNSA Land Conveyance and Transfer Project. These excavations  
2694 began in FY 2002 and are scheduled for completion in FY 2006. The collections (Figures 14.1  
2695 and 14.2) and associated field and laboratory records are currently housed in Building 14 in TA-  
2696 21. In addition to artifacts, these collections include faunal and macrobotanical specimens,  
2697 processed flotation samples (Figure 14.3), and other similar materials.  
2698



2699  
2700 **Figure 14.1. Projectile points from surveys conducted during Land Conveyance**  
2701 **and Transfer Project.**



2702  
2703 **Figure 14.2. Sherds from surveys conducted during Land Conveyance and**  
2704 **Transfer Project.**



2705

2706 **Figure 14.3. Flotation samples from surveys conducted during Land Conveyance**  
 2707 **and Transfer Project.**

2708 The fourth exception includes field survey forms, maps, and other actively used records created  
 2709 during LANL cultural resources management activities since the 1950s. These and a small  
 2710 number of exhibited artifacts and unprovenienced artifacts and other materials serving as teaching  
 2711 and comparative collections are presently housed in Building 210 at TA-21.

2712

2713 The fifth exception concerns post-1943 Laboratory artifacts (Figures 14.4 and 14.5). Appropriate  
 2714 laboratory artifacts and equipment associated with historically significant activities, buildings,  
 2715 and structures at LANL are identified, recorded, and occasionally removed prior to the removal or  
 2716 demolition of the property (see Section 10). Such artifacts and equipment are typically evaluated  
 2717 and collected in conjunction with the Bradbury Science Museum. Currently, a small number of  
 2718 such artifacts are being curated in a transportable container adjacent to Building 210 at TA-21.  
 2719 The Museum assumes management responsibilities for those items it chooses to display or curate.  
 2720 These items may have interpretive or educational value as exhibits within local, state, or national  
 2721 museums, including for the Bradbury Science Museum and other contexts at LANL. For  
 2722 example, the Bradbury Science Museum has loaned two Project Rover engines to the NTS  
 2723 Atomic Testing Museum. These engines, named Phoebus and Kiwi, were part of an experimental  
 2724 program during the 1950s to 1972 to design a nuclear reactor capable of powering rockets in  
 2725 space.

2726

2727 Both the PARP and the Land Conveyance and Transfer Project excavations created large  
 2728 archaeological collections. These and other collections are permanently curated in the Laboratory  
 2729 of Anthropology at the Museum of New Mexico. There are also small collections of historic  
 2730 Manhattan Project and Cold War artifacts presently being curated at LANL itself. These are  
 2731 currently being evaluated by the Bradbury Museum and the LANL Cultural Resource Team for  
 2732 significance and for their potential use in displays at LANL.

2733



2734  
2735

**Figure 14.4. “Flattop” criticality assembly apparatus at TA-18.**



2736  
2737

**Figure 14.5. Omega West Reactor Control Panel at TA-2.**

2738 **Section 15. Potential “Project Y” Manhattan Project and Los**  
2739 **Alamos National Laboratory Ancestral Pueblo**  
2740 **National Historic Landmarks**

2741 NHL Districts are designated by the Secretary of the Interior under the authority of the Historic  
2742 Sites Act of 1935, which authorizes the Secretary to identify historic and archaeological sites,  
2743 buildings, and objects which “possess exceptional value as commemorating or illustrating the  
2744 history of the United States.” In the nearly 70 years (2004) since the enactment of the Historic  
2745 Sites Act, approximately 2500 properties nationwide have been designated as NHL Districts, with  
2746 43 of these being in New Mexico.

2747  
2748 As eloquently noted in the U.S. Department of the Interior guide entitled *National Historic*  
2749 *Landmarks: Illustrating the Heritage of the United States*: “National Historic  
2750 landmarks...illuminate our rich and complex national story that spans more than 10,000 years,  
2751 from the arrival of the ancient hunters who crossed into Alaska from Asia to the exploration of  
2752 outer space. The story is there to be told in Presidential homes, on stretches of arctic tundra, in  
2753 our rich seafaring and maritime heritage, on battlefields, at pueblo ruins and earthen mounds, in  
2754 the nation’s industrial facilities, in historic towns and communities, and in our masterpieces of  
2755 architecture and engineering.”

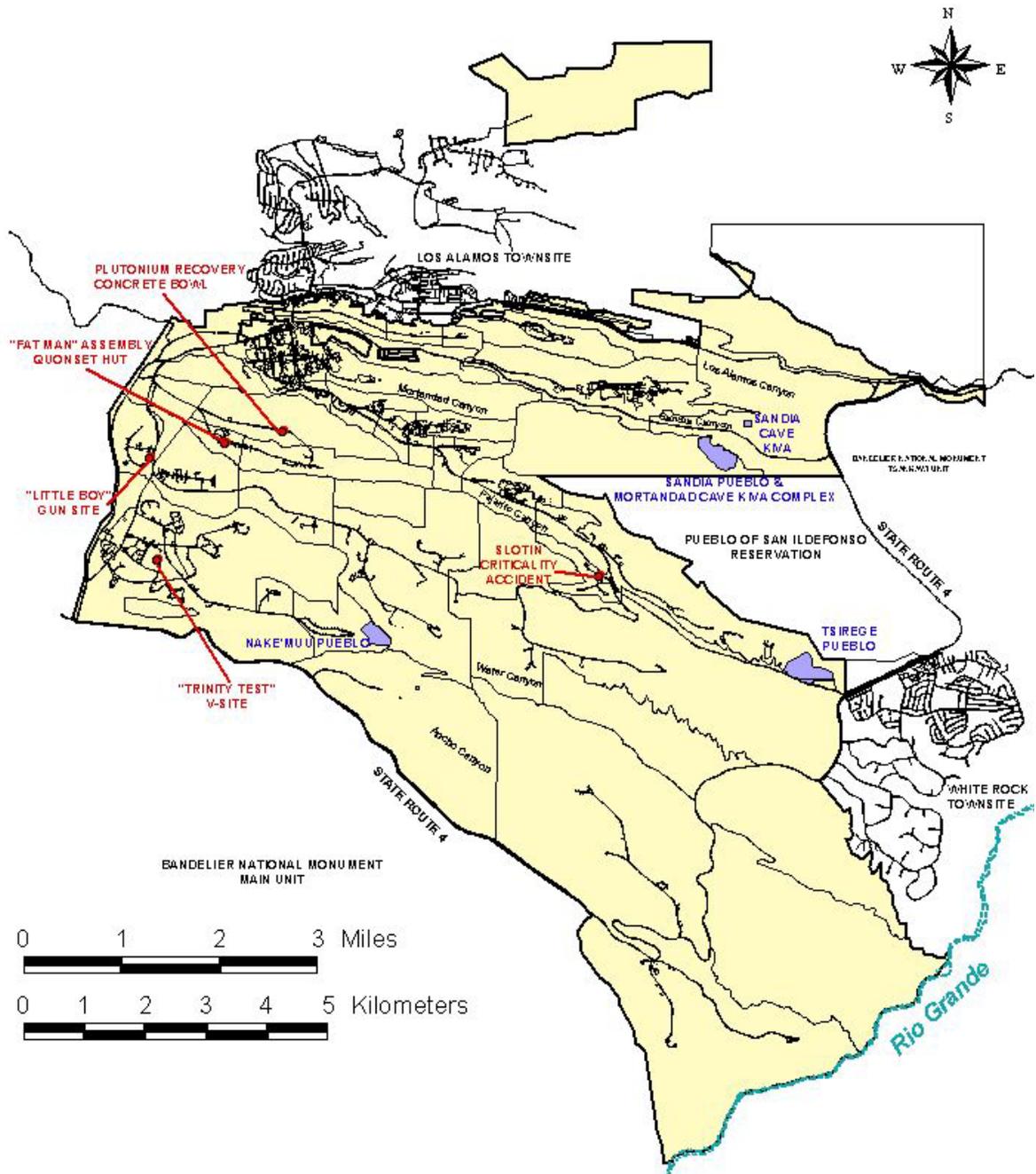
2756  
2757 LANL is an active and vibrant scientific and industrial complex. It is important to do the  
2758 necessary infrastructure upgrades to stay at the cutting edge of science and to best conduct LANL  
2759 mandated mission in the service of the country. However, it is also necessary to retain and protect  
2760 those storied reminders of history that best serve to ground present and future generations in how  
2761 things were and how they came to be. This preservation and interpretation are important for the  
2762 people who work at LANL, for those who live in the surrounding communities including Pueblo  
2763 neighbors, and for the Nation as a whole.

2764  
2765 Few stories are more compelling than those of the use of the Pajarito Plateau by Ancestral Pueblo  
2766 populations during the 13th through the 17th centuries and the 20th century use of the Plateau by  
2767 the Manhattan Project. While parts of these stories are captured at nearby Bandelier National  
2768 Monument, Trinity Site NHL, and at the Los Alamos Scientific Laboratory NHL within the  
2769 present town site of Los Alamos, key elements are situated at LANL itself.

2770  
2771 Two potential NHL Districts at LANL and their likely contributing elements (Figure 15.1) are  
2772 outlined below. In Section 16, we address the need for a Los Alamos Archaeology National  
2773 Register District, separate from but complementary to the two potential landmark districts.

2774  
2775 “Project Y” of the Manhattan Project lasted only four years, 1942 through 1946, but it represents  
2776 one of the defining moments of recent world history. “Project Y” had as its main goal the  
2777 immediate development and possible deployment of the world’s first atomic weapon. Because of  
2778 such urgency, the construction of “Project Y” facilities at Los Alamos was driven by simple  
2779 expediency, and little did anyone dream at its inception that this project would eventually result in  
2780 the creation and perpetuation of a state-of-the-art national security laboratory.

2781  
2782 A number of factors have served to greatly reduce the number of Manhattan Project buildings still  
2783 extant as of October 2004. These include (1) the expedient initial construction of the original  
2784 buildings and structures; (2) post-Manhattan Project infrastructure development particularly  
2785 during the late 1950s and early 1960s, and again beginning in the late 1990s through the first



- "Project Y" Manhattan Project National Historic Landmark
- Los Alamos National Laboratory Ancestral Pueblo National Historic Landmark
- Los Alamos National Laboratory

2786

2787

2788

**Figure 15.1. Potential "Project Y" Manhattan Project National Historic Landmark and LANL Ancestral Pueblo National Historic Landmark.**

2789 decade of the 21st century; (3) the development of the Los Alamos town site during the 1950s  
2790 and 1960s; (4) the May 2000 Cerro Grande fire; and (5) contamination of some buildings by  
2791 asbestos and radioactive isotopes. As of 2003, only 44 of these retained sufficient historical and  
2792 physical integrity for listing on the Register, and only a handful are deemed suitable for long-term  
2793 preservation and interpretation. Fortunately, of this handful, five separate properties together  
2794 provide compelling insight into the most significant aspects of “Project Y.” Each of these is a  
2795 small discrete area, representing from between approximately 1 to 3 acres of land.

2796  
2797 **“Trinity Test” V-Site** [TA-16]: The V-site contained an assembly bay, laboratory buildings, an  
2798 equipment building, and a warehouse used for experimental work with special assemblies. In  
2799 1945, Laboratory personnel conducted a trial assembly of the Trinity device. This location was  
2800 chosen in 1999 for restoration and interpretation by the Federal “Save America’s Treasures”  
2801 program, but suffered substantive damage from the May 2000 Cerro Grande fire (Figures 15.2  
2802 and 15.3). Only the assembly building (16-516) and the equipment building (16-517) survived the  
2803 fire (Figure 15.4).

2804  
2805 **“Little Boy” Gun Site** [TA-8]: The Gun Site contains three buildings (8-1, -2, and -3) and  
2806 associated external landscape features that are associated with development and testing in support  
2807 of the “Little Boy” bomb. “Little Boy” was an uranium gun device that involves shooting one  
2808 subcritical mass of uranium-235 into another at sufficient speed to avoid predetonation, but which  
2809 together yields a supercritical mass. The three buildings were constructed in a small ravine as part  
2810 of the Anchor Ranch Proving Ground (Figure 15.5) designed to test aspects of the gun device and  
2811 to document the tests through high-speed photography. In March 1944, special test guns from the  
2812 Naval Gun Factory were set up in gun emplacements above the roof level of the control building.  
2813 This unique design lessened the hazards associated with using high-alloy tubes and with firing the  
2814 tubes in free recoil. The Gun Site was included in 2002 for restoration and interpretation by the  
2815 Federal “Save America’s Treasures” program, after the May 2000 Cerro Grande Fire damaged  
2816 the V-Site (Figure 15.6).



2817

2818 **Figure 15.2. Part of the “Trinity Test” V-site before the Cerro Grande fire.**



2819

2820

**Figure 15.3. The same buildings as in Figure 15.2 after the Cerro Grande fire.**



2821

2822

**Figure 15.4. V-site Buildings 16-516 and -517, which survived the Cerro Grande fire.**



2823

2824

**Figure 15.5. Anchor Ranch Proving Ground.**



2825

2826

**Figure 15.6. The Gun Site, chosen in 2002 for restoration and interpretation.**

2827 **“Fat Man” Quonset Hut [TA-22]:** Building 22-1 is a true Quonset hut, often referred to as a  
2828 Pacific-style hutment facility (Figure 15.7). TA-22 was primarily used for detonator research and  
2829 development. Explosive components associated with the “Fat Man” plutonium implosion bomb  
2830 were assembled in the Quonset hut.

2831

2832 **“Plutonium Recovery” Concrete Bowl [TA-6]:** Because plutonium was scarce and had only  
2833 been produced in extremely small amounts by late 1944, experimental systems for the potential  
2834 recovery of plutonium from failed criticality tests were devised. The bowl (Building 6-37)  
2835 consists of a sloping, ground level concrete pad with a drain in the center of the structure (Figure  
2836 15.8). The concrete bowl is 200 feet in diameter and consists of 16 pie-shaped wedges. The center  
2837 of the bowl has a raised dome with a metal cover on top. Near the north side of the bowl is



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2840

**Figure 15.7.** The Quonset hut, Building 22-1, where ‘Fat Man’ explosive components were assembled.



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2842

**Figure 15.8.** “Plutonium recovery” Concrete Bowl.

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a wood-framed and gravel-filled ramp. Water recovery tests using depleted uranium were conducted at the Concrete Bowl beginning in 1944. The tests involved a shot containing depleted uranium (used as a stand-in for plutonium) in a redwood water container on a tower approximately 50 feet high. The shots contained up to 10 pounds of explosives and up to 500 gallons of water. After an explosion, workers would wash the bowl depression and filter the water to recover the metal shot fragments. The Laboratory ultimately decided against using the water recovery method for the Trinity Test because it was not feasible to scale the project up to the size required for the test of an actual atomic bomb. The water recovery tests at the Concrete Bowl were suspended after the spring of 1945.

2852 **“Criticality Accident” Slotin Building** [TA-18]: In August 1945, because of a fatal criticality  
 2853 accident suffered by Harry Daghlian at the Omega Site in TA-2, critical assembly work was  
 2854 transferred to the Pajarito Site [TA-18]. In May 1946, a similar fatal accident occurred in  
 2855 Building 18-1 (Figure 15.9), leading to the death of Louis Slotin. His death prompted the  
 2856 discontinuance of hand assembly for criticality experiments and the use of remote assembly  
 2857 techniques, as well as accentuating the role that health physics eventually came to play in  
 2858 weapons research.  
 2859



2860

2861

**Figure 15.9. Building 18-1, site of a fatal criticality accident.**

## 2862 **Potential Los Alamos National Laboratory Ancestral Pueblo National** 2863 **Historic Landmark**

2864 There are more than 1600 known Ancestral Pueblo archaeological sites at LANL, among the  
 2865 highest densities of such sites in the American Southwest. While all are considered important by  
 2866 the modern Pueblo descendants of the people who made these sites, there is a small percentage of  
 2867 sites that, due to integrity of location and the nature of the resource, best serve to tell the story of  
 2868 the Ancestral Pueblo use of the Pajarito Plateau during the period of around AD 1250 to 1700.  
 2869

2870 These Ancestral Pueblo resources can be grouped into two general levels of significance: NHL  
 2871 potential status and National Register Historic District potential status. A general description of  
 2872 these resources is provided below, followed by a specific listing of sites recommended for the  
 2873 landmark.

2874 **Late Coalition Period and Classic Period Complex Plaza Pueblos:** During the period of  
 2875 around AD 1150 to 1250, large numbers of small single-story roomblock pueblos, each averaging  
 2876 around two to three habitation rooms and four to five storerooms, were constructed on the  
 2877 Pajarito Plateau. This represented the first time in the archaeological record that large numbers of  
 2878 people were living part or all of the year on the Plateau. Subsequently, during the period of AD  
 2879 1250 to 1300, population began amalgamating into larger-sized pueblos. These pueblos appear to  
 2880 run from about 40 to more than 200 rooms and are characterized by two or more roomblocks  
 2881 being linked together around one or more partially or completely enclosed plazas. Most of these

2882 complex plaza pueblos contain one or more sections of roomblocks that were originally two  
2883 stories in height, with the largest pueblos exhibiting evidence of three-story construction. Kiva  
2884 ceremonial chambers, extensive midden areas, and cemeteries are also present. Preliminary data  
2885 suggest that these complex plaza pueblos can be divided into at least three size categories based  
2886 on a calculation of the aggregate square footage of roomblocks and attached plazas. The majority  
2887 (20 examples) average in size between approximately 800 to 1200 square meters, with a few  
2888 being as low as 450 square meters and as high as 1400 square meters; five range in size between  
2889 1900 to 2500 square meters; while two are each approximately 4200 square meters. During the  
2890 Classic period, after about AD 1325, the numerous complex plaza pueblos were consolidated into  
2891 five immense pueblos, one of which is present at LANL (Tsirege).

2892  
2893 **Cavate Complexes:** Associated primarily with late Coalition period and Classic period complex  
2894 plaza pueblos are a number of rooms excavated by hand into the welded tuff cliff faces. These  
2895 range from small isolated habitation rooms and storage rooms to clusters of habitation rooms and  
2896 associated storage rooms to clusters containing large squarish rooms that appear to have been  
2897 used as kivas. The larger clusters almost invariably have one or more masonry rooms (“talus  
2898 rooms”) constructed immediately in front of the cavate rooms. Most cavate complexes also  
2899 contain exterior rock art panels. The majority of cavate habitation rooms and cavate kivas appear  
2900 to have been prepared by first smoking the room to produce a layer of black soot and then the  
2901 lower third to half being covered with a smooth layer of light brown plaster. This produces a  
2902 seemingly purposeful effect possibly representative of the earth (brown) and sky (black). In the  
2903 kivas and larger habitation rooms, petroglyphs are commonly scratched through the black soot,  
2904 revealing the natural white tuff underneath, and somewhat less frequently through the brown  
2905 plaster. Particularly in the kiva-like rooms, these petroglyphs are complex with many human and  
2906 animal figures in scenes possibly representing myths or other narrative stories. Three of the four  
2907 examples of cavate complexes recommended for special status included particularly rich  
2908 examples of petroglyph narrative art and well-preserved room features. The fourth example is not  
2909 a complex, but instead represents a cavate with a uniquely preserved talus room, possibly  
2910 reconstructed or refurbished in the 19th or early 20th centuries.

2911  
2912 **Rock Art Panels:** In many locations, the Pajarito Plateau canyon cliff faces exhibit petroglyphs  
2913 that have been pecked into the welded tuff and basalt, most typically along southern and eastern  
2914 exposures. There is a tendency for rock art panels to cluster near cavate complexes in the vicinity  
2915 of complex plaza pueblos. The petroglyphs cover a wide range of styles and motifs, including  
2916 human figures (such as masked and shield warriors), animals, plants, and geometric designs.

2917  
2918 **Masonry Circles with Upright Stones:** Along the eastern tips of several mesa tops on the  
2919 Pajarito Plateau, including at LANL, are isolated circles of shaped stone, including a number of  
2920 elongated upright stones. The location of these features and informal discussion with individuals  
2921 from the Pueblos of San Ildefonso and Santa Clara suggest these may have served as trail shrines.

## 2922 **Potential Los Alamos National Laboratory Ancestral Pueblo National** 2923 **Historic Landmark**

2924 The four discrete units identified for inclusion in the potential LANL Ancestral Pueblo National  
2925 Historic Landmark combine for a total of 132 acres (see Figure 15.1).

