A CLASS III CULTURAL RESOURCE INVENTORY OF THE PROPOSED EAGLE ROCK ENRICHMENT FACILITY BONNEVILLE COUNTY, IDAHO

VOLUME I: REPORT

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ABSTRACT

Western Cultural Resource Management, Inc. (WCRM) conducted a Class III investigation of the proposed Eagle Rock Enrichment Facility (EREF) site for AREVA Enrichment Services LLC (AREVA) from April 14 through July 23, 2008 in an effort to provide information for an Environmental Report (ER). AREVA, the project participant, is preparing an application to the U.S. Nuclear Regulatory Commission (NRC) to construct, operate, and decommission a gas centrifuge uranium enrichment plant in Bonneville County, Idaho. The Class III survey was conducted to identify, document, and evaluate cultural resources in the event that the proposed action is licensed as a future federal undertaking requiring the application of Section 106 of the National Historic Preservation Act (NHPA) as amended, its provisions, and policies.

The proposed Area of Potential Effect (APE) was defined by AREVA as 1,701 ha (4,200 ac) and includes all project components, an approximate 305 m (1,000 ft) buffer around the components and a 76 m (250 ft) buffer around two access roads. A Class I file search was conducted of the proposed APE and a 1.6 km (one-mi) buffer surrounding it. A Class III intensive survey was conducted of five groundwater well locations, ten borehole locations, and the proposed EREF (two access roads and the footprint of the plant). The EREF is a 381 ha (941 ac) plant site with associated access roads. The groundwater well locations comprise 1.15 acres outside of the facility, while the borehole locations are within the EREF. All areas surveyed to a Class III level are in the portion of the proposed APE that will likely be directly affected. The potential effects of the proposed project will be evaluated in the ER. The current report documents the results of the Class I file search of the proposed APE and surrounding buffer and the Class III inventory and National Register of Historic Places (NRHP) evaluation of cultural resources recorded within the proposed groundwater well and borehole locations and the EREF Project area.

The Class I file search data provided by the Idaho State Historic Preservation Office (SHPO) and the Bureau of Land Management (BLM) indicate that within the proposed EREF APE no previous surveys have been conducted; therefore, no previously recorded resources have been documented. In the 1.6 km (one-mi) buffer surrounding the proposed APE, there have been five previous surveys resulting in the recording of seven sites. Three are prehistoric cave sites within the Wasden Cave Complex, one is a lithic scatter, and three are noted in the SHPO files but have not been officially identified and documented.

Newly recorded resources within the Class III survey area include 11 sites (three prehistoric, four historic, and four multi-component) and 17 isolated finds (four prehistoric, ten historic, one multi-component, and two indeterminate). Prehistoric site types include a site with two projectile points (MW011), a lithic scatter associated with a rock feature (MW012), and a prehistoric flake associated with a small rock wall feature (MW015). Historic site types include two trash scatters (MW003 and MW009), a trash scatter and associated rock feature (MW013), and a trash scatter associated with a two-track road (MW014). Multi-component site types include a prehistoric lithic scatter associated with a historic trash scatter (MW002), a prehistoric lithic scatter associated with the John Leopard homestead (MW004), a prehistoric scraper associated with a historic trash scatter (MW006), and a prehistoric projectile point midsection associated with a historic trash scatter and two rock features of indeterminate age (MW007).

Of the newly recorded sites, the historic component of MW004, the John Leopard Homestead, is recommended eligible for inclusion in the NRHP. Sites (MW003, MW006, MW007, MW009, MW011, MW013, and MW014) are recommended not eligible for inclusion in the NRHP. The prehistoric components of three sites (MW002, MW012, and MW015) required additional data collection in order to complete NRHP evaluation.

An onsite meeting was held on September 4, 2008 with WCRM and the Idaho SHPO. The three unevalutated sites were visited, and the SHPO, in consultation with WCRM, developed a sampling/testing method that would provide the information necessary for the completion of NRHP evaluations. Evaluative testing of sites MW002, MW012, and MW015 was conducted from October 1-3, 2008 with paperwork completed in the field on October 4, 2008. As a result, sites MW002, MW012 and MW015 were found to be lacking in significant information and are recommended as not eligible to the NRHP.

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1 Introduction

AREVA Enrichment Services LLC (AREVA), the project participant, is preparing an application to the U. S. Nuclear Regulatory Commission (NRC) to construct, operate, and decommission a gas centrifuge uranium enrichment plant in Bonneville County, Idaho (Figure 1). The proposed Eagle Rock Enrichment Facility (EREF) is located on about 1,701 ha (4,200 ac) of private land owned by a single landowner. This proposed site is about 32 km (20 mi) west of Idaho Falls north of U.S. Highway 20. Portions of Bonneville, Jefferson, and Bingham counties are within 8 km (5 mi) of the proposed EREF site. There is a 16 ha (40 ac) parcel within the proposed site, administered by the Bureau of Land Management (BLM). The proposed site would include Sections 13-15 and portions of Sections 21-26 in Township 3N and Range 34E (Figure 2). About 240 ha (592 ac) would be impacted by construction of the facilities and access roads. The privately held land will be purchased by AREVA.

The NRC requires license applicants to assess the impact of the proposed action on the environment. AREVA will document this assessment in an Environmental Report (ER) that will be submitted to the NRC as part of the license application. The NRC will then prepare an environmental impact statement (EIS) in compliance with the *National Environmental Policy Act* (NEPA) as part of the licensing process. As currently proposed, the EREF would disturb about 240 ha (592 ac) of the proposed site. Facilities would include access roads, parking lots, administration buildings, storage pads, water catchment basins, enrichment buildings and support structures. If licensed, construction would start in late 2011 and continue through 2018. Operations would begin in 2014 and continue through 2044.

Class I file searches and a Class III survey were conducted to identify, document, and evaluate cultural resources in the event that the proposed action is licensed as a future federal undertaking requiring the application of Section 106 of the National Historic Preservation Act (NHPA) as amended, its provisions, and policies. A proposed cultural resource APE was defined by AREVA as 1,701 ha (4,200 ac) and includes the project components, an approximately 305 m (1,000 ft) buffer around components, and a 76 m (250 ft) buffer around the two access roads. The proposed APE is defined as the area characterizing potential direct effects; these effects will be evaluated in the ER.

Class I file searches at the Idaho State Historic Preservation Office (SHPO) and Bureau of Land Management (BLM) were conducted of the proposed APE and a 1.6 km (one-mi) buffer surrounding it. Western Cultural Resource Management, Inc. (WCRM) conducted a Class III level (intensive) inventory of 381 ha (941 ac) within the proposed APE (i.e., the plant and associated access roads) at the request of AREVA Enrichment Services, LLC for the EREF ER. Class III fieldwork was conducted between April 14 and July 23, 2008, and evaluative testing of sites MW002, MW012, and MW015 was conducted from October 1-3, 2008 with paperwork completed in the field on October 4, 2008. Jen Sigler served as Field Supervisor, Steven F. Mehls as Project Historian, Ed Stoner as Project Manager, and Thomas J. Lennon as Principal Investigator. This report (Volume 1) provides the findings of the Class I file search and the Class III survey and is accompanied by the Cultural Resource Documentation (Volume 2).