2926  
2927 **Nake'muu Pueblo Unit (30 acres):** Nake'muu is a late Coalition Period complex plaza pueblo  
2928 and associated structures and trails situated on a narrow ridge between Water Canyon and Cañada  
2929 del Buey. It is notable for both its standing wall architecture, the only open pueblo ruin at LANL  
2930 with such walls, and the fact that it served as a refuge for people from the Pueblo of San Ildefonso

2931 during the late 17th century Pueblo Revolt. Photographs taken of the site in 1915 (Figure 15.10)  
2932 reveal that there has been little change to the site during the past eight decades (Figure 15.11)  
2933



2934  
2935

**Figure 15.10. Nake'muu in 1915.**



2936  
2937

**Figure 15.11. Nake'muu in 1999.**

2938

2939 **Tsirege Pueblo Unit (57 acres):** Tsirege is the only Classic period complex plaza pueblo at  
2940 LANL and an ancestral village in the traditions of the Pueblo of San Ildefonso. Tsirege and  
2941 Tsankawi were the last to be occupied on the Pajarito Plateau. It is one of the largest pueblo ruins  
2942 on the Plateau, and contains several hundred ground floor rooms and evidence of three-story  
2943 architecture (Figure 15.12). A long defensive wall, approximately 10 kivas, a reservoir, and many  
2944 significant rock art panels are also present. A major complex of associated cavate structures and  
2945 talus rooms was constructed along the cliff face above the bottom of Pajarito Canyon. Tree-ring  
2946 dates indicate use at least during the period of AD 1422 to 1580, with the later date coinciding  
2947 with the final abandonment of the Pajarito Plateau by permanent Ancestral Pueblo populations  
2948 due to prolonged drought. A Tsirege rock art petroglyph (Figure 15.13) of an *Awanyu*, a horned  
2949 water serpent deity, was copied by a famous Pueblo of San Ildefonso potterer, in the earlier 20th  
2950 century. This image was part of the 20th century revival of Tewa pottery making and now  
2951 commonly appears on contemporary Pueblo pottery. It also has become a commercial icon for  
2952 northern New Mexico.

2953

2954 **Sandia Pueblo and Mortandad Cave Kiva Unit (43 acres):** This consists of a complex pueblo  
2955 associated with a series of rock art panels and spectacular cavates including several with  
2956 petroglyph complexes likely depicting mythological scenes (Figure 15.14). These remains are  
2957 included in the traditions of the Pueblo of San Ildefonso and may represent a place of special  
2958 cultural and traditional value. Because of the large numbers of visitors to the site and due to  
2959 concern over potential vandalism, the National Park Service assisted LANL in putting a  
2960 protective steel grate around the entrance to the cavate (Figure 15.15), which remains locked  
2961 except for periodic monitoring or official visits. The LANL cultural resources program maintains  
2962 custody of the key.

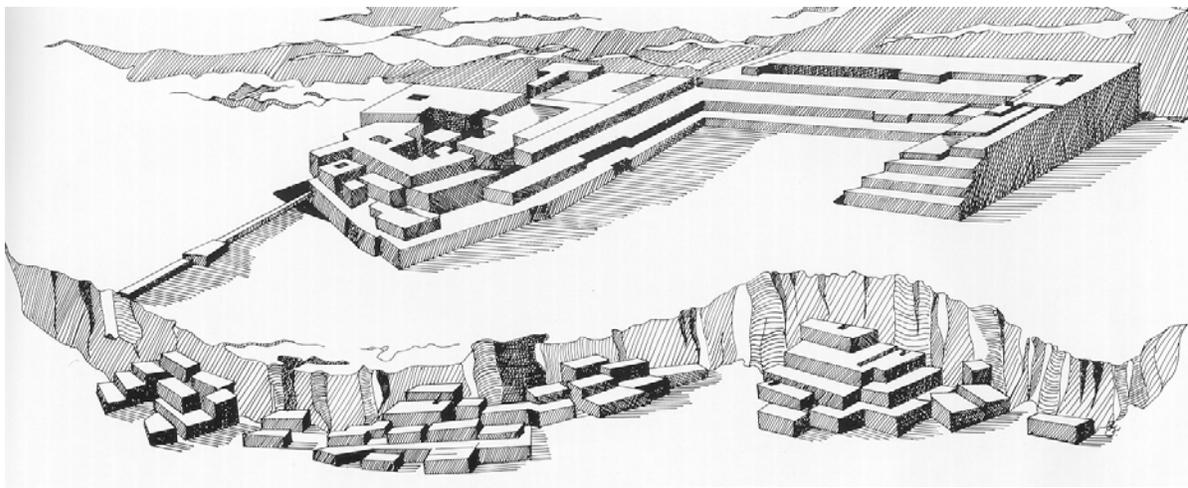
2963

2964 **Sandia Canyon Cave Kiva Unit (2 acres):** This consists of at least two spectacular cavates with  
2965 petroglyph complexes likely depicting mythological scenes. They rival Mortandad Cave Kiva in  
2966 terms of complexity and artistry of images.

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2971

**Figure 15.12. Artist rendering of Tsirege Pueblo (K.M. Chapman).**



2972

2973

2974

**Figure 15.13. Rock art petrograph at Tsirege depicting the horned water serpent diety, *Awanyu*.**



2975

2976

**Figure 15.14. Mortandad Cave Kiva.**



2977

2978

**Figure 15.15. Steel grate in front of Mortandad Cave Kiva.**

2979

**Preservation Standards for National Historic Landmarks**

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Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. The law requires that agencies, “to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmarks.” In those cases when an agency's undertaking directly and adversely affects an NHL, or when Federal permits, licenses, grants, and other programs and projects under its jurisdiction or carried out by a state or local government pursuant to a Federal delegation or approval so affect an NHL, the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL.

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Where such alternatives appear to require undue cost or to compromise the undertaking's goals and objectives, the agency must balance those goals and objectives with the intent of the NHPA. In doing so, the agency should consider

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1. the magnitude of the undertaking's harm to the historical, archaeological, and cultural qualities of the NHL;
2. the public interest in the NHL and in the undertaking as proposed; and
3. the effect a mitigation action would have on meeting the goals and objectives of the undertaking.

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The ACHP's regulations implementing Section 106 include specific provisions that also implement Section 110(f). These regulations require that the Council must be included in any consultation following a determination by the Federal agency that a Federal or Federally assisted undertaking will have an adverse effect on an NHL. The Council must notify the Secretary and may request the Secretary to provide a report to the Council detailing the significance of the affected NHL under Section 213 of the NHPA and recommending measures to avoid, minimize

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3004 or mitigate adverse effects. The Council shall report the outcome of the Section 106 process to  
3005 the Secretary and the head of the agency responsible for the undertaking.

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3007 Even if the above named properties are not eventually nominated for placement into NHL  
3008 Districts, they will be considered as having special significance requiring heightened long-term  
3009 monitoring and protection as described below in Section 17.

## 3010 **Section 16. Potential Los Alamos Archaeology National** 3011 **Register Historic District**

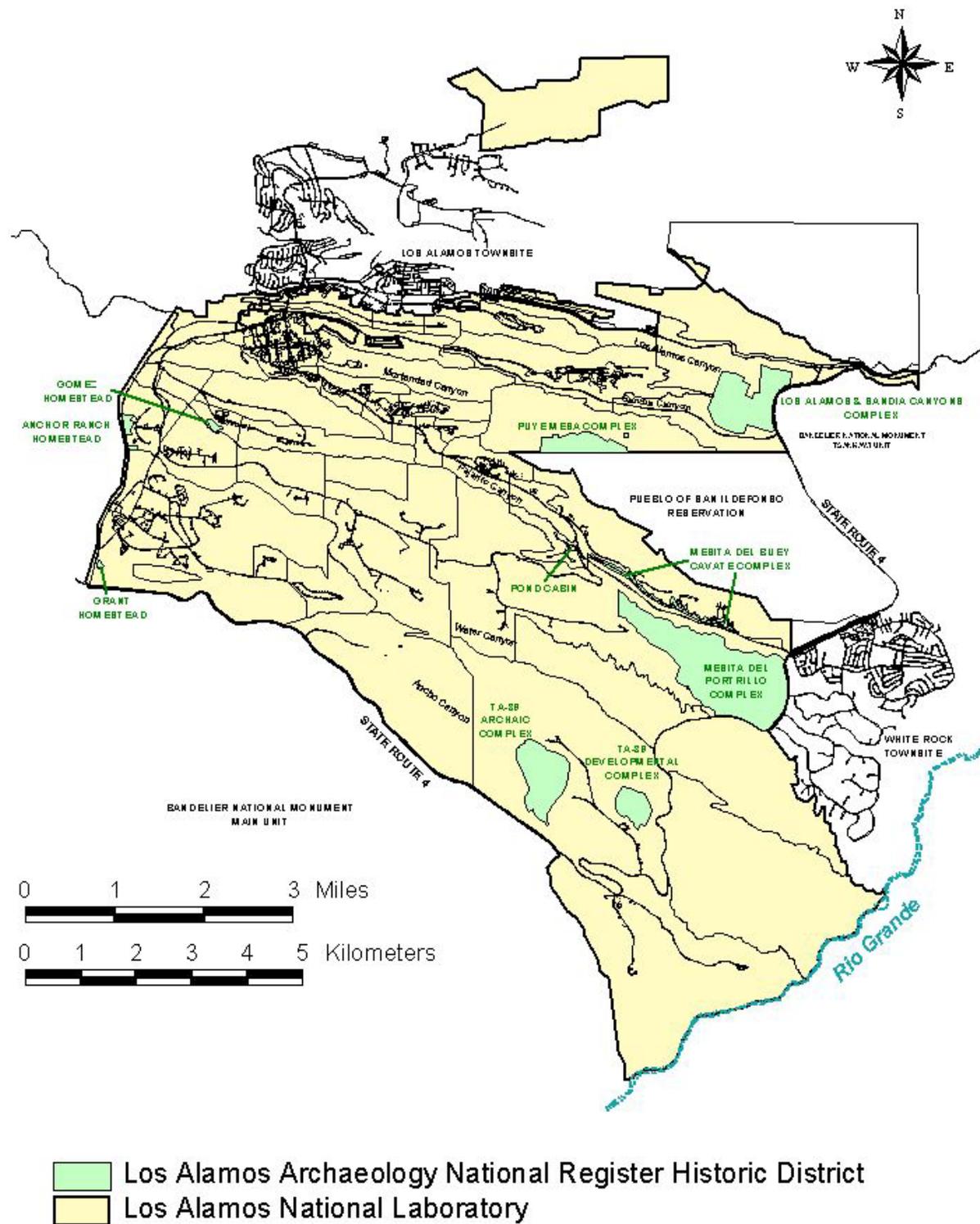
3012 In addition to the two potential NHL Districts at LANL noted in Section 15, there are a number of  
3013 archaeological sites and clusters of sites that, while not deemed of sufficient significance to be  
3014 considered for inclusion in the two potential NHL Districts, nevertheless are important to the  
3015 State of New Mexico and to the Nation. They are appropriate for inclusion in a Los Alamos  
3016 Archaeology National Register Historic District, separate from but complementary to the  
3017 potential landmarks. This proposed Los Alamos Archaeology National Register Historic District  
3018 would contain a total of 10 discrete components with a combined size of approximately 1496  
3019 acres (Figure 16.1). Included within these 10 components are six site complexes rich in resources  
3020 dating from the Archaic period through the Ancestral Pueblo Classic period and four components  
3021 relating to the Homestead period of 1890 through 1943. These 10 components are detailed below.

### 3022 **Potential Los Alamos Archaeology National Historic Register District**

3023 **Mesita del Potrillo Complex (727 acres):** This is a large complex of approximately 134  
3024 archaeological sites between Pajarito Canyon and Potrillo Canyon, immediately west of White  
3025 Rock and south of TA-54. These sites include four complex plaza pueblos, 31 pueblo  
3026 roomblocks, 26 cavates and sets of cavates, 19 rock art panels, six sets of stairs and trails, 21  
3027 fieldhouses, four lithic scatters, three rock shelters, one rock ring, 11 rock features, four artifact  
3028 scatters, three garden plots, and one miscellaneous site. This is one of the most dense and well-  
3029 preserved groups of Ancestral Pueblo archaeological sites at LANL. In addition, there are several  
3030 parallel sets of wagon ruts on top of Mesita del Potrillo that may have been part of the  
3031 transportation corridor servicing the timber cutting activities of Henry Buckman, perhaps linking  
3032 to the Buckman sawmill itself at what was later to become the “S-Site” (sawmill site) at LANL.

3033  
3034 **Los Alamos and Sandia Canyons Complex (277 acres):** This is a complex of approximately 34  
3035 sites on either side of Los Alamos Canyon and north of Sandia Canyon, immediately west and  
3036 north of State Route 4. These include a large Coalition period complex plaza pueblo consisting of  
3037 a series of four interconnected two-story pueblo roomblocks surrounded by single-story rooms,  
3038 four pueblo roomblocks including a rare small Classic period pueblo, 15 individual cavates or  
3039 cavate complexes, three lithic scatters, three lithic and ceramic scatters, five one- to three-room  
3040 structures, two rock art sites, and numerous segments of trails and associated steps. The trail  
3041 system likely serviced the occupants of nearby Tsankawi Pueblo in terms of travel from the  
3042 Pueblo to the Jemez Mountains and the Valles Caldera to the west.

3043  
3044 **Puye Mesa Complex (108 acres):** This is a complex of approximately 30 archaeological sites  
3045 situated on the mesa top immediately south of Mortandad Canyon and immediately north of San  
3046 Ildefonso Reservation. An isolated cavate along the northern slopes of Puye Mesa and an  
3047 associated set of stairs are also included with this complex. The mesa top contains a dense cluster  
3048 of sites including two complex plaza pueblos, 14 pueblo roomblocks (Figure 16.2), six  
3049 fieldhouses, four Archaic period lithic scatters, one lithic and ceramic scatter, and a probable



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Figure 16.1. Potential Los Alamos Archaeology National Register Historic District.



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3056 **Figure 16.2. Scattered shaped tuff blocks from an Ancestral Pueblo roomblock on**  
 3057 **Puye Mesa.**

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reservoir and associated agricultural terraces. A historic wagon road also transects the area. Survey has not yet been conducted along a portion of the south side of the mesa immediately adjacent to the boundary with the Pueblo of San Ildefonso, and it is anticipated that this area will contain cavates, trails, stairs, rock art, and other resources deserving of inclusion in the register district.

**Mesita del Buey Cavate Complex (60 acres):** This complex contains 21 sites, including outstanding examples of cavates and associated rock art situated along the southern cliff face of Mesita del Buey immediately north of the bottom of Pajarito Canyon (Figure 16.3). The area includes 13 cavate complexes, five rock art panels (Figure 16.4), and single examples each of a roomblock, rockshelter, and a lithic scatter.

**TA-39 Archaic Complex (216 acres):** This consists of approximately 19 archaeological sites situated on a mesa top between Water and Ancho Canyons in TA-39. The complex is distinguished by the presence of three large Archaic period lithic scatters, one lithic and ceramic scatter with a predominance of Archaic period materials, and three lithic scatters of undetermined affiliation, potentially including Archaic period materials. In addition, there are several Ancestral

**TA-39 Developmental Complex (80 acres):** This small complex contains a total of six archaeological sites. Based on ceramic analysis, two Ancestral Pueblo roomblocks and one lithic and ceramic scatter likely date to the Developmental period and thus constitute the earliest known Ancestral Pueblo archaeological sites on the Pajarito Plateau. The other three sites, likely dating to the Coalition period, include a one- to three-room structure, a lithic and ceramic scatter, and a rock feature.



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3084 **Figure 16.3. General view of cavates along the southern slope cliff faces of Mesita**  
3085 **del Buey.**

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3089 **Figure 16.4. Petroglyphs on the southern slope of Mesita del Buey.**

3090 Pueblo sites including eight roomblocks, two one- to three-room structures, and two lithic and  
3091 ceramic scatters.

3092 **Grant Homestead (4 acres).** The Grant Homestead is situated on a bench in Water Canyon  
3093 immediately east of State Route 501. The homestead was established in the 1920s by an Anglo  
3094 cowboy, Ted Mather, and his Hispanic wife, Rosa Grant, and was used up until the time of the  
3095 Manhattan Project. Mather served as a wrangler with the Los Alamos Ranch School. The  
3096 homestead was partially damaged by the Cerro Grande fire and subsequent rehabilitation  
3097 measures. However, a number of features are still present including the house and privy  
3098 foundations, trash scatters, and other definable activity areas.  
3099

3100 **Anchor Ranch (14 acres).** Anchor Ranch was established as a homestead in 1901 by James  
3101 Loomis, an employee with the lumberman Henry Buckman. The Ross family of New York State  
3102 purchased the homestead in 1924 and turned it into a small commercial cattle ranch. Francis  
3103 Smithwick was hired to manage the ranch and to care for their handicapped son, Alex. While  
3104 none of the original ranch buildings are still standing (flooding after the May 2000 Cerro Grande  
3105 fire destroyed an ice house), there are a large number of visible features extant including two  
3106 ponds, irrigation ditches, pumping apparatus, building and structure foundations, and trash  
3107 deposits. One of the log guesthouses, since demolished, was used for making the first industrial-  
3108 type radiograph during the Manhattan Project. The Anchor Ranch name was used for Manhattan  
3109 Project operations at TA-8 (Anchor Ranch West) and TA-9 (Anchor Ranch East).

3110 **Gomez Homestead (9 acres).** The Gomez homestead is in TA-22 on the mesa edge immediately  
3111 north of Pajarito Canyon near its junction with Starmers Gulch. It was established by Donaciano  
3112 Gomez in 1899. The homestead was occupied by members of the Gomez family up until the  
3113 Manhattan Project. Wooden structural elements of several features of the homestead were  
3114 damaged or destroyed by the Cerro Grande fire. The homestead is largely unique in that a number  
3115 of structures including a corral, a possible guest house, lambing pens, a horno (Figure 16.5), and  
3116 other features (Figure 16.6) were constructed of stone masonry. The nearby Sanchez y Montoya  
3117 homestead integrity was largely destroyed by the fire, but relatively little damage was sustained at  
3118 the Gomez homestead because of the prevalence of the stone masonry.

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**Figure 16.5. Gomez homestead horno.**



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**Figure 16.6. Other features at the Gomez homestead.**

3124 **Pond Cabin (1 acre).** The Pond Cabin is the one surviving standing log structure at LANL dating  
3125 to the Homestead period (Figure 16.7) and is listed on the New Mexico state list Register. It was  
3126 built in 1914 by Ashley Pond to serve as the office for the Pajarito Ranch, a commercial ranch  
3127 similar in nature to Anchor Ranch. After the Pajarito Ranch was taken over by the Manhattan  
3128 Project, the Pond Cabin was used as a sleeping quarter for various employees working at TA-18.  
3129 Due to the increased potential for flooding in Pajarito Canyon immediately after the May 2000  
3130 Cerro Grande fire, a series of cement road barriers and sandbags was placed around the structure  
3131 to protect it in the event of flooding (see Section 20). No floods reached the Pond Cabin, and the  
3132 barriers have since been removed.



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**Figure 16.7. The Pond Cabin at TA-18.**

3135 **Sensitive Archaeological Sites not included in the Landmark and**  
 3136 **National Register District Boundaries**

3137 There are a sizable number of sensitive archaeological resources not included in the potential  
 3138 NHL and National Register Historic District boundaries due to issues of integrity or other  
 3139 considerations. These include large complex plaza pueblos, TCPs, and other sensitive locations.  
 3140 They will be afforded the maximum protections available to such sites, and, where feasible, will  
 3141 be highlighted for avoidance by future LANL planning activities. A list of these sensitive sites by  
 3142 site number and TA is provided below.

3143 <b><u>TA-3:</u></b>	3158 <b><u>TA-49:</u></b>
3144 University House Site	3159 LA 3841
3145 <b><u>TA-15:</u></b>	3160 LA 4693
3146 LA 4665	3161 LA 4708
3147 LA 4682	3162 LA 12657-E
3148 LA 14869	3163 <b><u>TA-53:</u></b>
3149 <b><u>TA-33</u></b>	3164 LA 4721
3150 LA 86584	3165 <b><u>TA-54:</u></b>
3151 <b><u>TA-36:</u></b>	3166 LA 4616
3152 LA 12620-C	3167 LA 4619
3153 LA 12625C	3168 <b><u>TA-60:</u></b>
3154 <b><u>TA-39:</u></b>	3169 LA 136909
3155 LA 21343	3170 <b><u>TA-68:</u></b>
3156 LA 21389	3171 LA 12718-B
3157 LA 136538	3172 <b><u>TA-71:</u></b>
	3173 LA 12696
	3174 LA 139572
	3175 SWEIS II-15

3176 **PART IV. Native American Consultation and Outreach**

3177 **Section 17. Native American Consultation and Outreach**

3178 During the more than 60 years that LANL has been in existence, it has attempted to maintain an  
 3179 amicable and respectful relationship with its Native American neighbors at the Pueblos of  
 3180 Cochiti, Jemez, San Ildefonso, and Santa Clara and with other tribes throughout northern and  
 3181 central New Mexico. However, this relationship at times has been strained due to the  
 3182 understandable concern by the tribes over issues of contamination, and secrecy, and particularly  
 3183 the resentment engendered by the fact that LANL occupies lands ancestral to the Pueblos.  
 3184

3185 Laboratory mission activities undeniably damaged and destroyed a number of Ancestral Pueblo  
 3186 archeological sites and traditional use areas, especially during the early decades of the existence  
 3187 of LANL. Ongoing and planned future changes in the DOE/NNSA mission and associated  
 3188 infrastructure upgrades will continue to have the potential to impact Ancestral Pueblo resources.  
 3189 Beginning in 1992, LASO and LANL made a concerted outreach effort on behalf of the Accord  
 3190 Pueblos. This effort resulted in a set of agreement documents with each pueblo that spelled out a  
 3191 series of issues and initiatives aimed at enhancing communication, supporting environmental  
 3192 monitoring, and providing for educational and employment opportunities.

3193 In keeping with the spirit of these agreements and recognition of the dialog engendered during the  
3194 past several years of cultural resources management at LANL, it is a goal of this LANL Plan to  
3195 consider the concerns and wishes of the Pueblos and other tribes while implementing the national  
3196 security mission at LANL.

### 3197 **Cultural Affiliation**

3198 Several historic preservation laws, EOs, and DOE policy require consultation with Native  
3199 American tribes that are culturally affiliated with LANL. The tribes most directly involved in this  
3200 consultation include the Pueblos of San Ildefonso, Cochiti, Santa Clara, and Jemez. The Jicarilla  
3201 Apache are likely culturally affiliated with two tepee rock ring sites in Rendija Canyon that were  
3202 excavated in 2003 and which are part of the lands designated to be transferred to Los Alamos  
3203 County by 2007. To a lesser degree, the Pueblo of Acoma and the Mescalero Apache have  
3204 expressed an interest in land-use issues at LANL. Based on oral traditions, Pawnee and Kiowa  
3205 groups may have also made occasional forays into this general area, but would not be considered  
3206 as having been culturally affiliated to LANL.

3207  
3208 “Cultural affiliation” as defined and intended under the canon of historic preservation law,  
3209 particularly the NHPA and NAGPRA, differs from that upheld through the Federal courts in  
3210 relation to the Indian Lands Commission Act of 1946. For example, although the Pueblo of San  
3211 Ildefonso claims aboriginal rights to all of the lands presently occupied by LANL (with the  
3212 exception of the Fenton Hill parcel), it may be possible for other tribes to satisfactorily  
3213 demonstrate the presence of TCPs or to demonstrate cultural affiliation to sets of human remains  
3214 found in various locations at LANL. This highlights the fact that the regulatory standard for  
3215 establishing cultural affiliation is a lower standard than that used to establish ancestral land  
3216 claims. In June 2005, the Pueblo of San Ildefonso settled their claim under the Indian Lands  
3217 Commission Act, the last remaining tribe to reach settlement. However, this fact has not detracted  
3218 from the clear understanding by DOE/NNSA that most, if not all of LANL (excluding Fenton  
3219 Hill), is situated within the aboriginal boundary of the Pueblo of San Ildefonso.

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3221 The general tenets of Native American cultural affiliation are discussed in a draft assessment  
3222 prepared in 2002 for LASO prior to the start of the ongoing Land Conveyance and Transfer  
3223 Project. This document is entitled “An Evaluation and Recommendations for the Determination  
3224 of Ownership and Cultural Affiliation for Human Remains and Associated and Unassociated  
3225 Objects Pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) at  
3226 Los Alamos National Laboratory, New Mexico.” It is characterized as a draft in that it reflects  
3227 historical, ethnographic, and archaeological considerations, but does not reflect recent oral  
3228 tradition as demonstrated through direct consultation and dialog with all of the tribes. Such  
3229 consultation, being pursued on a government-to-government relationship by LASO, is ongoing  
3230 with the Pueblos of San Ildefonso and Santa Clara.

3231  
3232 The Pueblo of San Ildefonso is the only tribe to be a direct neighbor to LANL, with several  
3233 kilometers of shared boundary (see Figure 1-1). San Ildefonso views virtually all of the  
3234 Laboratory, with the exception of the Fenton Hill parcel, as belonging within their ancestral  
3235 boundaries and thus their aboriginal land. DOE/NNSA agrees with this assessment and therefore  
3236 considers the Pueblo of San Ildefonso to be culturally affiliated under NAGPRA with Ancestral  
3237 Pueblo remains throughout all of LANL (Figure 17.1), with the exception of Fenton Hill.

3238  
3239 The Pueblo of Cochiti views the southern edge of LANL—including Ancho Canyon and the mesa  
3240 top to the south—as being part of their ancestral boundaries; they thus appear to share Ancestral  
3241



3242

3243 **Figure 17.1. San Ildefonso tribal members visit an Ancestral Pueblo site at LANL.**

3244 Pueblo cultural affiliation under NAGPRA for this part of the Laboratory with the Pueblo of San  
3245 Ildefonso, a position evident in the review of historical documents and ethnographies.

3246  
3247 The Pueblo of Santa Clara (Figure 17.2) has stated a claim for cultural affiliation to Rendija  
3248 Canyon, and possibly to other portions of the Laboratory, although the latter has not yet been  
3249 formally presented to LASO as an actual claim. DOE/NNSA has accepted the Rendija Canyon  
3250 claim by the Pueblo of Santa Clara, therefore both Santa Clara and San Ildefonso are viewed as  
3251 sharing cultural affiliation under NAGPRA to Ancestral Pueblo remains and objects in this  
3252 particular location. DOE/NNSA has not yet seen the evidence to support the notion that the  
3253 Pueblo of Santa Clara is culturally affiliated to Ancestral Pueblo human remains elsewhere at  
3254 LANL.

3255 In addition to these three pueblos, it has been determined by DOE/NNSA that Jemez Pueblo has  
3256 sole claim to cultural affiliation under NAGPRA for Ancestral Pueblo remains and objects at the  
3257 Fenton Hill parcel. Even more circumscribed is the relationship of the Jicarilla Apache Nation to  
3258 two historic tepee-ring sites excavated in 2003 in Rendija Canyon as part of the Land  
3259 Conveyance and Transfer Project (Figure 17.3). The excavation evidence supports a connection  
3260 with the Jicarilla Apache, but no human remains or NAGPRA-related items were recovered.

3261 Other tribes who have shown an interest in LANL lands have included the Pueblo of Acoma, the  
3262 Hopi Indian Tribe, and the Mescalero Apache Tribe. While the Pueblo of Acoma and the  
3263 Mescalero Apache Tribe have expressed a desire to be kept informed of cultural resources actions  
3264 at LANL, neither they nor the Hopi Tribe desire to be active participants in cultural resources  
3265 consultations at LANL.

3266 Archaeological sites at LANL dating to the Archaic period (before AD 600) are considered too  
3267 early for any one Pueblo to have the knowledge to claim a direct lineal relationship with any  
3268 human remains or potential NAGPRA-related objects. For this reason, in the unlikely event that



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**Figure 17.2. Santa Clara tribal members visit an Ancestral Pueblo site at LANL.**



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**Figure 17.3. Tribal consultation with the Jicarilla Apache.**

any such remains or objects are found at LANL, cultural affiliation is assumed by DOE/NNSA to be shared between all New Mexico pueblos and the Hopi Tribe of Arizona. Therefore, initial consultation would be performed with all of these tribes. However, the consultation process may determine that some or most of these tribes would be willing to formally defer consultation to the Accord Pueblos.

## 3279 **Native American Sovereignty and Government-to-Government** 3280 **Consultation**

3281 EO 13175, along with virtually all historic preservation guidance and DOE policy, explicitly  
3282 recognize the sovereign status of Federally recognized Native American tribes, and therefore  
3283 acknowledges that formal historic preservation consultation should be carried out on a  
3284 government-to-government basis. This relationship is clearly spelled out in the October 2000  
3285 publication *U.S. Department of Energy American Indian and Alaska Native Tribal Government*  
3286 *Policy*. Formal consultation regarding NAGPRA, NHPA, and other laws and EOs as may be  
3287 appropriate, are conducted directly between the Manager of LASO and the respective governors  
3288 or presidents of pueblos and tribes. However, informal day-to-day conduct of cultural resources  
3289 activities may be carried out by appropriate staff, such as the LASO cultural resources program  
3290 manager, the LANL cultural resources staff, and various cultural resources and environmental  
3291 program managers at the pueblos and tribes.

## 3292 **National Historic Preservation Act Section 106 Consultation**

3293 Consultation regarding Section 106 of the NHPA is carried out on a government-to-government  
3294 basis between culturally affiliated tribes and DOE/NNSA for all appropriate LANL undertakings.  
3295 Typically, this will be in the form of a letter report sent to the SHPO by LASO, with copies to the  
3296 tribes. The SHPO serves as a facilitator for Federal consultation with the tribes and usually will  
3297 not complete the SHPO review until receiving proof or at least notice of consultation between the  
3298 agency and the appropriate tribes. Other related types of actions, such as reviews of data recovery  
3299 plans/research designs and reviews of changes in Register eligibility or site boundaries, are  
3300 similarly sent to the SHPO with copies to the tribes.

3301  
3302 One caveat in Section 106 consultation is the fact that a complete TCP assessment has not yet  
3303 been performed with the Pueblos of San Ildefonso, Cochiti, and Santa Clara. Thus it is possible  
3304 (although not likely) that an action deemed as “no property, no effect” in Section 9 and thus  
3305 excluded from immediate review by the SHPO, could impact a TCP landscape that has not been  
3306 previously recognized as an archaeological site. In part for this reason, the TCP dialog with these  
3307 three pueblos needs to be finalized as soon as possible within the next two or three years.

## 3308 **Traditional Cultural Properties**

3309 As noted in Section 2, a TCP, as established by the NHPA is defined as place of special heritage  
3310 value to contemporary communities (often, but not necessarily, Native American groups) because  
3311 of their association with the cultural practices or beliefs that are rooted in the histories of those  
3312 communities and are important in maintaining the cultural identity of the communities.

3313  
3314 TCPs were first considered at LANL in the specific context of the 1993 then proposed Bason  
3315 Land Exchange in Rendija Canyon. Consultations by project staff with the Pueblo of San  
3316 Ildefonso resulted in the identification and concurrence by the SHPO of seven TCPs associated  
3317 with an ancient pilgrimage trail extending from the Rio Grande to a prominent peak in the Jemez  
3318 Mountains.

3319  
3320 The next set of TCP consultations occurred during the period of 1996 and 1997 during the  
3321 preparation of an “Ethnographic Study” in conjunction with the 1999 SWEIS for LANL (see  
3322 Section 16). This ambitious undertaking resulted in contact with 16 tribes and members of nearby  
3323 Hispanic communities. The results of the study were reported in the SWEIS (SWEIS Appendix  
3324 E), unfortunately the detailed documentation necessary for DOE/NNSA to make informed  
3325 decisions was not available for review.

3326 The Ethnographic Study divided its classification of TCPs into five basic categories: Ceremonial  
3327 sites, natural features, ethnobotanical gathering sites, artisan material gathering sites, and  
3328 traditional subsistence features. Tribes indicating the usage of one or more of these categories on  
3329 LANL land and/or cultural affiliation to LANL land include the Pueblos of Acoma, Cochiti,  
3330 Laguna, Picuris, Pojoaque, Sandia, San Ildefonso, Santa Clara, Zia, and Zuni, along with the  
3331 contacted Hispanic communities (who identified a pilgrimage route to Jemez Springs).  
3332

3333 In 2000, LASO contacted a total of 24 tribes to identify whether they had potential or known  
3334 TCPs on LANL land. Along with the four Accord Pueblos, the Pueblo of Acoma and the Hopi  
3335 Tribe expressed interest, as did the Mescalero Apache Tribe. Several tribes expressing cultural  
3336 affiliation during the Ethnographic Study, those of the Pueblos of Laguna, Picuris, Pojoaque,  
3337 Sandia, Zia, and Zuni, failed to respond despite several attempts to interest them.  
3338

3339 Of all of the pueblos, only San Ildefonso has recently provided specific information that can be  
3340 adequately evaluated within the context of the law. An attempt at dialog with the Pueblos of  
3341 Santa Clara and Cochiti will continue to be made. However, discussion of TCPs involves a  
3342 considerable amount of information that is considered sacred knowledge and accordingly is not  
3343 willingly shared with people outside of the clan that controls the information.

#### 3344 **Executive Order 13007, Sacred Sites**

3345 This EO concerns Indian Sacred Sites. In order to protect and preserve Indian religious practices,  
3346 Federal land managers must accommodate access to and ceremonial use of Indian Sacred Sites by  
3347 Indian religious practitioners and avoid adversely affecting the physical integrity of Sacred Sites.  
3348 A definition for sacred sites is provided in Section 2. As might be anticipated, tribes view sacred  
3349 sites in much the same manner as that of TCPs, with such information typically being closely  
3350 guarded.

#### 3351 **Native American Graves Protection and Repatriation Act**

3352 There are four sets of issues relating to compliance with the NAGPRA at LANL.  
3353

3354 The first issue, that of Native American tribes establishing potential cultural affiliation to LANL  
3355 lands, was discussed at length above.  
3356

3357 The second issue involves the creation and use of NAGPRA intentional excavation  
3358 comprehensive agreements for planned excavation at LANL. Such an agreement was produced in  
3359 cooperation with the Pueblo of San Ildefonso and successfully used during the first two field  
3360 seasons (FY 2002 and FY 2003) of the Land Conveyance and Transfer Project. As a result of the  
3361 agreement LANL was able to employ the services of two monitors from the Pueblo of San  
3362 Ildefonso for the duration of the two field seasons. These monitors not only conducted their duties  
3363 as NAGPRA monitors, but participated as appropriate in aspects of excavation fieldwork, data  
3364 analysis, and report production.  
3365

3366 The monitoring situation is expanding in FY 2004 and FY 2005 to include a monitor from the  
3367 Pueblo of Santa Clara for excavation work being conducted in Rendija Canyon. Overall the  
3368 comprehensive agreement and the use of monitors has been a tremendous success. The practice  
3369 will be continued in future excavations at LANL.  
3370

3371 The third issue is the necessity of revising and completing a set of comprehensive agreements  
3372 dealing with the issue of the inadvertent discovery of human remains or NAGPRA-related objects  
3373 at LANL. Inadvertently discovered sets of human remains found in 1998 and in 2003 have

3374 provided a number of lessons learned, although the old draft NAGPRA inadvertent discovery  
3375 plan did provide at least minimally satisfactory guidance in dealing with the remains discovered  
3376 in 2003. The revised inadvertent discovery comprehensive agreement is targeted for use by the  
3377 end of FY 2005.

3378

3379 The remaining NAGPRA issue is that of the request by the Pueblo of San Ildefonso to rebury the  
3380 human remains and identified NAGPRA-related objects at LANL. LASO and LANL are fully  
3381 aware that NAGPRA does not address reburial once the remains and objects have been  
3382 repatriated to the culturally affiliated tribes. However, both LASO and LANL upper management  
3383 have expressed their willingness to identify such a reburial site at LANL. This issue must be fully  
3384 resolved prior to the March 30, 2006, deadline for repatriation of the Land Conveyance and  
3385 Transfer Project human remains NAGPRA-related objects.

### 3386 **Native American Outreach**

3387 The Accord/Cooperative Agreements between LASO/LANL and the Accord Pueblos initiated a  
3388 period of dialog and support between and among these six entities. During the past five years the  
3389 LANL cultural resources program has been committed to continuing this spirit of cooperation.

3390

3391 In addition to basic field visits at LANL to view archaeological sites and proposed sites for  
3392 mission-related development, a number of cooperative endeavors have been undertaken. The  
3393 most notable ones are listed here.

3394 1. Nake'muu Monitoring Program (1997 to present). Systematic study of effects of  
3395 Laboratory operations and ambient environmental conditions on a unique (at LANL) 14th  
3396 century standing wall Ancestral Pueblo village. Conducted with the Pueblos of San  
3397 Ildefonso and Santa Clara.

3398 2. DOE/NNSA LANL Traditional Cultural Property Study (2000 to present). Working with  
3399 the Pueblos of San Ildefonso, Santa Clara, and Cochiti to identify, protect, and manage  
3400 TCPs at LANL.

3401 3. Cerro Grande Rehabilitation Project (2002 to 2003). Contracted Pueblos of Cochiti,  
3402 Jemez, San Ildefonso, and Santa Clara to conduct tree thinning, snag removal, and  
3403 erosion control on DOE/NNSA LANL land in aftermath of the May 2000 Cerro Grande  
3404 fire.

3405 4. Cerro Grande Fire Cultural Site Rehabilitation Project (2002 to 2003). Contracted  
3406 Pueblos of San Ildefonso and Santa Clara to conduct assessments and rehabilitation  
3407 activities at 118 Native American cultural sites on DOE/NNSA LANL land damaged by  
3408 the Cerro Grande fire.

3409 5. Land Conveyance and Transfer Project NAGPRA Tribal Monitors (2002 to present).  
3410 Contracted use of monitors from the Pueblos of San Ildefonso and Santa Clara to assist  
3411 LANL archaeologists in excavation of archaeological sites on land being transferred by  
3412 DOE/NNSA to Los Alamos County.

3413 6. DOE/NNSA LANL Trails Study (2003 to present). Working with the Pueblos of San  
3414 Ildefonso and Santa Clara along with other agencies, organizations, and individuals to  
3415 identify public trail usage in and around LANL to address cultural, environmental, safety,  
3416 security, and social impacts.

- 3417 7. Joint Tsirege Tour for LANL 60th Anniversary Celebrations (May 17, 2003). Tour of
- 3418 Ancestral Tewa Indian Pueblo of Tsirege and poster presentation jointly produced by
- 3419 Pueblo of San Ildefonso and the LANL Cultural Resources Team.
- 3420 8. Joint Presentation at National Congress of American Indians (November 18, 2003). Joint
- 3421 presentation by Pueblo of San Ildefonso and the LANL Cultural Resources Team
- 3422 discussing ongoing cooperative programs and Federal agency avenues for economic
- 3423 development.

3424 The Cerro Grande Fire Cultural Site Rehabilitation Project was particularly fruitful and beneficial  
 3425 for Ancestral Pueblo archaeological resources at the Laboratory (Figures 17.4 and 17.5), although  
 3426 all of these projects and activities have been important for outreach and collaboration. It is  
 3427 expected that a similar level of shared outreach will be conducted in future years.



3428  
 3429 **Figure 17.4. Pueblo of San Ildefonso members fence off an archaeological site along**  
 3430 **a fire road.**



3431  
 3432 **Figure 17.5. Spreading native seed after the Cerro Grande fire.**

3433 **PART V. Strategic Planning and Long-Term Management**  
3434 **Issues and Goals**

3435 **Section 18. Cultural Resources Management and LANL Strategic**  
3436 **Planning**

3437 Cultural resources management at LANL is part of a larger set of planning activities that all have  
3438 as their common goal the effective and prudent use of the LANL built environment and landscape  
3439 in support of the LANL DOE/NNSA mission. With this in mind, it is imperative that this LANL  
3440 Plan and its associated 10-Year LANL Plan Road Map be closely integrated with all other  
3441 planning initiatives and activities at LANL. And while the present LANL electronic Project  
3442 Review system is satisfactory for cultural resources evaluation of funded projects actively in  
3443 design and construction phase, it does not satisfactorily take into account other long-range  
3444 planning initiatives at LANL.

3445  
3446 Three such sets of long-range planning initiatives are considered here. These are the TYCSP, the  
3447 SWEIS, and individual facility strategic plans some of which presumably are in support of the  
3448 TYCSP.