Figure 1. Project Location

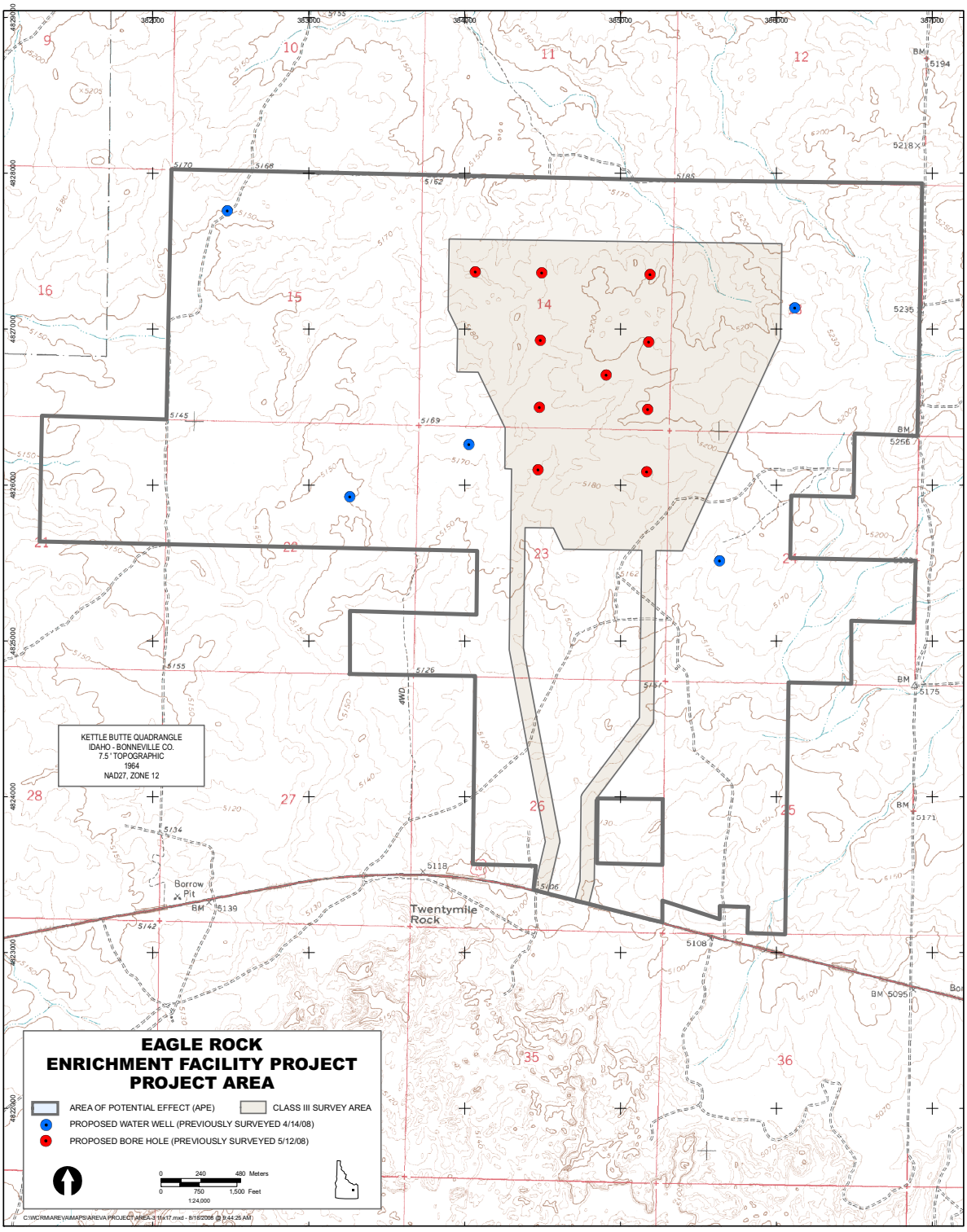

Figure 2. Project Area

2 Effective Environment

Project Setting

The proposed EREF Project area is located in Bonneville County on the northeastern edge of the Snake River Plain in southeastern Idaho. The lands north, east and south of the site are a mixture of private, state, and federal parcels. The Department of Energy's Idaho National Laboratory (INL) eastern boundary is about 1.6 km (one mi) west of the proposed site. U.S. Highway 20 is immediately to the south of the project area and provides access to it. The closest facility on the INL property is the Materials and Fuels Complex (MFC) located approximately 16 km (10 mi) west of the proposed property boundary.

Portions of the proposed EREF site are used for seasonal grazing. Wheat and potatoes are grown on 389 ha (960 ac) of cropland. Grazing and cropping are the main land uses on property within 8 km (5 mi) of the proposed EREF site. State land immediately west of the proposed site and BLM land immediately east of the site are grazed. The nearest crop lands are within 0.8 km (0.5 mi) of the southeast corner of the proposed site.

Physiography

The proposed EREF Project area is located within the Intermountain Semi-Desert Province (McNab and Bailey 1995). It is part of a large topographic depression, the Snake River Plain, which is approximately 50 to 100 km (31 to 62 mi) wide (INEEL 2004:11); the project area is specifically located in the eastern portion of the plain. The Snake River Plain is a crescent shaped area of topographic depression that is bounded on three sides by mountain ranges and extends across much of the southern portion of Idaho, covering about 40,400 km2 (15,600 mi2). Elevations in the project area range from 1,830 m (6,000 ft) in the northeast to about 1,070 m (3,500 ft) at the southeastern edge along the Snake River. In general, the topography consists of a gently rolling plain; however, a series of buttes (Big Southern Butte, Middle Butte, East Butte, and Menan Butte) are located within the central portion of the area (NRCS 2008a). Gradual slopes are present from east to west (1%) and from north to south (1.5%). There are a few intermittent drainages located in the northeastern corner and southeastern edge of the proposed site; all are currently masked as a result of agricultural uses. A distinct drainage is present in the southwestern corner of the proposed site.

Climate

The climate within the project area is considered to be semi-arid high desert. Rainfall averages approximately 25.4 cm/yr (10 in/yr), and snowfall averages approximately 89 cm/yr (35 in/yr). The highest amounts of precipitation [3 to 3.6 cm/mo (1.2 to 1.4 in/mo)] fall in May and June; however, evaporation and transpiration rates are high (NCRS 2008a).

Geology and Soils

The proposed EREF site is located in the eastern portion of Snake River Plain geologic province. The geology of the Snake River Plain is dominated by extensive volcanism that has deposited a thick sequence of Tertiary age rhyolitic and basaltic rocks, ranging up to 1524 m (5000 ft) thick;

basaltic lava flows are exposed in various locations throughout the project area. Geological units include the following: the Snake River Group (basalts with interbeds of sediments); the Yellowstone Group and Plateau Rhyolite (silicic volcanics); the Upper Idaho Group olivine basalts; the Starlight formation, Salt Lake formation, and Wlcott Tuff (combination of sediments, basalt, and tuffs); the Lower Idaho Group (olivine flood basalts and interlayers of silicic volcanics and sediments); and Idavada Volcanics.

According to the geological study for the ER (NRCS 2008b:3-9), soil cover "is variable , ranging from non-existent in areas of recent volcanism to tens of meters in thickness in areas of wind-blown loess derived from exposed lava flows, lacustrine deposits, and alluvial fill." The majority of the project area is semiarid steppe overlain by eolian soils that partially cover the volcanic lava flows. Geology on the surface is composed of Quaternary olivine basaltic lava flows with sediment interbeds (NRCS 2008b). On-site soils are primarily of the Pancheri series. Where they occur, these soils consist of deep silt loams and are commonly used for agricultural development, as rangeland, and as wildlife habitats (NRCS 2008b).

Hydrology

The Snake River is located approximately 32 k (20 mi) east of the proposed EREF. There are a few intermittent drainages located in the northeastern corner and southeastern edge of the proposed site; they are not readily visible as a result of agricultural uses. A distinct drainage is present in the southwestern corner of the proposed site and drains to the south. North of U.S. Highway 20, a few small ponds are present and had been used in the past for agricultural uses. A culvert under U.S. Highway 20 conveys the water from this drainage to the south (2008b).

Flora

The proposed EREF site is in native rangeland, disturbed native rangeland, and irrigated cropland. Portions of the proposed EREF site are used for seasonal grazing. The primary native community is sagebrush steppe (NRCS 2008c); big sagebrush is the dominant shrub species. Active irrigated farming has impacted approximately 390 ha (960 ac) of the natural steppe vegetation within the proposed project area. Recent dryland farming has occurred on about 882 ha (2,180 ac). Vegetation on the farmed areas is "dominated by herbaceous species with limited brush associated with basalt outcrops" (NCRS 2008c:2).

Fauna

Mammals typically found in the sagebrush steppe community include pygmy rabbit, black-tailed jackrabbit, mountain cottontail, Townsend's ground squirrel, Least chipmunk, Ord's kangaroo rat, Great Basin packet mouse, western harvest mouse, deer mouse, badger, coyote, pronghorn, and elk. Birds in the area include the mourning dove, greater sage grouse, northern harrier, European starling, horned lark, kildeer, sage thrasher, rough-legged hawk, and American kestrel. Reptiles are represented by the western rattlesnake, gopher snake, short-horned lizard, and sagebrush lizard (NRCS 2008c).

3 Culture History

Prehistoric Overview

Human occupation of the eastern Snake River Plain by hunter-gatherers began at least 12,000 years ago. These occupations have been documented through systematic archaeological investigations beginning in the late 1950s with the excavation of sites like Wilson Butte Cave (Gruhn 1961, 1965) southwest of the project area. Other major excavations include the Birch Creek sites and Veratic and Bison Rockshelters to the north and Wasden site and Owl Cave approximately 2.4 km (1.5 mi) to the northeast (Swanson 1972; Butler 1986; Miller 1982, 1990). In addition, more than 30 years of intensive surveys, testing, and excavation have taken place within the Idaho National Laboratory (INL) which is located immediately adjacent to the project area to the east (Reed et al. 1987a; Ringe 1995; Miller 1995). These studies have provided data for the development of regional chronological sequences (Butler 1986; Franzen 1981; Swanson 1972) which are divided into three major periods: Early, Middle and Late Prehistoric. The periods exhibit significant changes in projectile point types and delivery systems.