3449 **Ten-Year Comprehensive Site Plan**

3450 The TYCSP is a major DOE/NNSA planning process conducted at LANL by the PM Division  
3451 that resulted from the February 2001 “Report to Congress from the Panel to Assess the  
3452 Reliability, Safety, and Security of the United States Nuclear Stockpile” (The Foster Panel  
3453 Report). The Foster Panel Report indicated that “parts of the weapons complex infrastructure are  
3454 defective; the production capabilities that remain are fragile.” As noted in the FY 2003 TYCSP,  
3455 the TYCSP planning process “provides crucial input to meeting the NNSA strategy to provide  
3456 state-of-the-art facility and infrastructure supported by advanced scientific and technical tools to  
3457 meet operations and mission requirements. These long-range facility and construction needs of  
3458 Los Alamos, as linked to projects and realistic budgets and projects, are addressed in this TYCSP.  
3459 Although not every project requested can be funded, a risk-based, cost-benefit approach is used to  
3460 plan and prioritize facility and construction needs for the Laboratory.”

3461  
3462 The following general problem areas are addressed in the FY 2003 TYCSP. As is readily  
3463 apparent from this list of problem areas and the suggested project solutions in the TYCSP, each  
3464 has the potential to affect cultural resources and to be affected by cultural resources.

- 3465 • Consolidate facility operations into fewer/smaller facilities to provide for more efficient  
3466 facility operations in support of missions.
- 3467 • Through Integrated Nuclear Planning, consolidate nuclear materials facilities within a  
3468 single security fence. A series of projects would replace over-50-year-old nuclear  
3469 facilities over approximately 8 to 10 years.
- 3470 • Replace vulnerable “temporary” structures to provide long-term office and light  
3471 laboratory space and to make land available for more appropriate use in meeting mission  
3472 requirements.
- 3473 • Upgrade or replace infrastructure (electricity, water, waste water, natural gas, roads, and  
3474 protection and communications systems) to ensure sufficient capacity and capability to  
3475 support ongoing and new missions.
- 3476 • Construct or modify existing facilities to meet specific program/campaign needs,  
3477 including expanded workforce.

3478 Three related sets of actions need to be pursued by LANL cultural resources staff in support of  
3479 this planning process. First, cultural resources managers need to provide timely input with respect  
3480 to locations being proposed for TYCSP projects in part to avoid or reduce impacts to key cultural  
3481 resources, and in part to provide the necessary cultural resources information to TYCSP project  
3482 planners to factor into their proposed designs. Second, cultural resources managers need to  
3483 prioritize their efforts at evaluating and reevaluating cultural resources for eligibility in the  
3484 Register (see Section 15) so as to reflect the priorities of the TYCSP and to maximize the  
3485 potential for land-use flexibility in support of the TYCSP. Third, cultural resources managers  
3486 need to continue to work closely with the staff of the FIRP. Such close coordination is necessary  
3487 to ensure that decontamination and decommissioning efforts not only meet the TYCSP planning  
3488 vision but also reflects the realities of cultural resources documentation schedules and is  
3489 consonant with this LANL Plan.

### 3490 **Site-Wide Environmental Impact Statement**

3491 In 1999, DOE released the SWEIS. This document recognized and stated that DOE proposed to  
3492 continue and expand operations at LANL in support of its national missions. The purpose of the  
3493 SWEIS was to evaluate the potential environmental impacts of continuing to operate LANL and  
3494 to receive and address comments from the public based on a draft of the document.

3495  
3496 To a certain extent this is a parallel planning process to that outlined in the TYCSP, however,  
3497 while the emphasis of the TYCSP is on infrastructure changes and enhancements of the  
3498 DOE/NNSA mission at LANL, the SWEIS focuses on the potential that these changes and  
3499 enhancements may have on the physical environment, including cultural resources. In fact, a  
3500 finding of the SWEIS was that LANL did not yet have a LANL Plan in place. The present LANL  
3501 Plan resulted in part from requirements spelled out in the subsequent Mitigation Action Plan for  
3502 the Record of Decision issued in 1999.

3503  
3504 In accordance with 10 CFR 1021.330(d) of the DOE NEPA Implementing Procedures, DOE shall  
3505 evaluate site-wide NEPA documents prepared under 1021.330(c) at least every five years to  
3506 determine if existing and projected LANL operations are still within the scope of operations and  
3507 impacts identified in the 1999 SWEIS and associated Record of Decision. As with the TYCSP,  
3508 LANL cultural resources staff work closely with the individuals evaluating the operating  
3509 parameters of the SWEIS to ensure cultural resources are fully evaluated as part of the overall  
3510 LANL environmental policy compliance.

### 3511 **Facility Strategic Plans**

3512 In addition to the recently mandated TYCSP described above, individual divisions and segments  
3513 of divisions periodically produce strategic plans to help guide their organizations into the future.  
3514 While much of this planning is now likely to be captured within the TYCSP, there will be a  
3515 continuing need for such internal planning as organizations reflect on and contend with future  
3516 directions.

3517  
3518 LANL cultural resources staff work with facility managers to identify the early stages of such  
3519 strategic planning and ensure that those involved in strategic planning are aware of potential  
3520 cultural heritage issues, such as might be involved in the renovation or demolition of a historic  
3521 building, or in the expansion of a facility into presently undeveloped areas. In turn, the cultural  
3522 resources managers shall be prepared to weigh risks and address alternatives in the attempt to  
3523 balance mission needs with cultural resources concerns. The goal of this dialog is to identify  
3524 potential resources issues early enough in the planning process so that maximum flexibility can

3525 be achieved to the extent feasible—including, if warranted, use of the prioritization strategy  
3526 outlined in Section 16.

3527 **Section 19. Prioritization Strategy for Register Eligibility**  
3528 **Determinations for Potentially Eligible**  
3529 **Archaeological Sites and the Reevaluation of**  
3530 **Selected Sites Previously Determined Eligible**

3531 The majority of known archaeological sites at LANL have never been formally evaluated with the  
3532 SHPO for their eligibility for listing in the Register. As of October 2004, a total of 1438 out of the  
3533 known 1933 archaeological sites at LANL (74.3%) fall into this category. In addition, a small but  
3534 substantive number of the 414 archaeological sites previously determined eligible for listing in  
3535 the Register have either lost their integrity since their initial discovery and evaluation or were  
3536 inadequately evaluated through lack of detailed study and testing. However, all of these sites are  
3537 considered eligible under the NHPA until definitive determination can be made.  
3538

3539 The end result is that strategic planners at LANL are unduly circumscribed in their ability to place  
3540 new facilities and infrastructure upgrades. A related problem is that funded projects are  
3541 sometimes delayed while historic preservation consultations are being conducted with the SHPO  
3542 and with Native American tribes. A recent example of these issues occurred in Mortandad  
3543 Canyon. A time-sensitive series of proposed characterization wells, borings, and other studies in  
3544 support of the New Mexico Environment Department compliance order at LANL had to be  
3545 postponed or redesigned due to the presence of a large (35-acre) Archaic period lithic scatter in  
3546 the central portion of Mortandad Canyon. It is the opinion of LANL archaeologists that the  
3547 testing of this site, in consultation with the SHPO and affiliated Native American tribes, would  
3548 reveal that the site is much smaller than originally defined, or perhaps even lacks the necessary  
3549 integrity for continued listing in the Register.  
3550

3551 It is therefore in the best interest of the DOE/NNSA mission at LANL to deal proactively with  
3552 these two related cultural resources management issues. A three-step approach is recommended.

- 3553 1. LANL cultural resources staff will work with LANL strategic planners and with the  
3554 TYCSP to identify those portions of LANL likely to be subject to land-use modifications  
3555 or to projects such as the compliance order noted above. These will then be prioritized by  
3556 the anticipated date for project activities and by the size and location of project areas with  
3557 respect to known archaeological sites. A similar effort will focus on the locations of  
3558 historic buildings. All remaining portions of LANL not being actively considered for  
3559 projects within the TYCSP or other strategic planning needs would be placed into a “low  
3560 priority” status.  
3561
- 3562 2. LANL cultural resources staff will identify all archaeological sites and historic buildings  
3563 and structures within these high-priority land-use modification locations and proposed  
3564 project areas that have not yet been evaluated for listing in the Register. Field checks  
3565 would be necessary for some of these sites.  
3566
- 3567 3. LANL cultural resources staff will identify all archaeological sites within these general  
3568 locations and proposed project areas that previously have been formally determined  
3569 eligible for listing on the Register that have the potential for modification or  
3570 reclassification—including delisting and removal from Register eligibility. If and where  
3571 appropriate, a similar effort will focus on historic buildings and structures.  
3572 Archaeological sites most likely falling into this category would include artifact scatters

3573 from all time periods. This includes Archaic period lithic scatters as noted for Mortandad  
3574 Canyon that are located in geomorphic contexts suggesting secondary deposition, as well  
3575 as fieldhouses or agricultural features that are situated on bedrock with no expectation for  
3576 subsurface archaeological deposits and features. Field checks would be necessary for all  
3577 of these sites, with the field checks potentially including subsurface testing.  
3578

3579 To make this approach as effective as possible it would be necessary to perform the evaluations  
3580 and consultations before the completion of project designs.

## 3581 **Section 20. Site Monitoring and Protection**

3582 Section 110 of the NHPA states that each Federal agency shall establish a preservation program for  
3583 the identification, evaluation, and nomination to the Register and protection of historic properties.  
3584 It further states that such program shall ensure

- 3585 • that historic properties under the jurisdiction or control of the agency are identified, evaluated,  
3586 and nominated to the Register;
- 3587 • that such properties under the jurisdiction or control of the agency as are listed in or may be  
3588 eligible for the Register are managed and maintained in a way that considers the preservation  
3589 of their historic, archaeological, architectural, and cultural values in compliance with Section  
3590 106 of this Act—that is determining the effect of the agency’s undertakings on cultural  
3591 resources—and gives special consideration to the preservation of such values in the case of  
3592 properties designated as having National significance; that the preservation of properties not  
3593 under the jurisdiction or control of the agency, but subject to be potentially affected by agency  
3594 actions are given full consideration in planning; and
- 3595 • that the agency's preservation-related activities are carried out in consultation with other  
3596 Federal, state, and local agencies, Indian tribes, and with the private sector; and that the  
3597 agency's procedures for compliance with Section 106 of this Act provide a process for the  
3598 identification and evaluation of historic properties for listing in the Register and the  
3599 development and implementation of agreements, in consultation with SHPOs, local  
3600 governments, Indian tribes, and the interested public, as appropriate, regarding the means by  
3601 which adverse effects on such properties will be considered; and provide for the disposition of  
3602 Native American cultural items from Federal or tribal land in a manner consistent with the  
3603 NAGPRA.

3604  
3605 DOE Policy 141.1 further states that “DOE will uphold historic preservation laws by preserving,  
3606 protecting, and perpetuating cultural resources for future generations in a spirit of stewardship  
3607 to the extent feasible given the agency’s mission and mandates. To do this, DOE will implement  
3608 management accountability for compliance with Federal statutes, EOs, DOE orders, and  
3609 implementation guidance. The Department also ensures that DOE contractors are obligated to  
3610 implement DOE program and projects in a manner that is consistent with this Policy and that  
3611 reflects this commitment in site management contracts.”  
3612

3613 A number of projects over the years have been specifically implemented to help protect heritage  
3614 resources at LANL, particularly in response to the Cerro Grande fire. For example, the previously  
3615 highlighted fencing of archaeological sites along fire roads (see Figure 17.4) and the spreading of  
3616 native seed on eroded archaeological sites (see Figure 17.5) illustrate positive efforts to  
3617 rehabilitate and protect resources. Also of great benefit has been the cutting and removal of snags  
3618 (standing dead trees due to fire and drought) around sensitive archaeological sites as that of  
3619 Nake’muu (Figures 20.1 and 20.2), and tree thinning in and around archaeological sites  
3620 throughout much of the Laboratory.



3621

3622

3623

3624

**Figure 20.1. Snag removal at Nake'muu to decrease risk of possible damage to standing walls.**



3625

3626

3627

**Figure 20.2. Overhanging branches are removed from a snag at Nake'muu to minimize chance of damage to standing walls.**

3628 An important aspect of the LANL Plan is the field monitoring of those significant cultural  
3629 resources most vulnerable to impacts by vandalism, natural erosion or decay, or mission  
3630 activities. Typically, most cultural resources eligible for listing in the Register should be  
3631 periodically monitored, but monitoring can vary in duration depending on the fragility and  
3632 sensitivity of the resource. Some resources require monitoring on a yearly or even more frequent  
3633 basis, while other resources can be adequately monitored every few years.

3634  
3635 The best example of detailed yearly monitoring is that which has been done since 1999 for the  
3636 Ancestral Pueblo site of Nake'muu. The construction and use of the Dual-Axis Radiographic  
3637 Hydrodynamic Test Facility a few hundred meters to the northeast, raised concerns that sound  
3638 vibrations from the testing might have an effect on the standing walls at Nake'muu. Studies have  
3639 included use of motion and vibration sensors, stress gauges, and similar equipment during  
3640 practice shots (Figures 20.3 and 20.4), as well as comparison with historic photographs and actual  
3641 quantitative counts of the loss of chinking stones each year (Figures 20.5 and 20.6). Studies are  
3642 still ongoing, but preliminary results suggest that the amount of snowfall in a given year may be  
3643 the single biggest contributor to the loss of chinking stones and impacts on the overall integrity of  
3644 standing walls.

3645  
3646 The LANL site monitoring program will concentrate its efforts on three general categories of site.  
3647 The first consists of a yearly monitoring effort devoted to an examination of a percentage of those  
3648 archaeological sites and historic buildings and structures contained in the proposed landmarks and  
3649 national register districts described in Sections 15 and 16. Those "sensitive" sites outside of the  
3650 national register historic district boundaries noted in Section 16 will also be included in this first  
3651 category. The monitoring of sites in this category should be conducted in such a way that the  
3652 most critical and sensitive are visited on an annual or biannual basis, with the remainder of the  
3653 sites visited on the average of at least once every five years.

3654  
3655 A second category of sites for monitoring consists of those important resources known to be  
3656 moderately or severely impacted and compromised by ongoing erosion, recreational trail use,  
3657 infrastructure activities, or other actively damaging situation. There are currently 21 of these "at  
3658 risk" sites at LANL. These include LA 170, LA 350, LA 352, LA 4718, LA 4719, LA 82602, LA  
3659 12597, LA 12743, LA 20969, LA 21972, LA 65909, LA 70023, LA 115372, LA 126548, LA  
3660 130569, LA 139513, LA 139514, LA 139573, LA 139576, LA 143903, and temporary site no.  
3661 SWEIS II-8. These likely require yearly monitoring until such time as conditions may improve,  
3662 including through rehabilitation activities.

3663  
3664 The third category of sites for monitoring consists of those sites potentially threatened by  
3665 infrastructure activities at LANL, but have not yet been obviously impacted. Table 3 provides a  
3666 list of approximately 400 archaeological sites in this category. The monitoring of 400 sites in this  
3667 category should be done by the yearly sampling of a modest percentage (10% to 20%).

3668  
3669 It is anticipated that the actual field monitoring would be conducted by two individuals during a  
3670 portion of the spring, summer, and fall months. Monitoring should take approximately one hour  
3671 on the average, for example, for sites such as pueblo roomblocks, with cavate complexes  
3672 requiring considerably more time and fieldhouses requiring considerably less time. Site  
3673 monitoring would include visual inspection to detect any vandalism that may have occurred  
3674 recently or since the last inspections. Photography, including repeat photography of selected  
3675 locations experiencing ongoing erosion, the filling out of a field monitoring form, and GPS  
3676 recording of specific locations experiencing or subject to problems will constitute the primary  
3677 tools of the site-monitoring program.



3678

3679 **Figure 20.3. LANL employees and San Ildefonso monitors stand behind electronic**  
3680 **equipment used to measure vibrations during a test shot.**

3681

3682



3683

3684 **Figure 20.4. This vibration sensor sits on the top of a standing wall at Nake'muu.**

3685



3686

3687 **Figure 20.5. Comparison to historic photographs helps illustrate the rate of the**  
3688 **loss of parts of the standing wall.**

3689

3690



3691

3692 **Figure 20.6. Periodic quantitative counts of chinking stones helps with the**  
3693 **temporal assessment.**

3694

3695  
3696

**Table 3. Numbers of Archaeological Sites by Technical Area Potentially Subject to LANL Infrastructure Impacts**

TA	Electric	Gas	Water	Dirt Roads	Fire Roads	Paved Roads	Trails	Structures	Firing Points	Cumulative Sum	Actual Sum
2	0	0	1	0	0	0	1	0	0	2	2
3	2	2	1	1	0	2	3	2	0	13	4
5	1	0	1	18	12	0	8	2	0	42	17
6	3	0	0	4	0	0	0	2	0	9	6
8	2	1	4	1	0	1	2	1	0	12	4
9	1	0	0	1	0	0	0	0	0	2	1
11	1	0	0	0	0	0	0	0	0	1	1
14	1	1	1	2	2	1	0	0	0	8	2
15	4	3	5	7	8	2	1	6	1	37	21
16	8	5	5	10	0	1	0	1	0	30	16
18	2	1	1	2	0	0	0	2	0	8	2
21	0	1	2	1	0	1	1	1	0	7	3
22	0	0	0	1	0	0	0	0	0	1	1
33	6	1	2	9	1	2	0	2	0	23	15
36	26	0	1	58	34	7	0	4	1	131	75
37	0	0	0	3	0	1	0	1	0	5	4
39	9	6	6	30	27	4	5	2	0	89	36
40	1	1	0	1	0	0	0	0	0	3	1
41	0	0	0	0	0	0	0	1	0	1	1
43	2	2	0	0	0	2	1	0	0	7	2
46	2	1	4	3	3	4	0	3	0	20	8
48	0	0	1	0	0	0	0	0	0	1	1
49	9	5	5	13	4	3	0	2	0	41	18
50	1	0	1	0	0	0	0	0	0	2	1
51	7	3	7	12	0	0	0	4	0	33	18
52	1	0	1	0	0	0	0	3	0	5	3
53	6	7	8	7	0	3	1	15	0	47	18
54	9	3	14	17	2	7	0	11	0	63	29
55	1	0	1	0	1	1	0	1	0	5	1
59	0	0	1	0	0	0	0	0	0	1	1
60	2	0	0	2	1	0	0	0	0	5	3
61	0	1	1	0	2	1	1	1	0	7	2
62	3	0	1	1	0	1	0	0	0	6	3
64	1	1	1	1	0	0	0	1	0	5	1
66	0	0	0	1	0	0	0	0	0	1	1
67	0	0	0	2	3	0	0	0	0	5	4
68	0	0	0	4	4	1	0	0	0	9	5
69	2	0	1	0	1	2	1	0	0	7	3
70	4	0	0	22	0	0	21	0	0	47	26
71	5	0	0	18	1	1	10	0	0	35	20
72	8	5	3	7	5	4	4	0	0	36	22
73	2	0	0	1	1	0	1	1	0	6	3
74	1	0	0	6	4	0	3	0	0	14	9
<b>SUM</b>	<b>133</b>	<b>50</b>	<b>80</b>	<b>266</b>	<b>116</b>	<b>52</b>	<b>64</b>	<b>69</b>	<b>2</b>	<b>832</b>	<b>414*</b>

3697

\*this total includes 14 duplicate numbers that span two or more TAs; the actual total number of sites is 400

3698 A brief yearly report will be produced after the end of each FY. This brief report will document  
3699 the sites that were monitored during the course of the previous year and discuss those issues and  
3700 problems discovered and documented during the monitoring process. This report will help to  
3701 serve as a guide for programming preservation actions and needs in subsequent years.  
3702

3703 TA-70 and TA-71 present a special case for archaeological site monitoring and protection. These  
3704 TAs are situated immediately adjacent to the community of White Rock. For the past 45 years  
3705 these areas have been utilized for recreational hiking and horseback riding by residents of White  
3706 Rock, in particular, but also by residents of the Los Alamos town site. There are a number of  
3707 archaeological sites, including Archaic period lithic scatters and Ancestral Pueblo roomblocks,  
3708 that are situated under and along some of the trails. The LANL Trails Management Working  
3709 Group, set up by LANL and LASO in response to an Environmental Assessment study (2003) of  
3710 trails use at LANL, has reached an initial conclusion that for a number of reasons it would not be  
3711 in the best interest of LANL to completely close these trails, although it may be possible to  
3712 reroute some of the trails around or away from archaeological sites.  
3713

3714 In addition to the possibility of rerouting trails, this area represents an ideal situation for the use  
3715 of volunteer archaeological site stewards to take on the responsibility of periodic monitoring of  
3716 these specific resources. The New Mexico Historic Preservation Division has recently established  
3717 a program called New Mexico SiteWatch. The program consists of volunteers who become  
3718 trained to monitor valuable resources on public (Federal, state, or local) lands near their homes.  
3719 The New Mexico SiteWatch program lists the following in their Statement of Purpose:

- 3720 • Prevention of cultural resource destruction due to acts of nature, theft, or vandalism
- 3721 • Utilization of the knowledge, skills, and abilities of New Mexico's citizens
- 3722 • Raising public awareness of the value of historic preservation through education and outreach
- 3723 • Promoting cooperation between communities, agencies, and individuals throughout the state
- 3724 • Organizing citizens into a group that makes a measurable difference in their own quality of  
3725 life
- 3726 • Stewardship of an irreplaceable resource in perpetuity
- 3727 • Enhancing knowledge of New Mexico's unique history

3728  
3729 These goals are compatible with LANL's site protection program. It is appropriate and worthwhile  
3730 for the LANL cultural resources program to work with the LASO, LANL Security forces, SHPO,  
3731 and the community of White Rock to establish such a site steward program for TA-70 and TA-71.  
3732 Depending on the success of the program, it could be expanded to encompass other appropriate  
3733 portions of LANL, such as TA-72 near its junction with State Route 4.

## 3734 **Section 21. Educational Outreach and Interpretation**

3735 Educational outreach and the dissemination of cultural resources management information are  
3736 important aspects of LANL's historic preservation program. The public is the ultimate  
3737 beneficiary of NHPA documentation conducted by LANL. Outreach and interpretation options  
3738 include public tours and lectures, museum exhibits, written publications (summary history  
3739 pamphlets and general audience reports), video productions, and history and cultural resources  
3740 management web pages with links to online reports. The site steward program noted in Section  
3741 20, would also serve the purposes of educational outreach, as noted in the Statement of Purpose  
3742 for the New Mexico SiteWatch program.

3743 An important aspect of the outreach program would be to work closely with neighboring Federal  
3744 and municipal agencies toward common goals. For example, Los Alamos County has a trails

3745 initiative (Los Alamos County Open Space Program Trail Network Plan) that should be  
3746 considered for integration with the LANL treatment of historic trails and Homestead period roads.  
3747 In a similar vein, participation in the cultural resources subcommittee of the East Jemez Resource  
3748 Council has benefited the LANL cultural resources program. Other examples have included the  
3749 removal of the Homestead era Romero Cabin from TA-55 in the mid-1980s, and its repair and  
3750 refurbishment for exhibit near Fuller Lodge in downtown Los Alamos (Figures 21.1 and 21.2).  
3751 Yet another example was the salvaging of two historic candy kettles that were impacted by the  
3752 Cerro Grande fire (Figure 21.3). These kettles were originally used during the Manhattan Project  
3753 to mix high explosives, and one of them has been exhibited and interpreted at public venues, such  
3754 as the exhibit of Manhattan Project paintings, photos, and artifacts from December 21, 2001,  
3755 through January 18, 2002, at the Governor's Gallery at the State Capital Building, Santa Fe  
3756 (Figure 21.4).

3757  
3758 To facilitate an outreach program that effectively deals with the cultural heritage at LANL, in  
3759 September 2005, the Laboratory created a Cultural Resource Council that meets on a quarterly or  
3760 biannual basis. Members of this organization include representatives from the LANL Ecology  
3761 Group Cultural Resources Team, the Environmental Stewardship Division at LANL, the LANL  
3762 Tribal Relations Team, the LANL Historian/Archivist, the Bradbury Museum, the Los Alamos  
3763 Historical Society, Los Alamos County, Bandelier National Monument, the Pueblos of San  
3764 Ildefonso and Santa Clara, the Homestead Association, and the New Mexico Citizens Advisory  
3765 Board. Other members may be added at a later date.

3766  
3767 Inreach activities that support LANL employees are also important—they provide employees  
3768 with a connection to the roots of this organization and help them place themselves within the  
3769 institutional history. Examples of inreach activities include conducting employee tours and  
3770 preparing brief facility histories for use during site-specific new-hire orientations. At LANL,  
3771 many exceptionally significant buildings and structures are located in areas normally closed to the  
3772 general public. Kiosks or interpretative monuments placed at these locations would certainly play  
3773 an important inreach function.  
3774



3775

3776

**Figure 21.1. The Romero Cabin at its original location.**



3777

3778

**Figure 21.2. The same cabin rehabilitated and relocated next to Fuller Lodge.**



3779

3780

3781

**Figure 21.3. Candy kettles used to mix high explosives are seen here after the Cerro Grande fire.**



3782

3783 **Figure 21.4. Manhattan Project candy kettle (see Figure 21.3, right side) and paintings**  
3784 **on display at the Governor’s Gallery at the State Capital Building.**

## 3785 **Section 22. Procedures for Emergency Situations**

3786 The NHPA states that normal Section 106 review can be suspended during emergency or repair  
3787 work to minimize hazards to human health or to the environment, or declared disasters,  
3788 emergencies, or national security threats. Such emergency actions will be immediately reported to  
3789 the SHPO as conditions permit, and will be evaluated and reported to the SHPO in a timely  
3790 basis—normally within one month after the termination of the emergency—for impacts to  
3791 historic properties.

3792

3793 The LANL Emergency Operations Center (EOC) has been established to deal with a variety of  
3794 emergency situations that may arise at LANL and in the immediate area surrounding LANL. For  
3795 example, the EOC was the center of operations for dealing with the May 2000 Cerro Grande fire  
3796 (Figure 22.1). Cultural resources personnel are part of the overall LANL presence at the EOC so  
3797 as to ensure that environmental issues, including cultural heritage, are taken into account to the  
3798 extent practicable during all emergency management activities. Members of the Cultural  
3799 Resources Team have been trained to work at the EOC and to coordinate their efforts with the  
3800 staff of the EOC.

3801

3802 As demonstrated by the May 2000 Cerro Grande fire, emergency situations and their responses  
3803 can have a detrimental impact on cultural resources. Of approximately 500 archeological sites  
3804 evaluated for fire damage during the two years following the fire, more than 150 evidenced at  
3805 least some fire effects or suppression damage (Figures 22.2 and 22.3). The fire also created  
3806 special long-term problems, such as an enhanced potential for flooding due to the extreme  
3807 burning of the upper watersheds of several canyons that flow onto Laboratory property. This led  
3808 to some innovative protection measures for canyon-bottom resources such as the Pond Cabin in  
3809 Pajarito Canyon (Figure 22.4).



3810  
3811

**Figure 22.1. Cerro Grande fire moving onto LANL land.**



3812  
3813

**Figure 22.2. Archaeological site damaged by the Cerro Grande fire.**



3814

3815

**Figure 22.3. Archaeological site after the Cerro Grande fire.**



3816

3817

3818

**Figure 22.4. The Pond Cabin was enclosed to protect it from possible flash flooding after the Cerro Grande fire.**

3819 An important outcome of the fire assessment was the implementation of a series of rehabilitation  
3820 measures at 107 damaged or imperiled archaeological sites to help reduce the long-term effects of  
3821 the fire and to reduce the likelihood that future fire suppression efforts would additionally damage  
3822 the sites.

3823  
3824 The creation of an emergency disaster plan, treating key sites and portions of districts, will be part  
3825 of management preservation plans for the two potential NHL Districts and for the potential  
3826 National Register Historic District.  
3827

## 3828 **PART VI. Safety, Security, and Quality Assurance**

### 3829 **Section 23. Archaeological and Historic Preservation Field and** 3830 **Laboratory Safety and Security**

3831 All archaeological and historic preservation fieldwork performed at LANL is conducted in a safe  
3832 and secure manner fully consonant with DOE/NNSA and LANL policy and standards.  
3833

3834 In terms of safety, this includes reading and understanding institutional safety philosophy and job  
3835 specific hazards analysis and safety plans. The key is an integrated safety management approach  
3836 in which every employee has the right and duty to perform work safely and to immediately  
3837 question and report unsafe or potentially unsafe conditions. All cultural resources workers,  
3838 particularly supervisory personnel, should be aware of and practice the five-step ISM Process in  
3839 which (1) the work to be done is clearly defined; (2) the hazards are thoroughly evaluated; (3)  
3840 necessary controls to minimize or eliminate hazards are put into place; (4) the work is performed  
3841 in a safe manner; and (5) the work performance is properly evaluated and safety improvements  
3842 are put in place, if necessary, for future work.  
3843

3844 Currently, field safety measures include daily tailgate safety briefings (Figure 23.1). It also entails  
3845 a series of integrated work documents (IWD) prepared by project managers and specialists that  
3846 define as pertinent and practicable all hazards associated with the specific job being done and  
3847 provides procedures to minimize the hazards. All workers must sign these documents and the  
3848 field supervisor must take responsibility for ensuring that the IWD is satisfactorily implemented.  
3849

3850 In addition to the IWDs, there are a number of formal procedures that have been designed to  
3851 ensure that all work conducted by the cultural resources program at LANL is conducted in a safe  
3852 and efficient manner. These are discussed in Section 25.  
3853

3854 Each Laboratory employee shares a responsibility to protect classified and unclassified controlled  
3855 information. Archaeological and historic preservation fieldwork often entails working in  
3856 classified areas requiring escorts for uncleared personnel or working with archival documents that  
3857 may contain classified or unclassified controlled information. A common example of the latter is  
3858 the fact that all maps depicting archaeological site location information are considered “Official  
3859 Use Only” and are not to be shared with the general public. All cultural resources staff must be  
3860 properly trained in safeguards and security, including computer security, to the degree or level  
3861 required by their position and by the job that they perform.  
3862



3863

3864

**Figure 23.1. A tailgate safety briefing takes place before fieldwork begins.**

3865

### **Section 24. Cultural Resources Management Administrative Record**

3866

3867

A cultural resources management administrative record is kept on file at LANL. The administrative record currently contains documentation of all formal and some informal Native American consultation. It also contains documentation of all correspondence with regulators, including the New Mexico SHPO and the ACHP. Select formal correspondence between LANL and LASO is also maintained in the administrative record. LANL maintains records of public outreach activities performed by cultural resources staff members in support of cultural resources management at LANL.

3874

3875

LASO is encouraged to conduct audits of these records on at least a yearly basis. The first such audit is suggested to take place during the 4th quarter of FY 2005. Subsequent audits will be at the discretion of LASO.

3876

3877

3878

### **Section 25. Cultural Resources Management Quality Assurance Program**

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3880

As a required aspect of LANL environmental programs, the cultural resources program operates under the Ecology Group Quality Management Plan and a Cultural Resources Management Quality Assurance Program Plan. These plans are designed to ensure that programs and associated projects are carried out efficiently and responsibly, with clear guidance as to how quality control is maintained throughout their performance.

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In addition to these general quality assurance documents, the cultural resources program operates under the guidance of currently 18 sets of detailed procedures through which normal daily activities are conducted. These 18 procedures encompass a wide range of activities including project review, archaeological survey, excavation, laboratory work, GPS and GIS data management, historic buildings/structures fieldwork and documentary research, and the application of NHPA integrity and significance standards. A complete list of procedures is provided in Appendix B.

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## 3892 **Appendix A. 10-Year Road Map for the LANL Plan**

3893 This 10-Year Road Map (Road Map) for the Los Alamos National Laboratory (LANL) Cultural  
3894 Resources Management Plan (LANL Plan) represents a prioritization of the effort necessary to  
3895 achieve the goals of the LANL Plan. These goals include not only the cost-effective and efficient  
3896 long-term management and protection of significant heritage resources at LANL, but also an  
3897 aggressive approach to enhancing land-use flexibility. The Road Map will be reviewed on a  
3898 yearly basis. It is emphasized, however, the implementation of the road map is contingent on  
3899 available funding.

3900  
3901 The Road Map has identified a total of 25 tasks to be variously carried out during fiscal year (FY)  
3902 2005 through FY 2014 (Table A-1). These tasks are divided into two groups. The first 18 tasks  
3903 (1–18) represent short-term, typically between one- to three-year projects, intended to address  
3904 specific resource issues. The second group includes seven tasks (A–G). These represent a set of  
3905 programmatic activities intended to take place throughout the life of the LANL Plan and its  
3906 subsequent iterations, and which provide the minimum effort required to successfully implement  
3907 the Road Map. An example of programmatic activities would be the yearly monitoring of  
3908 potential National Historic Landmark and National Register District properties.

3909  
3910 Table A-1 represents the estimated schedule for implementing the Road Map. The 25 tasks  
3911 themselves are briefly summarized below.

3912  
3913 **Task 1 --- LANL Plan Meetings/Reviews/Finalizing.** This task represents the effort necessary to  
3914 finalize the language and content of the LANL Plan through meetings with various stakeholders,  
3915 including regulators, tribes, and the general public.

3916  
3917 **Task 2 --- Significance Evaluation Criteria for Historic Buildings and Archaeological Sites.** This  
3918 task includes the development of a set of significance criteria that will help standardize the  
3919 process for evaluating the historic significance of archaeological sites throughout LANL in terms  
3920 of their eligibility for listing in the Register. As part of this effort, historic context studies will  
3921 also be prepared for the topics of the Cold War (1946–1989), Homesteads (1890–1943), and for  
3922 Homestead and Manhattan Project roads and trails (1890–1946). The intent of this task is to  
3923 streamline part of the effort necessary to process the current backlog of 1356 archaeological sites  
3924 that have not yet been evaluated for the Register. The National Historic Preservation Act Section  
3925 106 compliance review process currently is bogged down by the need to consider individual  
3926 buildings and structures, trails and roads, or small groups of such features on a case-by-case,  
3927 project-by-project basis. The development of the historic contexts may lead to the preservation  
3928 and protection of a few buildings and structures, and roads and trails, and the determination that  
3929 all other such sites are not eligible for listing in the Register. Although the May 2000 Cerro  
3930 Grande fire considerably damaged many of the homesteads at LANL, there are a number of  
3931 homestead features, such a fencelines and trash deposits, which have only minor information  
3932 value. The development of the Homestead historic context may lead to the preservation and  
3933 protection of a few homestead features and the determination that all other such features are not  
3934 eligible for listing in the Register.

3935  
3936 **Task 3 --- Global Positioning System [GPS] Site Updates/Database Management.** A total of 386  
3937 of the known previously recorded archaeological sites at LANL have not yet been subjected to  
3938 the spatial coordinate precision achieved by the use of GPS technology. Accurate site boundaries  
3939 and site locations are important elements in land-use flexibility and in making effective  
3940 evaluations in the LANL new project review process. This task permits the timely updating of site

**Table A-1. Tasks Included in the 10-Year Road Map.**

SHORT TERM PROJECT TASK LIST		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
NO.												
1	Meetings/Review/Finalizing											
2	Significance Evaluation Criteria: Historic Buildings and Archaeological Sites											
3	Global Positioning System (GPS) Site Updates/Database Management											
4	Environmental Restoration (ER) Project Report Completion & SHPO consult											
5	Completion of Cerro Grande Rehabilitation Project (CGRP) Arch. Site Recording											
6	Historic Buildings Register Evaluation											
7	Archaeological Survey, Tsirege ---52 acres (plus detailed cavate recording)											
8	Manhattan Project National Historic Landmark Package											
9	Archaeological Survey, Sandia/Montandad Cave Kiva Complex --- 318 acres											
10	Pajarito Plateau Ancestral Pueblo National Historic Landmark Package											
11	Archaeological Survey of TA-7071/72 --- 1352 acres											
12	Archaeological Survey, LANSCE --- 411 acres											
13	Archaeological Survey, Pajarito&Two Mile Canyons/Mesita del Buey --- 165 acres											
14	Archaeological Survey, TA-58/62 --- 176 acres											
15	Archaeological Survey, TA-68 --- 291 acres											
16	Archaeological Survey, TA-33 --- 953 acres											
17	Modeling and Testing Artifact Scatters for Subsurface Integrity											
18	Pajarito Plateau Archaeological Park National Register Historic District Package											

LONG TERM PROGRAM FUNCTION TASK LIST		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
NO.												
A	Historic Properties Site Monitoring --- Landmark & Register District Sites											
B	Historic Properties Site Monitoring --- At Risk Sites + LANL Sample											
C	LANL Strategic Planning Coordination											
D	Native American TCP/NAGPRA Consultation and Outreach											
E	Heritage Resources Public Education Outreach and LANL Inreach											
F	White Rock TA-7071 Site Steward Program											
G	Cultural Heritage Resources Management Plan Update											

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A-2

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3951 location information for these 386 sites. In addition to adding these precise boundaries to the  
3952 Geographic Information System (GIS) database, the associated tabular information for all site  
3953 database tables will be corrected to reflect changes in status and other physical attributes that  
3954 have resulted from field checks, formal consultations with the New Mexico State Historic  
3955 Preservation Officer (SHPO), and cultural resources program survey and excavation projects.  
3956

3957 **Task 4 --- Environmental Restoration (ER) Project Report Completion and SHPO Consultation.**  
3958 This is a provisional task to be included in the LANL Plan Road Map if outside funding cannot be  
3959 obtained for its support. The task includes completion of 14 archaeological survey reports and  
3960 subsequent consultation with the SHPO for LANL environmental compliance projects dating  
3961 between 1991 through 1995. Thirteen projects were part of the LANL ER Project study of canyon  
3962 bottoms throughout LANL, while the other was in support of a Resource Conservation and  
3963 Recovery Act project. Funding was not available to complete the recording of archaeological sites  
3964 and the submittal of the finalized report to the SHPO and the New Mexico Archaeological  
3965 Records Management Section (ARMS). Completion of these reports is not only a critical  
3966 compliance issue but also will help facilitate and streamline the new project review process for  
3967 new construction and other infrastructure projects at LANL.  
3968

3969 **Task 5 --- Cerro Grande Rehabilitation Project (CGRP) Archaeological Site Recording.** This is a  
3970 provisional task to be included in the LANL Plan Road Map if outside funding cannot be  
3971 obtained for its support. This task includes the completion of the recording of approximately 460  
3972 archaeological sites discovered on previously unsurveyed lands at LANL during the course of  
3973 tree-thinning operations between FY 2001 and FY 2004 as part of the CGRP. In order to permit  
3974 the timely completion of CGRP tree-thinning activities, LANL was under formal agreement with  
3975 the SHPO that these sites could be marked for avoidance but would not be recorded until the  
3976 conclusion of CGRP activities. The CGRP provided funds for the recording of only 60 of these  
3977 sites. Completion of these records and submittal to SHPO and ARMS is not only a critical  
3978 compliance issue but also will help to facilitate and streamline the new project review process for  
3979 new construction and other infrastructure projects at LANL.  
3980

3981 **Task 6 --- Historic Buildings Register Evaluation.** An architectural review has not yet been  
3982 performed for approximately 100 early Cold War (1946–1963) buildings and structures, along  
3983 with a few potentially exceptionally significant more recent buildings and structures, that have  
3984 been identified as potentially eligible for the Register. This task provides the effort needed by a  
3985 historical architect to conduct such a review.  
3986

3987 **Task 7 --- Archaeological Survey of Tsirege.** A systematic archaeological inventory survey has  
3988 never been conducted of the Tsirege Pueblo complex, proposed as part of the LANL Ancestral  
3989 Pueblo National Historic Landmark. A survey needs to be conducted of this important area to  
3990 provide baseline information for long-term management and protection of the resources. It is  
3991 anticipated that the survey would include a team of three archaeologists.  
3992

3993 **Task 8 --- Manhattan Project National Historic Landmark Package.** This task consists of the  
3994 effort necessary to put together the required package for nominating the five identified  
3995 components of the potential Manhattan Project National Historic Landmark. The package would  
3996 include specific historical contexts, component descriptions, and boundary definitions.  
3997

3998 **Task 9 --- Archaeological Survey of Sandia Cave Kiva, Sandia Pueblo, and Mortandad Cave  
3999 Kiva Complex.** A systematic archaeological inventory survey has never been conducted of the  
4000 Sandia Cave Kiva, Sandia Pueblo, and Mortandad Cave Kiva complex, proposed as part of the  
4001 LANL Ancestral Pueblo National Historic Landmark. A survey needs to be conducted of these

4002 important areas to provide baseline information for long-term management and protection of the  
4003 resources. Approximately 318 acres will need to be surveyed. It is anticipated that the survey  
4004 would include a team of three archaeologists.