3.1.1 Early Prehistoric Period (15,000 to 7,500 B.P.)

Early discoveries at Wilson Butte Cave, a lava blister near Dietich, Idaho suggested a possible human presence by 14,500 +/- 500 B.P. in Stratum C (Gruhn 1961). More recent investigations produced a date of 10,500 BP and although the site is contemporaneous with late Clovis, no diagnostic artifacts were recovered (Plew 2000). The Clovis age subperiod dating between 12,000 and 11,000 B.P. is represented by scattered isolated finds and in deposits of Clovis age at Jaguar and Kelvin's caves. A cache of Clovis points and bifaces were found on the Snake River Plain near Fairfield, Idaho and are thought to be similar to those found at Anzick in Montana and Wenachee in Washington (Plew 2000). While none of the distinctive fluted projectile points from the Clovis period are found in the cave and rockshelter deposits or in direct association with extinct Pleistocene faunal remains, the basal levels of Owl Cave at the Wasden site contained Folsom fluted projectile points in direct association with mammoth bone (Miller 1982). Several Folsom points have also been recovered from surface contexts in the INL (Reed et al. 1987a). Late Paleo-Indian occupations have also been documented in the area and consist of unfluted lanceolate projectile points that were used to hunt large mammals including *Bison antiquus.* Butler (1986) notes that Owl Cave was used as a bison kill site on at least two occasions at the beginning and ending of the calving season around 8,000 B.P. and that at least 70 individuals may have been dispatched. Analysis of the faunal material from the bison bone beds is incomplete and much remains to be learned from the Wasden site (S. Miller, personal communication May 31, 2008). Lanceolate points known as Birch Creek and Haskett have been found in direct association with a series of bison kills dating to 8000 B.P. at Owl Cave and Veratic Rockshelters in the Birch Creek valley (Swanson 1972). Evidence from all of these locations both dated and undated indicate a heavy reliance on the hunting first of Pleistocene megafauna and later of bison and mountain sheep that survived the transition from the Pleistocene to the Holocene epoch. The discovery of the Buhl burial, a woman dating to 10,675 B.P indicates a diet composed primarily of meat and fish (Plew 2000). The sagebrush grassland steppes and internal playas of the area would have provided excellent habitat for large mammals

as well as small game and local plant resources and provided productive hunting and gathering opportunities of early occupants of the project area (INEEL 2004).

3.1.2 Middle Prehistoric Period (7,500 to 1,300 B.P.)

A major technological shift from occurred during the transition from the early prehistoric period to the middle prehistoric period and large lanceolate spear points were replaced by smaller notched and stemmed dart points and the adoption of the atlatl (Plew 2000). In addition, ground stone becomes more common indicating that plant foods such as camas increased in importance. Although the environment was warmer and drier than the proceeding period, the xeric vegetation was almost identical to that present today and it supported many animals of economic importance including bison and antelope on the grassland steppe and mountain sheep and deer in the higher elevations. Although internal playas held little water, they did support seasonal marshes (INEEL 2004). Point styles include Northern Side-Notched (Swanson 1972) and stemmed-indented base types resembling Pinto series points (Holmer 1986). The varying point styles indicate that people from the northwestern Great Plains as well as the Great Basin were moving in and out of the eastern Snake River Plain in response to deteriorating environmental conditions (Benedict 1979; Madsen 1982).

Near the end of the middle prehistoric period, stemmed-indented base type points give way to large corner-notched points resembling the Elko series in the Great Basin (Holmer 1986; Thomas 1981) and the Pelican Lake type in the northwestern plains (Plew 2000). Lanceolate points such as Wahmuza and the Humboldt (Holmer 1986) and McKean lanceolate are also common. Hunting remains the basic adaptation during this sub period.

3.1.3 Late Prehistoric Period (1,300 to 300 B.P.)

The late prehistoric period is marked technologically by the introduction of the bow and arrow and a decrease in projectile point size. Small corner-notched points resembling the Rosegate series of the Great Basin (Thomas 1981) occur first and dominate assemblages until approximately 700 B.P. These are replaced by small side and tri-notched points known as Desert Side-Notched (Holmer 1986; Thomas 1981) which dominate between 700 and 300 B.P. Ceramic vessels also appear during this time period and although they are common in assemblages post-dating 700 B.P. they may have occurred as early as 1200 B.P. (Plew 2000). Elaboration in the production of bone tools and wood tools and basketry may indicate the influence of Fremont peoples on the Snake River Plain (Plew 2000).

Environmental conditions were essentially modern with the exception of increased moisture around 700 B.P. when internal playas such as Lake Terreton to the north filled its shallow basin (INEEL 2004). Subsistence strategies remained centered on hunting of large game animals. Fishing, however, does increase and there is ample evidence of the use of root crops such as camas and biscuit root and the mortars and pestles used to process them. The lack of other types of grinding stones, however, indicates that seed crops were not common dietary elements. A high degree of mobility is indicated by the acquisition of raw materials but seasonal sedentism increases as reflected in habitation sites near springs and along the major streams (Plew 2000). These were winter camps in which people relied on stored foods including bison, deer and root crops. During the warmer months the groups dispersed to hunt and gather throughout the region. (INEEL 2004).

3.1.4 Protohistoric Period (300 to 150 B.P.)

The seasonal transhumance of the late prehistoric period continued in southeastern Idaho even after the first contact with Europeans, trade goods, and the introduction of the horse 200 to 300 years ago. The adoption of the horse by some groups, however, led to many changes in traditional aboriginal lifeways including significant increases in range, interaction with other groups and concomitant warfare and changes in political and social organization (INEEL 2004).

3.1.5 Historic Tribes

Southern Idaho and northern Nevada were the locations of three American Indian tribes at the time of European contact. The tribes included the Newe, now known as the Shoshone, the Numa, now known as the Paiute, and the Bannock, a group of Northern Paiutes (Liljeblad 1957; U.S.D.I. Bureau of Land Management 2008a). The Snake River Plain provides "a natural east-west corridor for trade and travel and an area that must be traversed for north-south travel along the river valleys" (INEEL 2004:22). Within and adjacent to the project area, the Shoshone (also Shoshoni) and Bannock were the primary inhabitants (INEEL 2004). They occupied overlapping regions of this area as a result of tribal relationships, climatic conditions, and available resources. This fluid lifestyle continued until the introduction of the horse in the mid-1700s from the peoples to the south as a result of Spanish contact. With the integration of the horse into their lifestyle, more formalized bands developed.

Increased mobility during the historic period resulted in the exploitation of a broader geographic area. Villages generally were situated within close proximity to waterways, but were not occupied year round. Pursuit of seasonal resources required that the Shoshone and Bannock remain mobile during the warmer months. Larger summer groups split into smaller winter groups. Big game hunting took place in the late summer and early autumn. These tribes remained relatively undisturbed by the trappers, traders, miners, and emigrants until gold discoveries and settlement of the area in the 1860s by EuroAmericans (INEEL 2004; Liljeblad 1957). As a result of this influx, the tribes were forced onto reservations. For a more detailed discussion of the historic tribes within the project area see the Idaho National Laboratory study (INEEL 2004) immediately adjacent to the project area.

Historic Overview

The INL Cultural Resource Management Plan (INEEL 2004) identifies one context for Euro-American activities in the region for the period before the government established the installation in 1942. Within that context, the INL study listed ten themes relevant to the region. Those themes include: early exploration and discovery, trapping and trading, the Oregon Trail, mining, cattle and sheep drives, transportation, Native American relations, settlement, irrigation, and ranching. In 1995 Susanne Miller developed the ten themes in a final draft cultural resource management plan for the INL; later, these were adapted for the 2004 INL cultural resource management plan (2004 CRMP Appendix F:206). The settlement and ranching themes have been implemented in this study.

Settlement in the region began during the 1850s and continued sporadically into the early 20th century. The Mormon Church sent the earliest settlers into the region during the 1850s. The early settlers established subsistence farms with some extra produce sold for cash to buy the

things they could not grow or make themselves. This subsistence pattern continued until the 1880s when improved transportation made commercial farming feasible. From that point forward, farming and ranching focused more and more on crops and livestock for market sales.

During the late 19th century, securing adequate water supplies became a critical problem for the farmers and ranchers of the Snake River plains; it slowed settlement and as Miller (1995:2-20) observed resulted in most of the homesteading occurring along the Big Lost River. Federal authorities recognized the water issue and in a series of three laws tried to first encourage private and then state investment in water projects. In 1902, the government took the lead by establishing the U.S. Reclamation Service (Miller 1995: 2-20-21; U.S.D.I. BLM 2008b). The laws led to further settlement in the region, and by the later 1910s settlers began to successfully claim and patent lands in the current survey area. Review of the GLO records for homesteading and land patenting in the project area found that settlers received patents to the majority of the lands in the current project area between 1919 and 1922. From 1922 until the 1950s patenting did not occur. The last patents in the survey area were issued in January of 1955 (GLO 2008). These settlers practiced dryland farming and ranching and waited for more irrigation projects to be built in order to access water. This never happened. The remainder of the 20th century witnessed a number of consolidations as owners put together larger and larger holdings (Metsker 1940; Land Title Co. 1976); the only water came from underground sources (Idaho Department of Water Resources files, Eastern Regional Office, Idaho Falls, ID). Owners continued to use the area for farming and grazing through the latter half of the 20th century. Given the emphasis on historic farming and grazing in and near the project area and its close proximity to the INL, the historic context for the proposed EREF Project is defined as the "Homesteading and Agricultural Settlement, 1910-1960."

4 Previous Work

A literature search was conducted by Glenda King, of the Idaho SHPO on May 16, 2008 for the proposed project APE and a 1.6 km (one-mi) buffer surrounding it. In addition, the files and records of the BLM Upper Snake Field Office in Idaho Falls were reviewed by Tom Lennon and Ed Stoner of WCRM on May 27, 2008; it was determined that a further review of the Government Land Office (GLO) records was necessary. Steve Mehls of WCRM reviewed the GLO records on-line on May 28, 2008 and reviewed the BLM records on-site on May 29, 2008. Five surveys have been conducted within the 1.6 km (one-mi) buffer surrounding the proposed APE.