4005

4006 **Task 10 --- LANL Ancestral Pueblo National Historic Landmark Package.** This task consists of  
4007 the effort necessary to put together the required information package for nominating the four  
4008 identified spatially separated components of the potential LANL Ancestral Pueblo National  
4009 Historic Landmark. The package would include a specific historical context, component  
4010 descriptions, and boundary definitions for each of these components.

4011

4012 **Task 11 --- Archaeological Survey of Technical Areas (TAs) 70, 71, 72.** A systematic  
4013 archaeological inventory survey has never been conducted of much of TA-71 immediately next to  
4014 White Rock or of TA-70 adjacent to TA-71. Residents of White Rock have long utilized the trails  
4015 transiting the area for various recreational purposes including hiking and horseback riding. A  
4016 survey needs to be conducted of this important area to provide baseline information for long-term  
4017 management and protection of the resources. There are approximately 245 acres in TA-71 and  
4018 1150 acres in TA-70 that remain to be surveyed. It is anticipated that a team of three  
4019 archaeologists would perform the survey.

4020

4021 **Task 12 --- Archaeological Survey of Los Alamos Neutron Science Center (LANSCE).** A  
4022 systematic archaeological inventory survey has not been previously conducted for approximately  
4023 411 acres in the vicinity of the LANSCE facility. It is anticipated that a team of three  
4024 archaeologists would perform the survey.

4025

4026 **Task 13 --- Archaeological Survey of Pajarito & Two Mile Canyons and Mesita del Buey.** A  
4027 systematic archaeological inventory survey has not been previously conducted for approximately  
4028 165 acres in Pajarito and Two Mile Canyons and on portions of Mesita del Buey in TA-54. It is  
4029 anticipated that a team of three archaeologists would perform the survey.

4030

4031 **Task 14 --- Archaeological Survey of TAs 58 and 62.** A systematic archaeological inventory  
4032 survey has not been previously conducted for portions of TA-58 and TA-62. The unsurveyed area  
4033 contains approximately 176 acres immediately west and south of TA-3. It is anticipated that a  
4034 team of three archaeologists would perform the survey.

4035

4036 **Task 15 --- Archaeological Survey of TA-68.** A systematic archaeological inventory survey has  
4037 not been previously conducted for approximately 291 acres in TA-68. It is anticipated that a team  
4038 of three archaeologists would perform the survey.

4039

4040 **Task 16 --- Archaeological Survey of TA-33.** A systematic archaeological inventory survey has  
4041 not been previously conducted for approximately 953 acres in TA-33. It is anticipated that a team  
4042 of three archaeologists would perform the survey.

4043

4044 **Task 17 --- Modeling and Testing Artifact Scatters for Subsurface Integrity.** This task consists of  
4045 the development of a set of geomorphic criteria to categorize the likely integrity of archaeological  
4046 sites and thus their suitability for listing in the Register. Sites located on geomorphically unstable  
4047 surfaces like alluvial fans or floodplains are probably the result of erosion and are not in their  
4048 original primary context. The intent of this task like that of Task 2 is to streamline part of the  
4049 effort necessary to process the current backlog of 1305 archaeological sites that have not yet been  
4050 evaluated for the Register. However, this task also will look at a number of artifact scatters  
4051 previously deemed eligible for the Register but which likely now lack sufficient integrity to still  
4052 qualify for listing. This task will utilize aspects of the cultural resources program GIS to look at

4053 the spatial relationship between archaeological sites and certain geomorphic landforms as an aide  
4054 to the assessment of site integrity. This task also involves the systematic archaeological  
4055 subsurface testing of artifact scatters to determine their integrity and to also determine the  
4056 boundaries of those sites deemed eligible for listing in the Register. The modeling performed in  
4057 Task 3 will assist in the identification of those sites requiring subsurface testing.  
4058

4059 **Task 18 --- Pajarito Plateau Archaeological Park National Register Historic District Package.**  
4060 This task consists of the effort necessary to put together the required information package for  
4061 nominating the 10 spatially separate components and the more than 200 individual archaeological  
4062 sites of the potential LANL Ancestral Pueblo National Register Historic District. The package  
4063 would include a specific historical context, component descriptions, and boundary definitions.  
4064

4065 **Task A --- Historic Properties Site Monitoring --- Landmark and Register District Sites.** The  
4066 potential National Historic Landmarks and National Register Districts components are of such  
4067 importance and significance to require periodic monitoring. Some sites and components will  
4068 require yearly monitoring due to their fragile or sensitive nature, while others can be monitored  
4069 once every two or three years. This task is designed to facilitate monitoring of these resources  
4070 using standardized procedures and techniques. It is anticipated that the monitoring effort would  
4071 entail a team of two cultural resources program staff members.  
4072

4073 **Task B --- Historic Properties Site Monitoring --- At Risk Sites & LANL Sample.** More than 20  
4074 significant archaeological sites are known to be at risk due to erosion and known or potential  
4075 vandalism. These need to be closely monitored on a yearly basis until such time as conditions  
4076 may improve. In addition, more than 400 significant archaeological sites are in locations of  
4077 potential risk due to LANL mission-related activities. These would include sites transected by  
4078 utility corridors (electric, gas, water, sewer), transportation corridors (paved roads, dirt roads, fire  
4079 roads, trails), and sites situated within 100 feet of buildings and firing structures. A sample of  
4080 such sites needs to be monitored on a yearly basis. This task is designed to facilitate monitoring  
4081 of these resources using standardized procedures and techniques. It is anticipated that the  
4082 monitoring effort would entail a team of two cultural resources program staff members.  
4083

4084 **Task C --- LANL Strategic Planning Coordination.** Because LANL's national mission is  
4085 periodically enhanced or modified, and because of the continually aging infrastructure at LANL,  
4086 strategic planning is an important aspect of normal operations at LANL. There is a continuing  
4087 need for cultural resources program staff to actively work with planners at all levels of planning  
4088 at LANL to ensure that heritage resources are appropriately taken into account.  
4089

4090 **Task D --- Native American Traditional Cultural Property/Native American Graves Protection  
4091 and Repatriation Act Consultation and Outreach.** Native American consultation and outreach will  
4092 always be a continuous process given the fact that LANL has more than 1000 archaeological sites  
4093 of Ancestral Pueblo origin. These include ancestral villages, traditional cultural properties, more  
4094 than 200 archaeological sites recognized as being of such significance to recommend for National  
4095 Historic Landmark and National Register District status. In addition, erosion and other ground-  
4096 disturbing mechanisms will continue to periodically inadvertently expose Native American  
4097 burials and burial associations.  
4098

4099 **Task E --- Cultural Heritage Public Education [brochure/signs].** This task is schedule to coincide  
4100 with the schedules for the proposed landmark and register district but does not strictly depend on  
4101 the formal establishment of either of these. The task is meant to cover both outreach and inreach  
4102 aspects of public education. Two possible activities would be the development of interpretive

4103 brochures and signs, but there are other possibilities as well, including public lectures and other  
4104 similar activities.

4105

4106 **Task F --- White Rock TA-70 and TA-71 Site Steward Program.** Technical Areas 70 and 71  
4107 present a special cultural resources management issue given the fact that residents of White Rock  
4108 have long utilized the trails transiting the area for various recreational purposes including hiking  
4109 and horseback riding. It has been determined through a series of meetings held by the LANL  
4110 Trails Management Working Group that the complete closure of these trails is not a desirable or  
4111 even viable option. Therefore the most appropriate manner in which to deal with the heritage  
4112 resources in these areas is to proactively set up a local volunteer Site Steward or Site Watch  
4113 program in cooperation with the SHPO and managed by the LANL cultural resources program.  
4114 Once the program is established it could be yearly maintained at a very modest level of effort.

4115

4116 **Task G --- LANL Plan Update.** In accordance with standard practice for Federal agencies with  
4117 cultural resources management plans, there is a review and update of such plans every five years.  
4118 This task provides the time necessary to (1) carefully evaluate the successes and the issues that  
4119 have come about from the implementation of the first five years of the LANL Plan, (2) make any  
4120 necessary changes to the text and body of the plan, and (3) design a new Road Map.

4121

4122

## 4123 **Appendix B. Annotated List of Documents on File in** 4124 **Support of the LANL Plan**

4125 The documents, materials, and collections listed in this Appendix are those providing  
4126 background, guidance, and quality control for the performance of the Los Alamos National  
4127 Laboratory (LANL) cultural resources program, and for the implementation of this LANL  
4128 Cultural Resources Management Plan (LANL Plan). These documents, materials, and collections  
4129 are currently maintained by the LANL cultural resources program in Technical Area 21, Building  
4130 210, unless otherwise specified.

4131  
4132 The appendix is divided into the following general topical divisions:

- 4133 1. Pertinent Historic Preservation and Related Federal Laws, Regulations, Executive  
4134 Memoranda and Orders, Regulations, Guidance, and Policies
- 4135 2. Cultural Resources Program Documents, References, and Materials Relating to Project  
4136 Review and Shared Between the Archaeology and Historic Buildings and Structures Projects
- 4137 3. Cultural Resources Program Documents, References, and Materials for Fieldwork Associated  
4138 with Historic Buildings and Structures
- 4139 4. Cultural Resources Program Documents, References, and Materials for Archaeology  
4140 Fieldwork and Laboratory Processing
- 4141 5. Cultural Resources Program Quality Control Documents
- 4142 6. Cultural Resources Program Safety Documents
- 4143 7. Cultural Resources Program Administrative Record
- 4144 8. Links to Pertinent Cultural Resources Web Sites
- 4145 9. Cultural Resources Program Reports

4146  
4147 It is noted that some documents containing archaeological site locations and other sensitive  
4148 information are protected by law. An example is that of archaeological survey reports that contain  
4149 specific information on archaeological site locations. Such documents typically are assigned a  
4150 Los Alamos Controlled Publication number (LA-CP). They are treated as “Official Use Only”  
4151 and cannot be released to the public.

### 4152 **1. Pertinent Historic Preservation and Related Federal Laws, Executive** 4153 **Memoranda and Orders, Regulations, Guidance, and Policies**

#### 4154 **Federal Laws**

- 4155 • Antiquities Act of 1906
- 4156 • Historic Sites Act of 1935
- 4157 • National Historic Preservation Act of 1966
- 4158 • National Environmental Policy Act of 1969
- 4159 • American Indian Religious Freedom Act of 1978
- 4160 • Archaeological Resources Protection Act of 1979
- 4161 • Native American Graves Protection and Repatriation Act of 1990

#### 4162 **Executive Memoranda and Orders**

- 4163 • Executive Memorandum, September 23 2004 --- Government-to-government relations  
4164 with Tribes
- 4165 • Executive Order 13007, May 24, 1996 --- Sacred Sites

- 4166 • Executive Order 13175, November 6 & 9, 2000 --- Consultation and Coordination with
- 4167 Tribal governments
- 4168 • Executive Order 13287, March 3, 2003 --- Preserve America

#### 4169 **Regulations**

- 4170 • 36 CFR 60: National Register of Historic Places
- 4171 • 36 CFR 63: Determination of Eligibility for Inclusion in the National Register of
- 4172 Historic Places
- 4173 • 36 CFR 65: National Historic Landmarks Program
- 4174 • 36 CFR 67: The Secretary of the Interior's Standards for Rehabilitation
- 4175 • 36 CFR 68: The Secretary of the Interior's Standards for the Treatment of Historic
- 4176 Properties
- 4177 • 36 CFR 78: Waiver of Federal Responsibilities under Section 110 of the National
- 4178 Historic Preservation Act
- 4179 • 36 CFR 79: Curation of Federally Owned and Administered Archaeological Collections
- 4180 • 36 CFR 800: Protection of Historic Properties
- 4181 • 43 CFR 7: Protection of Archaeological Resources
- 4182 • 43 CFR 10: Native American Graves Protection and Repatriation Act Regulations

#### 4183 **Guidance**

- 4184 • DOE G 450.1-3, September 22, 2004 Environmental Guidelines for Development of
- 4185 Cultural Resource Management Plans—Update
- 4186 • 43 FR 44716 The Secretary of the Interior's Standards and Guidelines for Archaeology
- 4187 and Historic Preservation

#### 4188 **DOE and LANL Policies**

- 4189 • DOE Order 1230.2, 1992, revised 2000: American Indian Tribal Government Policy
- 4190 • LANL Pueblo Accords, 1994
- 4191 • LASO Management Procedure No. E-10, 1999, revised 2004: Cultural Resources
- 4192 Management Program
- 4193 • DOE Policy 141.1, May 2, 2001: Department of Energy Management of Cultural
- 4194 Resources

## 4195 **2. Cultural Resources Program Documents, References, and Materials Relating to**

### 4196 **Project Review and Shared Between the Archaeology and Historic Buildings**

### 4197 **and Structure Projects**

4198 There are a number of documents and archival materials that are kept and maintained by the  
 4199 cultural resources program as reference materials in support of the development of historic  
 4200 contexts relating to historic buildings and structures, and also for project review for both  
 4201 archaeological fieldwork and for survey associated with historic buildings and structures. These  
 4202 are as follows:  
 4203

- 4204 • LANL Structure Location Map Books ["Green/Gray Books"]: 1950, 1955, 1961, 1966,
- 4205 current map book.
- 4206 • Historic and Contemporary Sets of Aerial Photographs, on file at the Los Alamos
- 4207 Historical Society, LANL groups ENV-ECR, ENV-ECO, and IM-9: 1946 and 1947
- 4208 Sandia Flyover; LANL aerials in 1950, 1955, 1991.

- 4209 • RFI work plan series for various ER operable units. Environmental Restoration Program,  
4210 Los Alamos National Laboratory, Los Alamos, New Mexico.

4211 **3. Cultural Resources Program Documents, References, and Materials for**  
4212 **Fieldwork Associated with Historic Buildings and Structures**

4213 There are a number of documents and archival materials that are kept and maintained by the  
4214 cultural resources program as reference materials in support of the development of historic  
4215 contexts relating to historic buildings and structures, and for survey associated with historic  
4216 buildings and structures. These are as follows:

4217 **Historic Buildings and Structures Field Guidance and Support Documents**

- 4218 • Archaeological Field Survey Manual  
4219 • U.S. Department of Interior, National Park Service. *The Secretary of the Interior's*  
4220 *Standards for the Treatment of Historic Properties with Guidelines for Preserving,*  
4221 *Rehabilitating, Restoring & Reconstructing Historic Buildings.* By Weeks, Kay D. and  
4222 Anne E. Grimmer (1995).  
4223 • A Report to the U.S. House of Representatives, Committee on Interior and Insular Affairs,  
4224 Subcommittee on National Parks and Public Lands, and the Committee, on Science,  
4225 Space, and Technology. *Balancing Historic Preservation Needs with the Operation of*  
4226 *Highly Technical or Scientific Facilities.* Advisory Council on Historic Preservation  
4227 (1991).  
4228 • Photographic Specifications. Historic American Buildings Survey, Historic American  
4229 Engineering Record. National Park Service (1989 & subsequent revisions).  
4230 • HABS/HAER Standards. Historic American Buildings Survey, Historic American  
4231 Engineering Record. National Park Service.

4232 **Historic Buildings and Structures Field Forms**

- 4233 • Historic Building Survey Form

4234 **Historic Buildings and Structures Baseline References on File**

- 4235 Gosling, F. G.  
4236 2001 *The Manhattan Project: Making the Atomic Bomb.* U.S. Department of Energy,  
4237 DOE/MA-0002.  
4238  
4239 Hawkins, D., E. C. Truslow, and R. C. Smith  
4240 1983 *Project Y: The Los Alamos Story.* The History of Modern Physics, 1800-1950 II.  
4241 Tomash Publishers and the American Institute of Physics.  
4242  
4243 Hoddeson, L., P. W. Henriksen, R. A. Meade, and C. Westfall  
4244 1998 *Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years,*  
4245 *1943-1945.* Cambridge University Press, New York and Cambridge.  
4246  
4247 1993 *Los Alamos: Beginning of an Era, 1943-1945.* Reprinted by the Los Alamos Historical  
4248 Society, Los Alamos, New Mexico.  
4249  
4250 1995 "Los Alamos National Laboratory: A Proud Past, An Exciting Future" (Special Issue),  
4251 LALP-95-2-6&7. *Dateline:* Los Alamos.  
4252

- 4253 2001 “The Laboratory in a Changing World: A Los Alamos Chronology;” LALP-01-65.  
 4254 The Nuclear Weapons Publication Team, Los Alamos National Laboratory, Los  
 4255 Alamos, New Mexico.  
 4256  
 4257 McGehee, E. D. and K. L. M. Garcia  
 4258 1999 *Historical Building Assessment for the Department of Energy Conveyance and*  
 4259 *Transfer Project*. Historic Building Survey No. 178, LA-UR-00-1003. On file at the  
 4260 Ecology Group, Los Alamos National Laboratory.  
 4261  
 4262 McGehee, E. D., S. McCarthy, K. Towery, J. Ronquillo, K. L. M. Garcia, and J. Isaacson  
 4263 2003 *Sentinels of the Atomic Dawn: A Multiple-Property Evaluation at the Remaining*  
 4264 *Manhattan Project Properties at Los Alamos (1942-1946)*. Historic Building Survey  
 4265 Report No. 215. Los Alamos, New Mexico, 2003. Survey No. 858, LA-UR-03-0726.  
 4266 On File at the Ecology Group, Los Alamos National Laboratory, Los Alamos, New  
 4267 Mexico.  
 4268  
 4269 Rothman, H.  
 4270 1992 *On Rims and Ridges, The Los Alamos Area Since 1880*. University of Nebraska  
 4271 Press, Lincoln, Nebraska.  
 4272  
 4273 Truslow, Edith C.  
 4274 1991 *Manhattan District History: Nonscientific Aspects of Los Alamos Project Y, 1942*  
 4275 *through 1946, (Based on an Unpublished 1946 Manuscript)*. Los Alamos, New  
 4276 Mexico: The Los Alamos Historical Society.  
 4277

4278 **4. Cultural Resources Program Forms, Documents, References, and Materials for**  
 4279 **Archaeology Fieldwork**

4280 There are a number of documents and archival materials that are kept and maintained by the  
 4281 cultural resources program as reference materials in support of archaeological fieldwork. The  
 4282 specific archaeological procedures identified here are more detailed than in the formal cultural  
 4283 resources quality control procedures noted below in Section 5: These documents and archived  
 4284 materials are as follows:

4285 **Archaeological Field and Laboratory and Laboratory Guidance and Support**  
 4286 **Documents**

- 4287 • Archaeological Field Survey Manual  
 4288 • Archaeological Excavation—Field Procedures Manual  
 4289 • Archaeology Laboratory Procedures  
 4290 • Ceramic Workshop Notes  
 4291 • Field Access Procedures  
 4292 • Field Manual, version 4.6  
 4293 • Flotation Procedures  
 4294 • Pollen Wash Methods  
 4295 • Recording Cavates  
 4296 • Report Style Guide  
 4297

## 4298 **Archaeological Field and Laboratory Forms**

- 4299 • Area Definition Form
- 4300 • Area Log
- 4301 • Artifact Collection Form
- 4302 • Auger Form
- 4303 • Burial Form
- 4304 • Cultural Resources Field Journal (Daily Field Journal)
- 4305 • Feature Form
- 4306 • Feature Log
- 4307 • Field Specimen Catalog
- 4308 • Flotation Log Form
- 4309 • Government Vehicle Log
- 4310 • GPS Form
- 4311 • Grid Level Excavation Form
- 4312 • Historic Artifact Field Survey Recording Form
- 4313 • Human Remains Tracking
- 4314 • Instrument Mapping Form
- 4315 • Isolated Occurrence Recording Form
- 4316 • NAGPRA Artifacts Tracking
- 4317 • Native American Consultation Record Form
- 4318 • New Site Short Recording Form
- 4319 • NMCRIS Registration Form
- 4320 • NMCRIS Site Form
- 4321 • Personal Vehicle Log
- 4322 • Room Summary Form
- 4323 • Sample Log
- 4324 • Site Assessment Check Sheet
- 4325 • Stratigraphy Log
- 4326 • Stratigraphy Unit Summary Form

## 4327 **LANL Archaeological Baseline Studies**

4328 A series of baseline studies have been prepared, or are in the process of being prepared, that  
 4329 serve to support the ongoing Land Conveyance and Transfer Project excavations, but which  
 4330 will also aid in the formulation of the general and all future specific archaeological research  
 4331 designs and other aspects of the future conduct of archaeology and historic preservation  
 4332 program at LANL. In each case the baseline study has been prepared by a recognized expert  
 4333 in the pertinent field.