File Search Results

Records at the Idaho SHPO and BLM indicate that five cultural resource inventories have been conducted within the 1.6 km (one-mi) buffer surrounding the proposed project APE; no cultural resource inventories have been conducted within the proposed project APE. These surveys yielded four sites; no isolated finds were present within the surveyed areas; they include the following:

1. *A Cultural Resources Inventory of the Perimeter Boundary, Grazing Boundary, and 1984 Project Areas, Idaho National Engineering Laboratory, Southeastern Idaho (Miller 1985)*
   This1984 study covered 2,848 ha (7,037 ac) and documented 80 sites. Of these, no sites are within the 1.6 km (one-mi) project buffer.

2. *Annual Review of Archaeological Investigations on the Idaho National Engineering Laboratory: 1986 (Reed et al. 1987b)* This is a supplement to *Archaeological Investigations on the Idaho National Engineering Laboratory 1984-1985 (Reed et al. 1986)*
   This 1986 study covered 3,636 ha (8,985 ac) and documented 139 sites. Of these, no sites are within the 1.6 km (one-mi) project buffer.

3. *U.S. Department of Interior, Idaho Falls District Bureau of Land Management, Archaeological and Historical Survey Report, Steven Croft Temporary Use Permit I-27485 (Hill 1990)*
   This 1990 study covered 12 ha (30 ac); no cultural resources were documented.

4. *Archaeological Clearance Survey for Ten Proposed Seismic Stations Sites for the EG&G Dynamic Crustal Processes Unit – HKG-02-91 (Gilbert 1991)*
   This 1991 study covered over 8 ha (20 ac) (the dimensions of access roads for Seismic Stations GBI and HWSI are not given). No new cultural resources were documented; however, one previously recorded resource, the Kettle Butte Site (10BV29) was avoided. This site does not fall within the proposed EREF Project area.

5. *Determination of Significance and Effect Prepared for the Natural Resource Conservation Service, Stephen Croft Project, NRCS-05-5600 (Vrem 2005)*
This 2005 study covered and undocumented number of hectares in an effort to protect four previously recorded sites (10BV30, 10BV31, 10BV32, and 10BV47). These NRHP eligible sites fall within the 1.6 km (one-mi) buffer surrounding the project area and include Owl Cave (10BV30), Coyote Cave (10BV31), and Dry Cat Cave (10BV32), all part of the Wasden Cave Complex. It was determined that 10BV47 (unnamed site) was outside of the impact area. The three cave sites consist of rock shelters with associated lithic materials and mammoth and bison bones. Site 10BV47 is a lithic scatter that included a fluted point.

4.1.1 Cultural Resources Not Documented in Survey Reports

Three sites (10BV83, 10BV84, and 10BV87) are located within the 1.6 km (one-mi) buffer surrounding the proposed project APE but have not been formally identified or documented in a survey report. In addition, no forms or additional information were available from the Idaho SHPO.

GLO Results

Review of the land patenting activity in the survey area found a significant wave of settlement during the 1910s likely in response to the boom markets of World War I and the hope that one or more new irrigation systems would be built in the region. Review of the GLO records for homesteading and land patenting in the project area found that settlers received patents to the majority of the lands in the current project area between 1919 and 1922. The first patents were issued to Robert and Reed Collet and Ray and Max Weaver in June of 1919. These individuals all took advantage of the Homestead Act to receive title to the lands and generally they claimed 320 acres, the limit under the law they used. The extent of the homestead patenting activity is interesting in that no other federal land laws were used by the claimants during the 1919-1922 period. Between 1922 and the 1950s, no more patenting occurred. The 1950s, after the Homestead Act had been repealed, witnessed the only cash sales in the survey area. In 1953 and 1955, D. F. Richards gained title to 480 acres in and near the survey area when he purchased the land from the government (GLO 2008).

Analysis of the GLO 1917 plat found that much of the survey area enjoyed road connections to the larger region. One road entered the survey area in the northwest quarter of Section 13 and trended southwest across the southern half of Section 14 and into the northeast quarter of Section 22, exiting the survey area through the southeast corner of the northeast quarter of Section 21. In that corner of the survey area, the road appears to connect to a two-track. Another road began near the eastern boundary of Section 13 trending south and then southwest across the northern half of Section 24 to near the center of Section 23 where it forked with one branch going roughly south across Section 26 and the other went southeast and then south across Section 25. Another road came near the survey area following a two-track plotted on the current Kettle Butte U.S.G.S. quadrangle reaching the present day location of U.S. Highway 20; it joins the highway where a north trending curve has its apex in the southeast corner of Section 27 (Anonymous 1917).

5 Statements of Objectives and Research Design

Statement of Objectives

The proposed APE has been defined as all project components inclusive of a 1.6 km (one-mi) buffer around the proposed EREF. The proposed EREF analysis area lies within the APE and is defined as the area that will be used for characterizing potential direct effects. A Class III survey of the the groundwater well locations, borehole locations, and proposed EREF site was conducted in the event that the proposed action is licensed in the future becoming a federal undertaking and requiring application of Section 106 of the National Historic Preservation Act (NHPA) as amended, its provisions, and policies. The objective of the Class III inventory of the project area was to locate and record cultural resources within the analysis area boundary, to evaluate each resource in terms of its NRHP eligibility, and to formulate appropriate management recommendations. This level of survey intensity allows for all visible cultural resources within the project boundaries to be located and recorded as well as evaluated in terms of NRHP eligibility. In addition, appropriate management recommendations can be formulated.

The development of the prehistoric and historic research design allows for an understanding of human occupation of the region and for properly placing the heritage resources into a broader perspective. In order to make an evaluation of significance using any criteria, an adequate background of the area's prehistory and history must be studied. This information provides the foundation upon which a research design can be developed. Provided with a research design based on extant data, appropriate research questions can be formulated and comprehensive evaluations of resources under the NRHP Criteria *a, b, c* and *d* can be made at the appropriate level of significance. Finally, based on the level of significance of the resource management recommendations can be proposed.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and:

(*a*) that are associated with events that have made a significant contribution to the broad patterns of our history, or

(*b*) that are associated with the lives of persons significant in our past, or

(*c*) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or,

(*d*) that have yielded, or may be likely to yield, information important in prehistory or history

Three key elements must be present to determine NRHP eligibility of a cultural resource: it must possess integrity, meet one of the four criteria that make it significant, and be older than 50 years before present.

To assist in evaluating cultural resources, a research design for both prehistoric and historic resources was developed. The research design, in conjunction with the cultural overviews, provides a context in which to determine the NRHP status of a resource. It delineates the

research themes, specific questions regarding those themes, and the data requirements for addressing the questions.

Prehistoric Research Design

The prehistoric research design and associated themes were adapted from the INL CRMP (INEEL 2004) and a recent paper on rock structures on the INL (Pace 2007). These documents should be consulted for further in-depth detail.

5.1.1 Research Theme 1: Chronology

Interpretation of chronological data from such artifacts as stone tools and ceramics can provide data that will further knowledge regarding the time periods during which an area was utilized prehistorically. Previous work on the INL (2004:181-185) recommended that projectile point and ceramic chronology could address the following research questions:

- What is the age of the stemmed-indented base point in the study area?
- What is the age of other stemmed points in the study area?
- What is the age of the large side-notched point in the study area?
- What is the age of the large corner-notched point in the study area?
- What is the age of the small corner-notched point in the study area?
- What is the age of the small side-notched point in the study area?
- What are the dates associated with the manufacture and use of the well-made globular vessels in the study area?
- What are the dates associated with the manufacture and use of the crudely made globular and conical vessels?
- What are the dates associated with the manufacture and use of the crudely made flat-bottomed vessels?

5.1.1.1 Data Requirements

With regard to the projectile points and ceramics, data requirements include finding these artifacts in buried deposits with other datable materials.

5.1.2 Research Theme 2: Settlement and Subsistence Strategies

The lifeways of ancient peoples can be interpreted through the data available regarding the distribution of sites in relation to the distribution of resources. Chronological information helps in this analysis by connecting sites temporally. Previous work on the INL (2004:185-193) defined research questions for specific time periods as follows:

<u>Paleo-Indian Occupations</u>

- Do fluted points always occur in large game hunting contexts or are small game and/or vegetable foods also part of Paleo-Indian subsistence?
- What tool types and food resources occur in association with Paleo-Indian lanceolate and stemmed points?
- Is there a direct special relationship between the Paleo-Indian stemmed points and extinct lacustrine systems?

Archaic Occupations

- Do ground stone implements commonly occur in Early Archaic sites?
- Do ground stone tools commonly occur in Middle Archaic sites?
- Do ground stone tools commonly occur in Late Archaic sites?
- Are there periods during the Archaic when the inhabitants were more logistically organized than at other times?

Late Prehistoric Occupations

- Is evidence of the Replacement Theory (i.e., Archaic populations replaced by Numic speakers) present in the archaeological record?

Protohistoric Occupations

- Is there evidence of a shift to a more complex logistical organization resulting in much larger residential bases that were quite mobile with the acquisition of the horse?

Historic Indian Occupations

- Is there evidence of increased logistical complexity with contact between cultures?

5.1.2.1 Data requirements

Paleo-Indian Occupations

- Any site that may have sealed subsurface deposits that occur in an area where points of this age and style are found. Sites that have high potential for aggrading deposits, such as in the lee of pressure ridges and in lava tubes in flows older than 10,000 years, should be considered to always have this potential.
- Two types of localities: 1) archaeological sites that contain diagnostic materials of this period where the surface of origin for those artifacts can be defined; and 2) selected non-archaeological locations where extinct lacustrine features (e.g., shore lines and marshes) can be excavated for datable materials. Based on a limited number of excavations, the ages of various exposed surfaces could be determined and their spatial extent mapped. Correlating this with archaeological site distribution would either support or challenge the lacustrine specialization hypothesis.

Archaic Occupations

- Any residential base site that contains artifacts diagnostic of the Early Archaic (e.g., Northern Side-Notched and Pinto series) would likely address this question. If properly excavated, the seasonality of site occupation could be determined so that the presence or absence of ground stone could be properly interpreted. Any sites other than residential bases that contain ground stone could also provide important information, especially if buried cultural material is present.
- Any residential base site that contains artifacts diagnostic of the Middle Archaic (e.g., Gatecliff and McKean series) or any site type dating to the Middle Archaic with ground stone artifacts.
- Any residential base site that contains artifacts diagnostic of the Late Archaic especially with the potential for subsurface deposits and preserved vegetal materials (e.g., a lava tube).

- Residential base sites, especially if they contain evidence of structures which would most likely be located adjacent to permanent water resources.

Late Prehistoric Occupations

- All sites that contain Numic artifacts (Desert Side-Notched points and/or pottery) and all sites that contain Late Archaic artifacts (e.g., Elko series points). Sites with buried deposits that might yield subsistence information are especially important.

Protohistoric Occupations

- Any site containing evidence of equestrian use (e.g., tipi rings) especially if subsurface deposits are present.

Historic Indian Occupations

- Aboriginal sites with historic artifacts (e.g., trade beads and metal or glass points) especially if undisturbed by modern agricultural or pastoral activities.

5.1.3 Research Theme 3: Cultural Relationships

Three traditionally defined culture areas overlap in the Upper Snake River Basin: the Great Basin to the south and west, the Northern Plains to the east, and the American Northwest to the north and west. The nature of the relationships between these three cultures can provide insight to the cultural development of the area. Previous work on the INL (2004:193-196) defined research questions for specific time periods as follows:

Early Archaic Occupations

- Does the assemblage of artifacts found in association with large side-notched points suggest a Northern Plains origin?
- Do the artifact assemblages directly associated with Pinto series points suggest an eastern Great Basin origin?

Middle Archaic Occupations

- Does the assemblage associated with the stemmed-indented base point remain relatively consistent across the large area described for the Middle Archaic expansion?

Late Archaic Occupations

- Are the artifact assemblages common during the Middle Archaic maintained into the Late Archaic?

Late Prehistoric Occupations

- Do Late Prehistoric sites exhibit artifact assemblages similar to Fremont?
- Do any Late Prehistoric sites contain artifact assembles similar to the Avonlea of the Northern Plains?

Protohistoric Occupations

- Can incursions into the Upper Snake River Basin be documented by artifacts diagnostic of the Blackfoot, Crow, Flathead, or Nez Perce tribes?

Historic Euro-American Occupations

- What is the nature of Mormon colonization in the Upper Snake River Basin?

5.1.3.1 Data requirements

Early Archaic Occupations

- Buried deposits with Northern Side-Notched points in association with other tools, especially in a cave, lava tube, or any open site suitable to have been used as a residential base.
- Sites containing Pinto series points in a buried context, especially if the site was used as a residential base. Caves, lava tubes, or dune areas near water might contain this information.

Middle Archaic Occupations

- Any undisturbed site containing buried Middle Archaic assemblages. Especially important sites would be those that have remained dry since occupation, such as caves, so that perishable artifacts are preserved.

Late Archaic Occupations

- Sites with buried Late Archaic deposits, especially in a dry cave where perishables would survive.

Late Prehistoric Occupations

- Any Late Prehistoric site containing buried deposits, especially in a dry cave where perishables would be preserved.
- Any site with Avonlea points, especially with buried deposits.

Protohistoric Occupations

- Any sites dating to the Protohistoric period.

Historic Euro-American Occupations

- Any historic homestead.

5.1.4 Research Theme 4: Demography

The density and distribution of populations over time provides information on resource use, climate change and adaptation, and the influence of catastrophic events. Previous work on the INL (2004:196-198) defined research questions for specific time periods as follows:

Paleo-Indian Population Density

- Was the proposed EREF area as heavily used during the late Pleistocene as other areas in the Upper Snake River Basin?

Archaic Population Density

- Does the dramatic increase in the number of Late Archaic sites over earlier sites indicate greater population density?

Late Prehistoric Population Density

- Does the population of the Upper Snake River Basin decrease during the Late Prehistoric?

Volcanic Activity and Human Behavior

- What effect have periods of volcanic activity had on regional populations?

5.1.4.1 Data requirements

Paleo-Indian Population Density

- Any site with Paleo-Indian artifacts, especially if subsurface deposits are present.

Archaic Population Density

- Any Archaic site, especially those with buried cultural deposits so that an estimate of length, occupation, and size of group can be made.

Late Prehistoric Population Density

- Sites with Late Prehistoric occupation, especially if subsurface deposits are present that may have information concerning group size and length of site occupation.

Volcanic Activity and Human Behavior

- Especially important to answering this question would be sites that are covered by volcanic flows. Since the presence of these features would not be detectable during survey, this kind of site would only be encountered during construction activities. Most post-eruption sites are recorded during survey, and those with subsurface deposits can provide information about the human use of the area.

5.1.5 Research Theme 5: Environment

To interpret human behavior, it is important to reconstruct the environment. Of particular interest is the change in artifact styles in relation to changes in environment. Environmental fluctuations also have ramifications with regard to subsistence and demographic changes. Previous work on the INL (2004:199) defined research questions for specific environments as follows:

Pleistocene Environments

- How quickly did the Pleistocene megafauna become extinct?

Holocene Environments

- What is the sequence of pluvial lake increase and decrease?

5.1.5.1 Data requirements

Pleistocene Environments

- Pleistocene sites with buried cultural deposits.

Holocene Environments

- Playa-edge sites, with or without cultural material, which contain datable deposits due to flooding and desiccation.

5.1.6 Research Theme 6: Technology and Material Culture

Aboriginal technology developed over time in the Upper Snake River Basin can provide information regarding how different groups developed different solutions to similar problems in the manufacture of artifacts. Previous work on the INL (2004:200) defined research questions for artifact types as follows:

Stone Tool Manufacture

- How are lithic resources acquired, reduced, and transported to the ultimate areas of use?

Basketry Technology

- Is there a change in basketry technology anytime after the Pleistocene?

Rock Structures

- What part do prehistoric rock structures play in the exploitation of resources?
- What is the function of prehistoric rock structures?
- Are there different types of structures and why?

5.1.6.1 Data requirements

Stone Tool Manufacture

- Any site with obsidian flakes that can be classified to their stage of reduction. This includes sites where lithic materials were being acquired, and those in which obsidian was being used to process other resources.

Basketry Technology

- Any site with preserved basketry remains. This would be expected only in dry cave situations, such as some of the lava tubes.

Rock Structures

- Any site with a rock structure and datable cultural material.

5.1.7 Research Theme 7: Data Recovery Techniques

It is possible that the acquisition of the various unique types of obsidian from its sources may coincide with the pursuit of other resources. It is possible that a map of obsidian sources may reflect the seasonal use of other resources by prehistoric peoples. In addition, obsidian can be dated by means of hydration techniques. Previous work on the INL (2004:201) defined research questions for obsidian sourcing and dating as follows:

The Sources of Obsidian Used for Stone Tools

- What are the sources of obsidian exploited by the occupants of the proposed EREF Project area?

The Age of Obsidian Tool Manufacture

- Can we determine the age of obsidian tool manufacture of specimens recovered from the surface of site in the proposed EREF Project area?

5.1.7.1 Data requirements

The Sources of Obsidian Used for Stone Tools

- All sites in the proposed EREF Project area that have obsidian artifacts.

The Age of Obsidian Tool Manufacture

- All sites in the proposed EREF Project area with obsidian artifacts, especially those with alternative dating potential (e.g., charcoal in fire hearths).

Prehistoric Property Types

Property types are classes of archaeological resources. They provide a link between the context and the resources sharing physical and/or associated characteristics. The first level of analysis of a resource is expressed through the definition of property types associated with a site. They are defined in ways that reflect the known or expected characteristics of sites. Property types also describe physical characteristics and their values providing information to make a determination as to their eligibility for inclusion on the NRHP. The context and its associated property type systematically function to support the decision-making process in cultural resource management.

5.1.8 Artifact

The individual artifact is the most simplistic property type. An artifact is any object made or modified by humans. It is a portable item that can be used in its pristine state or modified and manufactured for use. An artifact can be a lithic waste flake or a finished complex multi-element tool. Utilized bone, shell, or plant remains can also be artifacts. The only characteristic that must be present in order to make an item an artifact is the demonstrable effect of human use or modification. Artifacts can occur in isolated instances or as parts of larger entities such as features or sites. Single artifacts are never considered eligible for inclusion on the NRHP, and their importance with regard to site interpretation must be demonstrated.