4334  
 4335 These baseline studies currently include but will not necessarily be restricted to the following  
 4336 titles and authors:

- 4337 • Anderson, R. Scott (Northern Arizona University), *Jemez Mountains Paleoecology*
- 4338 *Studies.*
- 4339 • Blinman, Eric, and Jeffrey Royce Cox (Archaeomagnetic Dating Laboratory, Museum of
- 4340 New Mexico), *A Context for the Interpretation of Archaeomagnetic Dating Results from*
- 4341 *the Pajarito Plateau*

- 4342 • Broxton, David E., Fraser Goff, and Kenneth Wohletz (Earth and Environmental  
 4343 Sciences, LANL), *The Geology of Los Alamos National Laboratory as a Back Drop for*  
 4344 *Archeological Studies on the Pajarito Plateau*  
 4345 • Castro-Reono, Sergio F., and Elizabeth Miksa. *Petrographic Analyses of Sherd Samples*  
 4346 *for LANL with Geologic and Source-Specific Reference Materials*  
 4347 • Foxx, Teralene S. (retired from LANL Ecology Group), *Ecosystems of the Pajarito*  
 4348 *Plateau and East Jemez Mountains: Linking Land and People*  
 4349 • Shackley, M. Steven (Phoebe Hearst Museum of Anthropology, University of California  
 4350 at Berkeley), *Archaeological Obsidian and Secondary Depositional Effects in the Jemez*  
 4351 *Mountains and the Sierra de Los Valles, Northern New Mexico*  
 4352 • Smith, Susan J. (Laboratory of Paleoecology, Northern Arizona University), *Modern*  
 4353 *Pollen Analog Study, Los Alamos National Laboratory*  
 4354 • Stevenson, Christopher M. (Diffusion Laboratory, Petersburg VA), *Obsidian Hydration*  
 4355 *by Infrared Spectroscopy*  
 4356 • Towner, Ronald H. (Manzanares Research, Tucson AZ), *The Current Status of*  
 4357 *Archaeological Dendrochronology and Dendroclimatology of the Pajarito Plateau, NM*  
 4358

4359 Because these baseline studies have considerable application to Pueblo neighbors and to land-  
 4360 holding agencies outside of LANL itself, they will be placed together into a separate volume  
 4361 as part of the DOE/NNSA Land Conveyance and Transfer Project excavation series.

#### 4362 **Archaeological Teaching Collections**

- 4363 • Ceramics from Pajarito Plateau identified by Rory Gauthier (Bandelier National  
 4364 Monument) for use as a comparative and teaching collection by the cultural resources  
 4365 program staff.  
 4366 • Obsidian and other chipped stone collected from source area in and around the Pajarito  
 4367 Plateau for use as a comparative and teaching collection by the cultural resources  
 4368 program staff.

#### 4369 **5. Cultural Resources Program Quality Control Documents**

##### 4370 **Cultural Resources Quality Assurance Program Plan (QAPP)**

- 4371 • LANL-ENV-ECO-QAPP-004 R0 Cultural Resources Program QAPP

##### 4372 **Cultural Resources Quality Control Procedures**

4373 These are grouped into two categories, depending on whether they are viewed as essential (E)  
 4374 for the day-to-day operation of the cultural resources program, or are primarily important for  
 4375 quality control (Q) for the data and products resulting from the work of the Cultural  
 4376 Resources Program. Also listed is the assigned ENV-ECO number for finalized and  
 4377 authorized procedures, and the status of procedures that have not yet been finalized and  
 4378 authorized.

- 4379  
 4380 • ECO-401 Archaeological Survey and Site Recording (E)  
 4381 • ECO-402 Field Visitor Tours (E)  
 4382 • ECO-404 Construction Project Monitoring (E)  
 4383 • ECO-405 Archaeological Excavation and Laboratory Protocols (E)  
 4384 • ECO-406 Surveying Historic Buildings (E)  
 4385 • ECO-407 Field Checks (E)

- 4386 • ECO-409 Use of Nikon DTM-521 Digital Transit (Q)
- 4387 • ECO-408 GPR Data Management (Q)
- 4388 • Draft GPS and GIS Data Management (Q)
- 4389 • Draft Project Review (Q)
- 4390 • Draft Report Style Guide (Q)
- 4391 • Draft Artifact Curation (Q)
- 4392 • Draft Buildings/Structures Document Research (Q)
- 4393 • Partial Draft Native American Consultation (Q)
- 4394 • Partial Draft Database Management (Q)
- 4395 • Partial Draft NHPA Integrity & Significance Standards (Q)
- 4396 • Future Electronic Image Management (Q)
- 4397 • Future Administrative Record (Q)
- 4398 • Future ARPA/NHPA Monitoring & Site Protection (Q)

## 4399 **6. Cultural Resources Program Safety Documents**

### 4400 **Integrated Work Documents**

- 4401 • IWD-ECO-ASFC-ESA Archaeological survey and field checks-ESA
- 4402 • IWD-ECO-ASFC-DX Archaeological survey and field checks-DX
- 4403 • IWD-ECO-ASFC-MFU8 Archaeological survey and field checks-FMU-8
- 4404 • IWD-ECO-HBSSD-FMU1 Historic buildings/structures surveys and documentation FMU-1
- 4405 • IWD-ECO-HBSSD-FMU2 Historic buildings/structures surveys and documentation FMU-2
- 4406 • IWD-ECO-HBSSD-FMU3 Historic buildings/structures surveys and documentation FMU-3
- 4407 • IWD-ECO-HBSSD-FMU6 Historic buildings/structures surveys and documentation FMU-6
- 4408 • IWD-ECO-HBSSD-FMU7 Historic buildings/structures surveys and documentation FMU-7
- 4409 • IWD-ECO-HBSSD-FMU8 Historic buildings/structures surveys and documentation FMU-8
- 4410 • IWD-ECO- - C&T Excavate prehistoric and historic sites on land transfer sub-
- 4411 parcels as part of the Land Conveyance and Transfer Project

### 4412 **Hazard Control Plans**

- 4413 • LANL-RRES-ECO-EP-OP-002 R2 Archaeological Site Excavation
- 4414 • LANL-RRES-ECO-HR/EP-HCP/OP-003 R0 Historic Buildings Surveys and
- 4415 Documentation

## 4416 **7. Cultural Resources Program Administrative Record**

4417 The cultural resources program maintains (1) a set of administrative files relating to National  
 4418 Historic Preservation Act Section 106 consultation with the New Mexico State Historic  
 4419 Preservation Officer and the Advisory Council on Historic Preservation; and (2) a set of  
 4420 administrative files relating to consultation with Native American Tribes under the Native  
 4421 American Graves Protection and Repatriation Act (NAGPRA) and other laws as appropriate.

## 4422 **8. Links to Pertinent Cultural Resource Management Web Sites**

4423 As in any program that is driven by federal legislation, federal and state regulations, guidance,  
 4424 and policy, federal cultural resources management is an actively growing and changing field.  
 4425 There are a number of Web Sites that provide useful background information and that also  
 4426 capture the changing face of cultural resources across the United States. Some of the particularly  
 4427 pertinent Web Sites are provided below.

4428

4429 Advisory Council on Historic Preservation Home Page:

4430 <http://www.achp.gov/search.html>

4431

4432 CRM Cultural Resource Management Magazine, US National Park Service

4433 <http://www.cr.nps.gov/crm/>

4434

4435 Common Ground Magazine: National Park Service Archaeology and Ethnology Program:

4436 <http://www.cr.nps.gov/aad/cg/>

4437

4438 DOE Cultural Resources:

4439 <http://www.eh.doe.gov/oepa/cultural>

4440

4441 LANL ENV-ECO Ecology Group Home Page:

4442 <http://ecologygroup.lanl.gov/>

4443

4444 New Mexico Historic Preservation Division:

4445 <http://www.nmhistoricpreservation.org/>

4446

4447 Society for American Archaeology Home Page:

4448 <http://www.saa.org/>4449 **9. Cultural Resources Program Reports**

4450 The following table lists all reports produced by the cultural resources program since 1986. As  
4451 noted in the table, some of the reports have yet to finalized, for example several reports relating to  
4452 surveys performed in the mid-1990s on behalf of the LANL Environmental Restoration (ER)  
4453 Program.

4454

4455 The table provides:

4456

- Cultural resources program report number

4457

- A notation if the report was a letter report

4458

- LANL document control number (UR=unrestricted; CP=controlled)

4459

- Report author(s) last name

4460

- Whether or not the report received formal SHPO concurrence (if appropriate)

4461

- The date of the formal SHPO concurrence

4462

Cultural Resource Report No	Letter Report	LANL Document Control No	Title	Author	SHPO Concur	Date SHPO Return
1		LA-CP-95-313	Meteorological Tower, Frijoles Mesa	Larson	Y	08-Apr-87
2		LA-CP-95-314	A Cultural Resource Survey for Three Seismograph Station Locations on Santa Fe National Forest	Larson	Y	22-Aug-86
3		LA-CP-95-315	Milagro Productions Movie Location, Los Alamos Canyon	Larson	Y	08-Apr-87
4		LA-CP-95-316	Central Guard Facility Parking Lot Extension, TA 59 East	Larson	Y	08-Apr-87
5		LA-CP-95-317	Visiting/Consulting Scientists' Trailers, TA 33	Larson	Y	18-Apr-87
6		LA-CP-95-318	Mountain Bell Communications Underground Cable, South Mesa Line	Larson	Y	08-Apr-87
7		LA-CP-95-319	Temporary Inflatable Trailer for CLS-3 at TA 46	Larson	Y	08-Apr-87
8		LA-CP-95-320	J-8 Transportables, TA 16	Larson	Y	08-Apr-87
9		LA-CP-95-321	PCB Storage Facility, Septic Tank/Drain Field, TA-54, Area "L"	Larson	Y	27-Feb-87
10		LA-CP-95-322	Theoretical and Computation Modular office Building	Larson	Y	29-Apr-87
11		LA-CP-95-323	Fill Dirt Area, Fenton Hill Fill Site, TA-57	Larson	Y	20-May-87
12		LA-CP-95-324	Live Firing Range Extension, Sandia Canyon	Larson	Y	07-Dec-87
13		LA-CP-95-325	Cabra/Rendija Canyon Seismic Trench	Larson,	Y	25-Jun-87
14		LA-CP-95-326	Canada Del Buey Sanitary Landfill	McGehee and Larson	Y	09-Sep-87
15		LA-CP-95-327	MPF-35 Relocation TA-53	Larson	Y	04-Sep-87
16		LA-CP-95-328	LANL Tailings Pile, Lake Fork Mesa, Forest Service Road 1676	Larson		
17		LA-CP-95-329	N-12 Trailer Park, at TA-52	Larson	Y	24-May-88
18		LA-CP-95-330	Solid Waste Fired Boiler Facility, TA-16	Larson	Y	29-Jun-88
19		LA-CP-95-331	White Rock "Y" Water Main Relocation	Larson	Y	31-Aug-88
20		LA-CP-95-332	Club 1663 Fitness Trail	McGehee and Larson	Y	03-Nov-88
21		LA-CP-95-333	Transmissometer Shelter	McGehee	Y	08-Dec-88
22		LA-CP-95-334	Pajarito Mountain Antenna Site - LANL	McGehee	Y	19-Jan-89
23		LA-CP-95-335	Dual-Axis Radiographic Hydrotest Facility (DARHT)	Larson	Y	21-Feb-89
24		LA-CP-95-336	Materials Science Laboratory	Larson and McGehee	Y	21-Feb-98
25		LA-CP-95-337	Pulsed Power Assembly Building	Larson and McGehee	Y	21-Feb-89
26		LA-CP-95-338	Sandia Canyon Landfill	McGehee and Larson		
27		LA-CP-95-339	Utilities Restoration, LANL/DOE Gas Line Replacement Phase A - Cuba Section	Powers	Y	28-Aug-89
28		LA-CP-95-340	Utilities Restoration, LANL/DOE Gas Line Replacement Additive Alternate No. 1 - Kutz By-Pass	Powers and Larson	N/A	N/A
29		LA-CP-95-341	Sanitary Wastewater Consolidated System - Plant	McGehee and Larson	Y	09-Nov-89
30		LA-CP-95-342	Power Line Extension in Sandia Canyon, Santa Fe County, New Mexico	Powers		
31		LA-CP-95-343	Utilities Restoration, Phase I: Otowi Water Wells # 1 and # 4	Larson and McGehee	Y	01-Nov-89
32		LA-CP-95-344	Advanced Analytical Chemistry Facility	McGehee		
33		LA-CP-95-345	Pajarito Mountain Antenna Power line Reroute	Powers	Y	07-Dec-89
34		LA-CP-95-346	Temporary EEO Trailer and Transportables	Powers		
35		LA-CP-95-347	Los Alamos Canyon Electric Pole Replacement	McGehee	Y	29-Jan-90
36		LA-CP-95-348	Q-Site Fire Road	Powers and Larson	Y	29-Jan-90
37		LA-CP-95-349	Airport Fire Station - Site 2	Powers	Y	20-Feb-90
38		LA-CP-95-350	Communications Duct TA-46 to TA-54	Powers	Y	07-Mar-90
39		LA-CP-95-351	Utilities Restoration, LANL/DOE Gas Pipeline Replacement Phases B, C, and D - Nageezi to Counselor Section	Powers		
40		LA-CP-95-352	Live Firing Range Telephone System Upgrade	McGehee	Y	12-Jun-90

Cultural Resource Report No	Letter Report	LANL Document Control No	Title	Author	SHPO Concur	Date SHPO Return
41		LA-CP-95-353	White Rock Visitor Information Center	McGehee		
42		LA-CP-95-354	Los Alamos Integrated Communications Systems; Phase I, S-Site Duct Bank	McGehee	Y	06-Apr-92
43		LA-CP-95-355	Technical Support Facility, TA-46	McGehee	Y	09-May-91
44		LA-CP-95-356	Area G, TA-54, New Pits	Larson	Y	09-Jul-91
45		LA-CP-95-357	Sanitary Wastewater Systems Consolidation - Pipelines; North Interceptor	McGehee, Larson, and Powers	Y	20-Nov-91
46		LA-CP-95-358	Seismic Hazards - Guaje Pines Area, Los Alamos County	McGehee and Manz	Y	18-Sep-91
47		LA-CP-95-359	Seismic Hazards Investigation - S-Site, Rendija Canyon, Guaje Canyon and Chupaderos Canyon	McGehee and Manz	Y	29-Oct-91
48		LA-CP-95-360	New Facilities at Technical Areas (TAs) 52, 63, and 66	Larson and McGehee	Y	12-Feb-92
49		LA-CP-95-361	Los Alamos Integrated Communications Systems; Phase II, Technical Areas 35, 46, 50, 52, and 66	Larson and McGehee	Y	06-Apr-92
50		LA-CP-95-362	Environmental Restoration Program, Operable Unit (OU) 1106	McGehee, Manz, Parish, Hannaford, and Schillaci	Y	06-Apr-92
51		LA-CP-95-363	Environmental Restoration Program, Operable Unit (OU) 1078	McGehee, Binzen, Hannaford, and Manz	Y	06-Apr-92
52		LA-CP-95-364	Utility Restoration Phase II; Los Alamos Canyon Water Well and Lines	McGehee and Schillaci	Y	08-Apr-92
53		LA-CP-95-365	Low Level Waste Drum Staging Facility (Lab Job No. 12061) and WETF Shipping and Receiving Addition (Lab Job No. 12012)	Manz, McGehee, and Wallace	Y	01-Oct-92
54		LA-CP-95-366	Jemez Tomography Experiment	Hoagland	Y	21-Oct-92
55		LA-CP-95-367	Environmental Restoration Program, Operable Unit (OU) 1071	McGehee, Hoagland, Manz, Larson, Binzen, and Hannaford	Y	10-May-93
56		LA-CP-95-368	Environmental Restoration Program, Operable Unit (OU) 1079	Hoagland, Manz, and McGehee	Y	03-Sep-93
57		LA-CP-95-369	Environmental Restoration Program, Operable Unit (OU) 1122	McGehee, Binzen, Manz, Hannaford, Hoagland, and Stolpe		
58		LA-CP-95-370	Jemez Teleseismic Project	Hoagland	Y	30-Sep-93
60		LA-CP-95-371	Infrastructure Support Facilities (ISF) Gasline - Los Alamos Townsite	Manz, Hoagland, McGehee, and Larson	Y	27-Sep-93
61		LA-CP-95-372	Department of Energy ISF Gasline Replacement, Phases A and B, Bloomfield to Kimbeto Wash, San Juan County, New Mexico	Hoagland, Larson, Schillaci, and Albertson	N/A	N/A
62			Environmental Restoration Program Operable Unit (OU) 1157	McGehee and Manz		
63			Environmental Restoration Program Operable Unit (OU) 1082	Binzen		
64			Environmental Restoration Program Operable Unit (OU) 1111	McGehee and Manz		
66		LA-CP-95-373	Los Alamos County Landfill Expansion	Lakatos	Y	01-Feb-95
67		LA-CP-95-374	115 KV Norton Transmission Line Structure Replacement on Department of Energy Land	Manz	Y	08-Jun-95
68		LA-CP-95-375	Cabra Canyon - Supplemental Report for Environmental Restoration Program Operable Unit (OU) 1071	Manz and McGehee	N/A	N/A
69			Environmental Restoration Program Operable Unit (OU) 1085	Hoagland		
70		LA-CP-95-376	Infrastructure Support Facilities (ISF) Gasline - Los Alamos Townsite; Additional Survey	McGehee, Manz, Schillaci, and Irving	Y	20-Jul-94
71		LA-CP-95-377	Guaje Booster S 2 & 3: Operation and Maintenance	Wallace and McGehee	Y	28-Oct-92

Cultural Resource Report No	Letter Report	LANL Document Control No	Title	Author	SHPO Concur	Date SHPO Return
72		LA-CP-95-378	Environmental Restoration Program, Operable Units (OUs) 1129 and 1147	Manz, Hannaford, McGehee, and Binzen	Y	02-Feb-95
73		LA-CP-95-379	Transuranic (TRU) Waste Facilities	Larson	Y	05-Dec-86
74		LA-CP-96-078	Technical Area 21, Buildings 3 & 4: Decontamination and Decommission Historic Building Survey Report	McGehee		
75		LA-CP-95-380	United States Geological Survey (USGS) Gauging Stations: TA-54, Area G	Manz	Y	17-Oct-94
77		LA-CP-95-381	Deep Groundwater Monitoring Well at TA-54	Larson	Y	01-Feb-95
78		LA-CP-95-382	Upgrading of Existing Dirt Access Road and Surface Blading of Drill Pads	Manz	Y	01-Feb-95
79		LA-CP-95-383	Widen Intersection: TA-51 Pajarito Road	Manz	Y	01-Feb-95
80		LA-CP-95-384	Environmental Restoration Program, Operable Unit (OU) 1136	Eilert	Y	07-Jul-95
81		LA-CP-95-385	Environmental Restoration Program, Operable Unit (OU) 1154	Eilert	N/A	N/A
82		LA-CP-95-386	High Explosives Wastewater Treatment Facility (HEWTF)	Lakatos	Y	01-Feb-95
83		LA-CP-95-387	Environmental Restoration Program, Operable Unit (OU) 1140	Manz, Hannaford, and McGehee	Y	01-Feb-95
84		LA-UR-95-617	Decontamination and Decommissioning of 28 "S Site" Properties: Technical Area 16	McGehee	Y	24-Mar-95
85		LA-CP-95-388	115 KV Norton Transmission Line Structure Replacement on Forest Service Land	Manz	Y	25-May-95
86		LA-CP-95-389	115 KV Norton Transmission Line Structure Replacement on Bureau of Land Management Land: FY 96 Structures	Manz	Y	04-Jun-95
88		LA-CP-97-66	115 KV Norton Transmission Line Structure Replacement on Bureau of Land Management Land: Fiscal Years 97 & 98 Structures	Manz	Y	04-Jun-97
89		LA-CP-95-390	Environmental Restoration Program, Operable Unit (OU) 1114	Schillaci and Parish	Y	21-Jul-95
90		LA-CP-95-391	Collaborative Geophysical Investigation, BLM Land	Schillaci	N/A	N/A
91		LA-CP-95-392	Collaborative Geophysical Investigation, USDA Forest Service Land	Schillaci	N/A	N/A
92		LA-CP-95-393	Collaborative Geophysical Investigation, Private Land	Schillaci	Y	06-Jul-95
93		LA-CP-95-394	Environmental Restoration Program, Operable Unit (OU) 1093	Manz and Schillaci	Y	07-Jul-95
			East Gate Guard Tower (TA-73-15)	McGehee	Y	10-Jul-95
94		LA-CP-95-395	DARHT II: Preliminary Report of Expanded Area and Alternatives	Larson		
95		LA-CP-95-396	Otowi #1 Storage Tank	Manz	Y	06-Jul-95
96		LA-CP-95-397	Cultural Resource Mitigation Plan for Laboratory of Anthropology (LA) Site 70029, Los Alamos County, New Mexico	Powers and Larson	Y	
97		LA-CP-95-398	Cultural Resource Data Recovery Plan for Laboratory of Anthropology (LA) 4618, Mesita Del Buey, Los Alamos National Laboratory	Larson	Y	
98		LA-CP-95-399	Cultural Resource Data Recovery Plan for Seven Coalition Period Pueblos on Mesita Del Buey: Laboratory of Anthropology (LA) 4620, 4621, 4622, 4623, 4624, 4625, & 4626, Los Alamos National Laboratory, New Mexico	Larson	Y	09-Jul-91
99		LA-CP-95-400	Cultural Resource Data Recovery Plan for the Vigil Y Montoya Homestead, Laboratory of Anthropology (LA) 70028, Los Alamos National Laboratory, New Mexico	McGehee and Larson	Y	27-Sep-93
100		LA-UR-95-1334	Proposed Effects and Treatment of Effects for Decontamination and Decommissioning of 28 "S Site" Properties: Technical Area 16	McGehee	Y	30-May-95