5.1.9 Feature

Features are the next level of property type. They are non-portable objects or clusters of associated portable objects that have been modified or utilized by humans. Prehistoric features include items such as hearths, storage pits, caches, structures, rock alignments and cairns, rock art, or stone circles. Individual or clustered artifacts can be part of a feature. In some cases, groups of features and artifacts within a single site can be defined as an activity area (Binford 1983:124). In other words, features occur together in association with one another as a result of a single activity or event. Features can also occur as isolated manifestations or as parts of sites. An isolated feature would rarely be considered eligible for inclusion on the NRHP.

5.1.10 Site

The term site is defined in the National Register *Bulletin 15* as "the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure." Sites may be the result of a single event (e.g., a bison kill site) or multiple individual events over an extended period of time (e.g., a stratified camp site). Sites are made up of clusters of artifacts and/or features and relationships to other sites can be demonstrated as a result of mobility, settlement systems or economic patterns. Sites may be eligible for inclusion on the NRHP.

5.1.11 Districts

Districts are areas where groups of sites are interrelated, having features and artifacts that rely upon each other for associative and interpretive understanding. Districts include sites that have significance as a group.

Historic Period Context and Research Design

NRHP cultural resource evaluations are based on historic context. A historic context, as defined by the NRHP, contains three elements and serves two essential functions in the cultural resource management decision-making process. The three elements are time, place, and theme. The time element is a parameter that defines, or is related to a chronological period encompassed by the activity discussed in the stated theme and serves as the period of significance. Place is the specific geographic area at which activities associated with the theme took place. Place also functions to help define a resource's level of significance by allowing the resource to be associated with larger geographic areas. Theme identifies the basic socio-cultural activities or lifeways represented by the area under discussion, such as the development of ranching in the project area. The two main functions of a context are: 1) to help assure consistent resource evaluation; and, 2) to offer guidance to researchers about the types of data needed to address a research design for the project area.

5.1.12 Homestead and Agricultural Research Design

WCRM used the context statement to define the focus and scope of the research design. WCRM also adapted appropriate questions from a previous research design. The INL CRMP (INEEL 2004) provides an extensive research design for historic properties and within their settlement

and subsistence problem domain two research questions are posed regarding Euro-American occupations of the region. The questions include:

- How much did these early white settlers rely on mail order for their necessities and how much was available in the local environment, and
- How valuable were iron and steel tools and glass containers? (2004 CRMP Appendix E, p. 193).

The authors also pose a relevant question in their problem domain on cultural relationships when they ask,

- What is the nature of Mormon colonization in the upper Snake River Basin? (2004 CRMP Appendix E, p. 196).

These questions place a research value on homesteads and trash scatters as data sources.

Two additional sources have been reviewed and incorporated to prepare the Homesteading and Agricultural Settlement research design for this study (Hardesty 2005; Stein 1990). Two additional homesteading related research questions were developed utilizing these sources:

- Can evidence of farming or ranching technological or operational changes be found that can be used to identify and/or explain adaptations the local residents made in their farming or ranching techniques to accommodate the local aridity, soils or changing market conditions?
- Can various roles and functions of women and children, commonly under-represented in the historical record, be clarified from the archaeological remains of the farm or ranch or its features?

WCRM also tailored the National Register Criteria and integrity considerations to this project to aid in the evaluations of the Homesteading and Agricultural Settlement resources recorded in the AREVA project area. Since no standing architectural resources were recorded, WCRM did not develop a discussion of Criteria b or c for the context. For eligibility under Criterion a, WCRM considered these points while forming eligibility recommendations: 1) is the resource a main ranch or farm headquarters either Bonneville county and is it a relatively complete example of a time period or trend in local agricultural development, and 2) is the property associated with an event or trend important to local or state history? For Criterion d eligibility, WCRM asked three questions: 1) can the property provide significant information pertinent to addressing the research questions found in the research design above, 2) is the property associated with the specific ethnic group, and 3) does the property have interpretive values?

Eligibility recommendations also took into account the integrity of the resource and since all the recorded sites were archaeological in nature the integrity considerations necessarily focused on archaeological integrity. Concepts of visibility and focus (Deetz 1977) were utilized to assess the archaeological integrity of the recorded resources. Archaeological sites generally do not possess significant portions of their materials, workmanship, and design from the period of significance and are not likely to retain sufficient integrity to be considered eligible for inclusion in the NRHP under Criteria *a*, *b* or *c*, and in the Deetz system would be considered to have poor visibility. Sites that include a mixture of time periods associated with the various themes and property types from intermingling are considered to have lost their focus. On the other hand, if

sites do not have severe intermingling of themes or property types or if the site exhibits good stratification reflecting the theme it is associated with, the site is considered to have good focus. Sites with good focus are considered to have enough integrity to be eligible under Criterion d. Sites that have severe intermingling or that have experienced extensive post-occupational disturbance become montages of warped and twisted images of earlier occupations. At that point the site has lost its focus and is no longer considered eligible under Criterion *d* due to a loss of integrity.

6 Field Methods

In the event that the proposed action is licensed as a future federal undertaking requiring the application of Section 106 of the National Historic Preservation Act (NHPA) as amended, its provisions, and policies, a Class III survey of the five groundwater well locations (approximately 1.15 acres), ten borehole locations (within EREF), and the proposed EREF footprint (two access roads and the plant) [approximately 381 ha (941 ac)] was conducted to identify, document, and evaluate cultural resources. The five groundwater well locations were surveyed on April 14, 2008 and consisted of an inventory of an area of 100 ft by 100 ft around each hole. The ten borehole locations within the EREF were surveyed on May 12, 2008 and consisted of an inventory of an area of 100 ft by 100 ft around each location. The survey of the EREF was conducted under the direction of Ed Stoner, WCRM Project Manager between May 27 and June 3 and by Thomas J. Lennon on July 23, 2008. Survey crews consisted of between one and seven people. Ground visibility was variable depending on the types of vegetation present. Special attention was given to depressions, rodent burrows, and anthills.

The boundary locations of the study area were loaded into GPS receivers to assist in locating and assessing the area. The survey was performed in zigzag transects spaced 15 m (49 ft) apart. Special attention was given to depressions, rodent burrows, and anthills. When an isolated occurrence was encountered, its attributes were recorded and a GPS measurement was taken. Cultural resource sites were recorded on sketch maps produced by compass and pace with assistance for the GPS. Sites located during the survey were recorded on Archaeological Survey of Idaho Site Inventory Forms and photographs of the sites and study area were taken. No artifacts were collected. The recommendations made by WCRM were based on the field inventory and archival research. Records and photographs are on file at the WCRM Boulder and Reno offices.

Assigning chronology and function to prehistoric sites in the absence of excavation is problematic, but provides a baseline for the evaluation of sites. There are two methods used to date archaeological components – relative and absolute. In "relative or cross-dating," temporal markers such as projectile points or ceramic styles are dated relative to one another based on their placement within stratified deposits. Absolute dating (e.g., carbon-14, obsidian hydration, dendrochronology, and archaeomagnetism) uses a higher level of precision and forms the basis for relative dating schemes. Only surficial information was available to make a preliminary evaluation of the potential of the sites to yield significant information that might address questions posed in the previously discussed Prehistoric Research Design (see Section 5.2). It is recognized that diagnostic surface artifacts may have been curated by prehistoric, historic, and modern day people by either transporting artifacts of previous time periods and occupations to locations out of their original context or by removing them from their original location entirely. No cultural material was collected.

Between October 1 and 3, 2008, subsurface test probes were placed in three sites. Per consultation with the Idaho SHPO, test probes consisted of 50 cm square units dug in arbitrary 10 cm levels measured below the surface (cmbs). The test probe units were placed in a grid at intervals of five meters in MW002 and in two transects at intervals of five meters in

Concentration of A of MW012. In addition, one shovel test probe was placed in the Feature 1 of MW012. Two shovel test probe transects at five meter intervals were also excavated to the east and west of site MW015. All sediments were passed through ¼ inch mesh, and all artifacts from the probes were collected. All artifacts collected during testing of the sites will be returned to the private landowner. Representative profiles were drawn of probes in each tested site and the soils and sediments were described. Shovel test probe units were terminated after two sterile levels and did not generally exceed 30 cm in depth below ground surface. All shovel test probe units were backfilled upon completion. Paperwork completed in the field on October 4, 2008.

7 Inventory Results

Newly recorded resources include 11 sites and 17 isolated finds. Of the newly recorded cultural resources, three are prehistoric, four are historic, and four are multi-component. The prehistoric sites include a site with two projectile points (MW011), a lithic scatter associated with a rock feature (MW012), and a lithic associated with a small rock wall feature (MW015). Historic sites consisted of two trash scatters (MW003 and MW009), a trash scatter and associated rock feature (MW013), and a trash scatter associated with a two-track road (MW014). Multi-component sites include a prehistoric lithic scatter associated with a historic trash scatter (MW002), a prehistoric lithic scatter associated with the John Leopard homestead (MW004), a prehistoric scraper associated with a historic trash scatter (MW006), and a prehistoric projectile point midsection associated with a historic trash scatter and two rock features of indeterminate age (MW007). Previously undocumented isolates include four prehistoric, ten historic, one multi-component, and two that are indeterminate in age.

With regard to disclosure of site information to the public, as per the NHPA and the ARPA, the location, character, or ownership of a historic property must be withheld. Although specific site location information is given in Volume 2 this information is housed at the Idaho SHPO under the provisions of these laws.

7.1.1 Site Descriptions

7.1.1.1 MW002

This is a 52 m by 80 m (171 ft by 262 ft) multi-component site consisting of a prehistoric lithic scatter and a sparse historic debris scatter. It is located on a grassy, gently sloping plain a little over 1.6 km (one mi) northeast of the north end of Twentymile Rock. The soil is pale yellowish brown clayey silt with few basalt lava pebbles and the area is vegetated primarily by Lincoln crested wheatgrass, a non-native species. The prehistoric assemblage consists of six flaked lithic tools (two chert cores, one chert Stage III biface fragment, one obsidian projectile point midsection, one chert scraper, and one obsidian utilized flake) and 68 flakes. Fifty-six of the flakes are obsidian tertiary, ten are chert (nine tertiary, one secondary), and two are quartzite tertiary.

Evaluative testing was conducted on October 1 and 2, 2008 and a total of 17 shovel test probes (STPs) were excavated. The test probe units consisted of 50cm squares dug in arbitrary 10cm levels below the surface. They were placed in a grid at intervals of five meters. Five of the units yielded one obsidian flake field specimen (FS) within the first 10cm below the surface, and one yielded an obsidian flake within the first 20cm below the surface (Table 1). The six flakes collected during evaluative testing will be returned to the private landowner.

Table 1. MW002 Shovel Test Probe Results.

Site	STP	Grid N	Grid E	FS	Level	Top Level	Bottom Level	Artifacts
MW002	-	90	85	-	-	0	30 cm	None
MW002	-	90	100	1	1	0	10 cm	1 tertiary obsidian flake
MW002	-	90	105	-	-	0	20 cm	None
MW002	-	95	90	1	1	0	10 cm	1 obsidian flake
MW002	-	95	100	-	-	0	20 cm	None
MW002	-	100	85	1	1	0	10 cm	1 tertiary obsidian flake
MW002	-	100	85	2	2	10	20 cm	1 tertiary obsidian flake
MW002	-	100	90	-	-	0	20 cm	None
MW002	-	100	95	-	-	0	25 cm	None
MW002	-	100	100	1	1	0	10 cm	1 tertiary obsidian flake
MW002	-	100	105	-	-	0	50 cm	None
MW002	-	100	110	-	-	0	30 cm	None
MW002	-	100	115	-	-	0	20 cm	None
MW002	-	105	90	-	-	0	30 cm	None
MW002	-	105	100	-	-	0	27 cm	None
MW002	-	105	105	-	-	0	20 cm	None
MW002	-	110	100	1	1	0	10 cm	1 obsidian flake
MW002	-	115	100	-	-	0	20 cm	None

Surface soil is a pale brown clayish silty loam. Stratum I (0-10cmbs) is a light brown, clayish, silty loam that is loose to moderately compact. Stratum II (10-20cmbs) is a light brown to light yellow moderately compact clayish loam. Stratum III (20-30cmbs) is even lighter in color than Stratum II and moderately compacted with dense nodules near the bottom of the stratum. Where excavated, Strata IV and V were found to be the same in character as Stratum III. The probe results indicate that the site is restricted to the surface and the few artifacts recovered were within the first two strata (0-20cm) with the majority occurring in the first stratum (0-10cm).

7.1.1.2 MW003

This site is a 26 m by 17 m (85 ft by 56 ft) sparse scatter of historic cans located on the northern and eastern sides of a rocky knoll. The sediment in the area is a silty clay loam that supports tall sagebrush, rabbitbrush, and native grasses. The site includes eight cans; four are single-serving venthole cans (about 7.46 cm diameter by 11.11 cm tall (2 15/16 in diameter by 4 3/8 in tall)) and four are hole-in-cap (two are about 8.57 cm diameter by 11.43 cm tall with a 4.28 cm cap (3

3/8 in in diameter by 4 ½ in tall with a 1 11/16 in cap), and two are too fragmentary to determine dimensions). All of the cans are at least somewhat crushed and fragmented. The venthole cans were opened with two punched holes, possibly with a knife, and the hole-in-cap cans are too fragmentary to ascertain their opening method.

7.1.1.3 MW004

This 416 m by 198 m (1,365 ft by 650 ft) site is multi-component, consisting of a sparse prehistoric lithic scatter and a historic homestead occupation. The historic component of the site consists of two loci – the homestead (Locus 1) and a ranching activity area (Locus 2).

Locus 1 is situated atop a low north/south-trending ridge and down its gently east-trending slopes, on the Snake River Plain. Sediment in the area is light tan clayey silt with some volcanic outcrops on the ridgetop. The vegetation includes low sagebrush, rabbitbrush, native grasses, and forbs. The prehistoric component is located within this locus and contains four artifacts: two obsidian Stage III biface (probable projectile point) fragments and two flakes. The historic component consists of nine features (one dugout depression, one possible privy depression, one cistern, one trash concentration, two rock piles, and three roads) and a scatter of historic domestic trash. The artifact assemblage includes hole-in-cap, venthole, and sanitary cans; bottle glass; stoneware crockery; white improved earthenware; a graniteware coffeepot; a shell button; baking and frying pans; lumber fragments; and shoe sole fragments. Nine diagnostic historic artifacts are present, and the overall assemblage suggests a date range of 1890-1930. Historic research shows that this site is likely the John Leopard homestead, patented in 1919.

Locus 2 includes is a historic cistern, large depression, and very sparse scatter of historic trash covering an 80 m by 35 m (262 ft by 115 ft) area on a gentle west-trending slope on the Snake River Plain. The area is vegetated by low sagebrush, rabbitbrush, native grasses, and forbs and the sediment is soft, light brown, clayey silt with few angular to subangular volcanic gravels and pebbles. The cement-lined cistern (Feature 1) has a narrow sluice, is covered with a deteriorating board cover, and is reinforced with stacked volcanic small boulders. The depression (Feature 2) is located on a small rise to the north of the cistern and may be a stock pond. Artifacts include a lug handle bucket, a graniteware wash basin, and scattered dimensioned lumber; all of them are located immediately adjacent to the cistern and are not found between the cistern and the depression. Locus 1, the Leopard homestead, is located about 200 m (656 ft) to the northeast.

7.1.1.4 MW006

The site is multi-component, consisting of a small, sparse scatter of historic trash and a prehistoric chert scraper in a 22 m by 22 m (72 ft by 72 ft) area. It is situated on the gentle west-facing slope of a low north/south-trending ridge on the Snake River Plain and it is vegetated by low sagebrush, rabbitbrush, native grasses, and forbs. The sediment is light brown clayey silt with few angular to subangular volcanic gravels and pebbles. The site's prehistoric component is a retouched and utilized chert scraper made on a flake. The historic component is a scatter containing dimensioned lumber fragments in no discernable configuration; metal hardware (possible fence components); and cans (a lard pail and a hinged-lid Prince Albert upright pocket tobacco tin).

7.1.1.5 MW007

The site is multi-component, consisting of a historic trash scatter, two rock features of indeterminate age, and an obsidian projectile point midsection in a 75 m by 75 m (246 ft by 246 ft) area. It is located on the top and sides of a small knoll on a low north/south-trending ridge system on the Snake River Plain, in an area vegetated by low sagebrush, rabbitbrush, native grasses, cheatgrass, forbs and occasional cacti. The sediment is soft, light brown clayey silt and much of the site has volcanic bedrock outcrops. The site's prehistoric component consists of a small Stage III biface/projectile point midsection fragment. The historic component is a sparse trash scatter containing hole-in-cap, venthole, and upright pocket tobacco tin cans; sherds of two WIE vessels with a flow blue design and a Dutch maker's mark; the lid from a Runkel Brothers cocoa tin; and an animal shoe nail. The site also contains two rock features: Feature 1 is a low pile at the top of the rise and Feature 2 is a nebulous circular alignment on the west-facing slope. Their ages are unknown.

7.1.1.6 MW009

The site is a small, sparse scatter of historic trash located on a nearly flat slope on the Snake River Plain. The area is vegetated by low sagebrush, rabbitbrush, native grasses, and forbs and the sediment is soft, light brown clayey silt with very few angular to subangular volcanic gravels and pebbles. The site measures approximately 17 m by 38 m (56 ft by 125 ft) and contains 11 sanitary one-quart oil cans and an oil filter.

7.1.1.7 MW011

The site is two obsidian Elko corner-notched projectile point fragments, nearly whole, located on a gentle west-facing slope on the Snake River Plain. The area is vegetated by low sagebrush, rabbitbrush, native grasses and forbs and the sediment is soft, light brown clayey silt with few angular to subangular volcanic gravels and pebbles. The two points are about five meters apart. Several pieces of modern trash are located nearby (deteriorated aluminum foil, a small ferrous metal clasp, and a plastic-cased electrical object). No other artifacts or features are present.