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101		LA-CP-95-401	Environmental Restoration Program Operable Unit (OU) 1098	Binzen and Eilert	Y	07-Jul-95
102	L		Parking Lot Expansion, TA-48	Manz	Y	06-Jul-95
103		LA-CP-95-402	Installation of Two Trailers: Technical Area 15	Manz	Y	06-Jul-95
104	L		Storage Yard and Temporary Parking Lot, TA-63	Manz	Y	06-Jul-95
105	L		Construct Addition (TA-48-1)	Hoagland		
106		LA-CP-95-403	Building TA-64-39, Parking Lot Extension	Hoagland	Y	06-Jul-95
107			ER TA-15 OU 1086	Hoagland		
108			ER TA-36 OU 1130	Larson		
109			ER TA-49 OU 1144	Larson and Lakatos		
110		LA-CP-99-36	DARHT III: Expanded Area of Potential Effects	Vierra, Hoagland, Larson, and Manz	Y	20-May-99
111		LA-CP-95-404	Neutron Tube Target Loading Facility	Manz	Y	06-Jul-95
112	L		Double Wide Trailer, TA-48 (and Parking Lot)	Manz	Y	06-Jul-95
113		LA-CP-95-405	Seismic Hazards Investigation - 1995	Manz	Y	26-Jul-95
114		LA-CP-95-180	TA-16 Heating System Replacement	McGehee	Y	18-Aug-95
115		LA-CP-95-406	Contractor's Task Force Trailers, Technical Area 58	Manz	Y	15-May-96
116		LA-UR-95-3191	Infrastructure Support Facilities (ISF) Gasline - Los Alamos Townsite: The "Peggy Sue" Bridge	McGehee	Y	12-Dec-95
117	L		Land Application of Dried Sanitary Sewage Sludge at TA-61	Manz	Y	15-May-96
118		LA-CP-96-018	CMR Building Upgrades Cultural Resource Survey Report	Larson	Y	14-Feb-96
119			ER TA-39 OU 1132	Manz		
120		LA-CP-96-022	Radioactive Liquid Waste Treatment Facility (RLWTF) Cultural Resource Survey Report	Larson, Manz, and McGehee	Y	15-May-96
121		LA-CP-96-077	Facility and Utility Modifications for the Low Energy Demonstration Accelerator (LEDA)	Larson and Manz	Y	22-Jun-96
122		LA-CP-96-024	New Parking Lot, Trailers, and Transportable at Technical Area 16	McGehee and Manz	Y	15-May-96
123		LA-CP-96-025	High Energy Density Experiments Laboratory	McGehee and Manz	Y	15-May-96
124	L		Biophysics Laboratory Addition	Manz	Y	15-May-96
126		LA-CP-97-187	Hydrodynamic Testing Operations Center	Hoagland	Y	24-Feb-98
127		LA-CP-96-139	Firing Point Prescribed Burns	Hoagland	Y	18-Sep-96
128		LA-CP-96-117	TA-39 Hardening Upgrade	Manz	Y	18-Sep-96
129			Environmental Restoration Program, Operable Unit (OU) 1049, Pilot Study, Lower Los Alamos Canyon, Pueblo of San Ildefonso	Hoagland, Manz, and Larson		
130		LA-CP-96-222	Capability Maintenance and Improvements Project (CMIP)	Manz, Larson, and Hoagland		
131			Firing Site Impacts to Cultural Resources, Cultural Resource Assessment Report	Larson and McClure	N/A	Internal Laboratory document
132		LA-CP-96-231	Research Park	Larson, Hoagland, and Manz	Y	14-May-97
133		LA-CP-96-260	DP Road Land Transfer	Hoagland	Y	12-Dec-96
136		LA-CP-97-53	National Spallation Neutron Source Facility, Cultural Resource Assessment	Larson	N/A	N/A
137			Los Alamos Trail Network, Cultural Resource Assessment	Larson		
138		LA-CP-97-60	Environmental Restoration Program, Field Unit 4, Reach LA-3, Los Alamos Canyon, New Mexico	Hoagland, Manz, and Larson	Y	14-May-97
139		LA-CP-97-91	Seismic Hazards Investigations - 1997	Manz	Y	28-Aug-97
140		LA-CP-97-96	Environmental Restoration Program, Alluvial Observation Well LLAO-3, Los Alamos Canyon, New Mexico	Hoagland	Y	28-Aug-97
141		LA-CP-97-101	Monitoring Wells Fiscal Year 1997	Manz, Larson, and Hoagland	Y	28-Aug-97

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142			Environmental Restoration Program, Field Unit 4, Reaches in Pueblo and Los Alamos Canyons, New Mexico	Hoagland and Albertson		
144		LA-CP-97-174	Engineering, Sciences, and Applications Division, Fire Brake and Fire Roads	Hoagland	Y	28-Oct-97
145		LA-CP-97-176	Heliport Pads, Access Road and Equipment Building	Manz	Y	28-Oct-97
146		LA-CP-97-247	West Jemez Road Tree Thinning	Manz	Y	24-Feb-98
147		LA-CP-97-235	Fire Protection Improvements: Los Alamos National Laboratory	Hoagland and Manz	Y	14-Jan-98
148		LA-CP-97-236	Fiber Optics Cable, TA-54 to TA-18	Manz, and Hoagland	Y	14-Jan-98
149		LA-CP-97-220	Sigma Mesa Chemical Storage Building	McGehee		
150		LA-CP-98-7	Weapons Neutron Research Detector Shed	Manz and Hoagland	Y	24-Feb-98
151	L		Upgrades TA-9, Building 42	McGehee	Y	26-May-98
152		LA-CP-98-21	TA-16 Pre-Manufactured Office Building	Manz and Hoagland	Y	24-Feb-98
153		LA-CP-98-22	Facilities Improvements Technical Support Building, TA-55	Manz and Hoagland	Y	24-Feb-98
154		LA-UR-98-2140	Strategic Computer Complex	Manz and McGehee	Y	01-Jul-98
155		LA-UR-98-2282	TA-61 Sheds	Manz	Y	21-Jul-98
156		LA-CP-98-147	WETF Modular Office Building	Manz and Hoagland	Y	21-Jul-98
157		LA-CP-98-173	Los Alamos County Lift Station Relocation	Manz	Y	31-Aug-98
158		LA-UR-98-4463	Decontamination and Decommissioning of Buildings 86 and 90 at Technical Area 33	Manz	Y	22-Feb-99
159		LA-CP-98-229	New Greenhouse: Technical Area 16	Manz	Y	18-Nov-98
160		LA-CP-98-295	TA-54 Wildfire Prevention Project	Vierra	Y	29-Jan-99
161		LA-CP-98-288	Radioactive Liquid Waste Treatment Facility	Garcia	Y	08-Dec-98
162		LA-UR-99-798	Decontamination and Decommissioning of Structure 49 and Buildings 57 and 88 at Technical Area 2	Garcia	Y	17-Mar-99
163		LA-CP-98-118	Nake'muu Village on the Edge: Description and Condition of a Prehistoric New Mexican Pueblo	Nordby, Mayberry, and Brisbin - NPS Mesa Verde	N/A	N/A
164		LA-CP-99-162	Electrical Power System Upgrades Project, Norton to the Western Technical Area 115kv Transmission Line	Hoagland, Vierra, Masse, Campbell, Madsen, and Oakley	Y	03-Nov-99
165	L		Stabilization of Inadvertent Discovery at TA-18	Isaacson	Y	N/A
166		LA-CP-99-108	Breakneck Trail, Santa Fe County, New Mexico	Knight	Y	08-Aug-99
167		LA-UR-99-1425	Decontamination and Decommissioning of Buildings TA-3-42, TA-8-27, TA-8-31, and TA-35-1	Garcia	Y	25-Jun-99
168	L		NIS Facility (Nonproliferation and International Security Center)	Garcia	Y	07-May-99
169	L		New 4" Gas Line from TA-9 to TA-15	Garcia	Y	01-Jun-99
170	L		New Emergency Response Consolidation Office Building and Parking Lot	Isaacson	Y	17-Sep-99
171		LA-UR-99-2393	Decontamination and Decommissioning of the Technical Area 33 Water Reservoir and Pump House	Garcia		
172	L		TA-8-21 Parking Lot Expansion	Isaacson	Y	17-Sep-99
173	L		FY 1999 Wildfire Prevention	Vierra	Y	11-Jun-99
174		LA-UR-99-4241	Decontamination and Decommissioning of Structure TA-3-156 and Building TA-3-163	Garcia and Mclain	Y	17-Sep-99
175	L		Parking Lot, TA-58, FM-81	Vierra	Y	03-Nov-99
176		LA-CP-00-179	Cultural Resources Survey and Assessment of the Conveyance and Land Transfer Tracts	Hoagland	Y	06-Oct-00
177		LA-UR-99-6912	Isotope Production Facility Addition: Building TA-53-3	Garcia and McGehee	Y	07-Dec-99

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178		LA-UR-00-1003	Historical Building Assessment for the Department of Energy Conveyance and Transfer Project	McGehee and Garcia	Y	Never received notification back from SHPO.
179			Mortandad Canyon RCRF Facility Investigation Canyon Bottom Project, Los Alamos County, New Mexico	Knight, Hoagland, and Masse		
180			Diagnostic X	Masse	N/A	Internal Laboratory document
181		LA-CP-00-119	Seismic Hazards Investigation: Chupaderos Canyon, Los Alamos County	Vierra	Y	09-Feb-01
182		LA-CP-00-136	TA-15 Electrical Infrastructure Upgrade Project	Vierra	Y	13-Mar-01
183		LA-CP-00-143	County of Los Alamos Wildfire Mitigation Project	Hoagland	N/A	N/A
184		Neg. rpt to BLM	An Archaeological Survey of the Proposed LANL EES-4 Geo Engineering Group Microborehole Drilling Project	Hoagland	N/A	N/A
185		LA-CP-00-277	Emergency Flood-Control Actions on the Historic Anchor Ranch, LA 16808 Los Alamos National Laboratory, New Mexico	Masse	Y	06-Oct-00
186		LA-UR-00-3854	The Omega West Reactor and Water Boiler Building, TA-2-1; A Preliminary Report	McGehee and Garcia	Y	13-Oct-00
187		LA-CP-00-327	Mesita Del Buey Cavate Survey	Vierra, Nisengard, and Schmidt	N/A	N/A
188		LA-UR-03-7364	A Current Assessment of the Nake'muu Monitoring Program	Vierra	N/A	N/A
189		LA-UR-00-5888	Sherwood and Scyllac Buildings, TA-3-105 and TA-3-287; An Eligibility Assessment Report	McGehee and Garcia	Y	30-Jan-01
190		LA-UR-01-0694	Cultural Resource Reviews of Emergency Environmental Activities After the Cerro Grande Fire	Garcia	N/A	N/A
191		LA-UR-01-1805	"The Hollow" at TA-15; An Eligibility Assessment Report	McGehee and Garcia	Y	08-Jun-01
192		LA-UR-01-2303	Administration Building TA-3-43; An Eligibility Assessment Report	McGehee and Garcia	Y	08-Jun-01
193		LA-UR-01-3195	Decontamination and Decommissioning of Building TA-16-195	Mclain and Garcia	Y	31-Jul-01
194		LA-CP-01-382	Pajarito Gasline Project	Masse, McGehee, Harmon, Madsen, and Schmidt	Y	28-Nov-01
195		LA-UR-01-5308	Decontamination and Decommissioning of Buildings 1, 2, and 40 at Technical Area 33	Mclain, Garcia, and McGehee	Y	19-Nov-01
196		LA-UR-01-4833	TA-36-12 Addition	Mclain and Garcia	Y	18-Oct-01
197		LA-CP-01-385	TA 15 Electrical Infrastructure Upgrade Connection Project	Vierra and Schmidt	Y	20-Nov-01
198	L	LA-UR-01-5449	NHPA Compliance Review for the Potential Effects of Operations Under the National Pollution Discharge Elimination System Storm Water Multi-Sector General Permit for Industrial Activities at Los Alamos National Laboratory	Isaacson and Garcia	N/A	N/A
199	L	LA-UR-01-5587	TA-16-260 Half-Wall Removal, Bay 7	Garcia	Y	24-Oct-01
200		LA-UR-01-5721	Cultural Resources Status of the Proposed Advanced Hydrotest Facility Site Location in TAs 53, 72, 73, and 5 (LANSCE Site) at Los Alamos National Laboratory, Los Alamos, New Mexico	Noll, Jr. and Hoagland	N/A	Internal Laboratory document
201		LA-UR-02-1284	Department of Energy Land Conveyance Data Recovery Plan and Research Design for the Excavation of Archaeological Sites Located Within Selected Parcels to be Conveyed to the Incorporated County of Los Alamos, New Mexico	Vierra, Hoagland, and Isaacson	Y	05-May-02
202		LA-CP-02-109	Norton Line – Pueblo of San Ildefonso Land	Hoagland	Y	01-Apr-02

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203		LA-UR-02-2079	TA-22 Connector Road Project: An Assessment of the Gomez Homestead, Los Alamos National Laboratory	Schmidt, Vierra, McGehee, and Garcia	Y	
204		LA-UR-02-2663	Decontamination and Decommissioning of TA-41	McGehee, Garcia, Ronquillo, and Towery	Y	22-May-02
205	L	LA-UR-02-2340	TA-16-193 Modifications	Garcia	Y	07-May-02
206		LA-CP-02-0378	Cultural Resource Protection and Site Inventory for the Wildfire Hazard Reduction Project: Results of the 2001 Field Season	Vierra	Y	03-Oct-02
207	L	LA-CP-02-315	Los Alamos Canyon Gas Mainline	Hoagland	Y	05-Aug-02
208		LA-UR-02-4348	Decontamination and Decommissioning of the Basket Washing Facility, Technical Area 16	McGehee, Garcia, Towery, and Ronquillo	Y	06-Aug-02
209	L	LA-UR-02-4690	Decontamination and Decommissioning of TA-16-206 and -208	Garcia	Y	14-Aug-02
210		LA-CP-02-0350	Los Alamos National Laboratory Cerro Grande Fire Cultural Site Assessment - (TAs 5, 49, 60, & Rendija Canyon)	Pueblo of San Ildefonso, Pueblo of Santa Clara Cultural Resources Assessment Team	Y	08-Aug-02
211		LA-UR-02-5713	Cerro Grande Fire Assessment Project: An Assessment of the Impact of the Cerro Grande Fire on Cultural Resources at Los Alamos National Laboratory, New Mexico	Nisengard, Harmon, Schmidt, Madsen, Masse, McGehee, and Garcia		19-Jun-03
212	L	LA-CP-02-0376	Norton Fence Line	Hoagland	Y	16-Sep-02
213		LA-CP-02-0469	Excavations at a Coalition Period Pueblo (LA 4624) on Mesita Del Buey, Los Alamos National Laboratory	Vierra, Nisengard, Harmon, Larson, Curewitz, Schmidt, McBride, Smith, and Binzen	Y	16-Dec-02
214		LA-UR-02-6841	ESA Division's 5-Year Plan: Consolidation and Revitalization at Technical Areas 3, 8, 11, and 16	McGehee, Mccarthy, Garcia, Towery, and Ronquillo	Y	22-Jun-03
215		LA-UR-03-0726	Sentinels of the Atomic Dawn: A Multiple Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942-1946)	McGehee, Mccarthy, Towery, Ronquillo, Garcia, and Isaacson	Y	05-Jun-03
216		LA-CP-03-0280	Canones Micro Drilling	Hoagland	Y	11-Jun-03
217		LA-CP-03-0455	Cultural Resource Protection and Site Inventory for the Wildfire Hazard Reduction Project: Results of the 2002 and 2003 Field Seasons	Vierra	N/A	N/A
218			Seismic Hazards Test Trench Survey	Masse		
219	L		TA-22 Connector Road Project: LA 21331 Site Assessment	Vierra	Y	06-Aug-03
220	L		Report to SHPO on "No Property, No Effect" Undertakings April 2000 through September 2002	Garcia	Y	25-Aug-03
221	L		Report to SHPO on "No Property, No Effect" Undertakings for FY 2003	Garcia	Y	04-Dec-03
222		LA-CP-03-0965	Removal of LA 89774 From Eligibility for Listing in the National Register of Historic Places	Masse and Garcia	Y	03-Feb-04
223	L		TA-16-410 Upgrades	Garcia	N/A	N/A
224	L	LA-UR-04-2497	TA-69-3 Decontamination and Decommissioning	McGehee and Garcia	Y	23-May-04
225		LA-UR-04-3752	Controlled Thermonuclear Research at Los Alamos: The History of the Sherwood and Scyllac Buildings (TA-3-105 and TA-3-287)	Ziegler, McGehee, Garcia, Towery, Ronquillo, and Isaacson		06-Jul-04
226		LA-CP-04-0536	Electrical Power System Upgrades Project, Norton to the Western Technical Area 115-KV Transmission Line, Segment 4	Hoagland, Kuru'es, and Copeland		

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227	L	LA-UR-04-4251	TA-36-22 Decontamination and Decommissioning	Garcia and McGehee	Y	30-Jul-04
228	L	LA-UR-04-4473	TA-16-260 Press Installation	Garcia	Y	30-Jul-04
229		LA-UR-04-5541	The Hollow and GMX Manor at TA-15 (R-Site): Historic Context and Property Documentation	McGehee and Garcia, Towery, Ronquillo, Loomis, Naranjo, and Isaacson		08-Sep-04
230		LA-UR-04-6061	Upgrades to TA-33-87, -88, and -89	Garcia and McGehee	Y	27-Sep-04
231		LA-UR-04-6492	Historical Context of W Site, Technical Area 41	McGehee, Garcia, Loomis, Ronquillo, Towery, and Isaacson	Y	19-Oct-04
232		LA-CP-04-0712	Cultural Resource Assessment and Monitoring for the Pajarito Road East Access Control Station Technical Area 36, Los Alamos National Laboratory Los Alamos County, New Mexico	Masse and Vierra	N/A	N/A
233		LA-CP-04-0766	Cultural Resource Site Recording for the Wildfire Hazard Reduction Project: Results of the 2004 Field Season	Harmon		
234		LA-UR-04-6681	Historical Context of the Omega Reactor Facility, Technical Area 2	Harvey, McGehee, Garcia, Ronquillo, Towery, Loomis, Naranjo, and Isaacson	Y	19-Oct-04
235		LA-UR-04-6856	Supplemental Historic Context of DP Site, Technical Area 21	McGehee, Garcia, Towery, and Ronquillo	Y	22-Nov-04
236		LA-UR-04-7130	Engineering the Bomb: Detonator and Plutonium Recovery Research At Two-Mile Mesa Site (TA-6)	McGehee, Loomis, Garcia, Towery, Ronquillo, Naranjo, Isaacson		
237	L	LA-UR-04-7567	Demolition of TA-3-70	Garcia	Y	16-Nov-04
238		LA-UR-04-7938	Historic Context of Hot Point Site, Technical Area 33	McGehee, Garcia, Towery, Ronquillo, Isaacson		

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