7.1.1.8 MW012

This 115 m by 31 m (377 ft by 102 ft) site consists of a lithic and groundstone scatter and a prehistoric feature located on the Snake River Plain, west of Kettle Butte and north of Twentymile Rock. The vegetation is predominantly native grasses and low sagebrush, and the sediment is light brown silty clay with very few volcanic pebbles and cobbles. The site contains a general artifact scatter as well as two artifact concentrations, Concentration A and Concentration B. The total number of flakes on the site is 126 (80 obsidian and 46 chert), and there are nine lithic tools: a granodiorite mano (FS-3); a granite mano fragment (FS-8); an obsidian corner-notched projectile point fragment (FS-2); a chert biface fragment (FS-1); three obsidian generic biface fragments (FS-4, FS-7, and FS-9); an obsidian Stage II biface fragment (FS-5); and a quartzite hammerstone (FS-6).

Concentration A is a 26 m by 8 m (85 ft by 26 ft) area containing 71 flakes (30 obsidian tertiary and 41 chert tertiary) and three tools (FS-2, FS-3, and FS-4), as well as Feature 1. Feature 1 is a 4 m (13 ft) diameter area containing a cluster of about 18 basalt cobbles, numerous fragments

of mammal tooth enamel, 23 of the concentration's obsidian flakes and 12 of its chert flakes. Most of the flakes in the feature are very small. Concentration B is an approximately 13 m by 13 m (43 ft by 43 ft) area containing 29 obsidian tertiary flakes and four tools (FS-5, FS-6, FS-7, and FS-8). The rest of the site contains two tools (FS-1 and FS-9) and about 26 flakes (20 obsidian tertiary, one obsidian secondary, and five chert tertiary).

Evaluative testing was conducted on October 2 and 3, 2008 and a total of four shovel test probes were excavated in two transects at intervals of five meters in Concentration A including one probe placed in Feature 1, a cluster of basalt cobbles. One white chert flake was recovered from one of the three probes excavated outside of Feature 1; it came from the upper 10 cm of the deposit (Table 2). The single shovel test probe excavated in Feature 1 produced four flakes. Of these, one chert flake was recovered from the surface, two obsidian flakes were present in Level 2 (10-20cmbs), and one obsidian flake was present in Level 3 (20-30cmbs). No charcoal, staining, or fire-cracked rocks were noted in the Feature 1 probe and the function of this rock cluster is unknown. The five flakes collected during evaluative testing and will be returned to the private landowner.

Table 2. MW012 Shovel Test Probe Results.

Site	STP	GRID N	GRID E	FS	Level	Top Level	Bottom Level	Artifacts
MW012	-	100	115	-	-	0	20	None
MW012	-	105	110	-	-	0	30	None
MW012	-	105	120	1	0	0	0	1 white chert flake
MW012	STP1	-	-	1	0	0	0	1 white chert flake
MW012	STP1	-	-	2	2	10	20	2 obsidian flakes
MW012	STP1	-	-	3	3	20	30	1 obsidian flake

In terms of the stratigraphy, sediments on the site are similar to those of MW002. Stratum I is pale brown silt containing grass and sagebrush roots. Stratum II was noted approximately 5 cm below the ground surface and consists of light yellowish brown silt loam with a high calcium carbonate content and a approximately ten percent total volume content of basalt gravels. The probe results indicate that the site is restricted to the surface and that the few artifacts recovered from the upper 10 to 20 cm of the deposit are well within the trample zone for cattle that were grazing the area when the testing took place.

7.1.1.9 MW013

This 49 m by 26 m (161 ft by 85 ft) site consists of a small historic debris scatter and rock pile feature located on a low hill composed of basalt outcrops, situated in the Snake River Plain west of Kettle Butte and north of Twentymile Rock. Grasses, sagebrush, rabbitbrush, prickly pear, and small forbs cover about 75-80% of the ground surface, and the sediment is light to medium

brown clayey silt with pebbles and cobbles of basaltic lava rock. Feature 1 is a 3 m by 2 m by 0.75 m high (10 ft by 6.5 ft by 2.5 ft high) rock pile. The debris scatter consists of 18 cans (seven sanitary, seven venthole, two upright pocket tobacco, one MJB coffee, and one indeterminate); a board fragment; a piece of barbed wire; and a piece of baling wire.

7.1.1.10 MW014

This 54 m by 27 m (177 ft by 89 ft) site consists of a sparse, disturbed historic debris scatter and a two-track road located on a flat, grassy pasture about 4 km (2.5 mi) west/southwest of Kettle Butte. Vegetation consists of grass and weeds with a few rabbitbrush, and the sediment is light brown silty clay with few volcanic pebbles. The site contains two features; Feature 1 is a 14 m by 8 m (46 ft by 26 ft) debris scatter and Feature 2 is a north/south-trending two-track road. Artifacts in Feature 1 include can fragments (mostly indeterminate type); colorless glass; wire; oil filters; a bucket; metal strapping; a metal drum lid; three metal discs from a farm implement; a crushed metal drum; an Owens-Illinois bottle in multiple fragments; and about 10 board fragments. Artifacts in the general scatter include oil filter fragments; a chrome "O" or "0", and two rectangular metal plate fragments (possibly from one or two license plates).

7.1.1.11 MW015

This 4 m by 3.5 m (13 ft by 12 ft) site consists of a small rock wall and a single prehistoric artifact (an obsidian tertiary flake) located on a low basalt outcrop on the Snake River Plain, west of Kettle Butte and north of Twentymile Rock. Vegetation is predominantly grasses and sagebrush, and the soil is light brown silty clay. Feature 1 is a 1.25 m long by 1 m wide by 45 cm high wall (4.1 ft long by 3.3 ft wide by 17.7 in high wall) made of about 13 local basaltic lava boulders; it is adjacent to a natural outcrop and basically forms an extension of it. The flake is located immediately northeast of the feature. The feature's age and function are unknown.

Evaluative testing took place on October 3, 2008. Two shovel test probe transects were established in broad swales to the east and west of the low ridge that contains the site. The probes were placed at five meter intervals and a total of ten probes were excavated. All probes were excavated to 20 cm below the present ground surface and no artifacts were recovered.

In terms of the stratigraphy, sediments on the site are identical to those of MW012. Stratum I is pale brown silt containing grass and sagebrush roots. Stratum II was noted approximately 5 cm below the ground surface and consists of light yellowish brown silt loam with a high calcium carbonate content and a approximately ten percent total volume content of basalt gravels. The probe results indicate that the site is restricted to the surface.

Isolated Find Descriptions

A total of 17 isolated finds (Table 3) were recorded during the course of the Class III pedestrian survey. The prehistoric isolated finds consist of two flakes (IF01 and IF02) and two tools (IF04 and IF14). The historic isolated finds include portions of farm equipment (IF03 and IF07), can fragments (IF06, IF08, IF10, IF11, and IF17), a set of wash tubs (IF09), a lard pail (IF12) and lumber with wire nails (IF13). One isolate (IF18 included both a prehistoric (biface) and a historic (two washtubs) component. Two rock features (IF05 and IF16) are of indeterminate age.

Table 3. Isolated Finds/Artifacts located within the Proposed EREF Project Area.

Temporary Isolate Number	Time Period	Isolate Description
IF01	Prehistoric	Obsidian tertiary flake
IF02	Prehistoric	Chert tertiary biface thinning flake
IF03	Historic	Possible disker
IF04	Prehistoric	Obsidian projectile point midsection
IF05	Indeterminate	Cairn
IF06	Historic	Can fragment
IF07	Historic	Possible disker blades (2)
IF08	Historic	Venthole can fragment and piece of ferrous metal
IF09	Historic	Galvanized wash tubs (2)
IF10	Historic	Venthole can
IF11	Historic	Venthole can
IF12	Historic	Lard pail
IF13	Historic	Board fragments (30) and wire nails
IF14	Prehistoric	Obsidian biface fragment
IF16	Indeterminate	Rock feature
IF17	Historic	One venthole can and one hole-in-cap can
IF18	Multi-component	Prehistoric biface associated with two historic washtubs (formerly MW010)

Modern Trash Scatter

During completion of the Class III survey on July 23, 2008, a non-historic trash scatter measuring 25 m by 10 m was noted. It consists of a torch cut iron tank, possibly an old watering trough, and wood dump. The tank probably was fashioned from a water heater/boiler, and the cut face was lying face down. In addition, there were two "concentrations" of lumber: 1) six small pieces of milled wood with most ends cleanly cut and some with a diagonal cut on one end; and 2) six small pieces of wood (four are milled, one of the milled pieces has a diagonally pointed end, one has a machined hole near the end and appears to be a fragment of a "4 x 4," and two with clean cuts. There are also two pieces of trimmed timbers with evidence of a chain saw cut on one end. Also present are, one piece of torch cut iron, a metal fragment, possibly the door to the heater/boiler, a small fragment of mirror, a small fragment of translucent plastic, and a crushed pull top Pepsi can. The wood artifacts and most of the metal are not historically diagnostic. The temporally diagnostic artifact, the crushed pull top Pepsi can, is less than 50 years old and, therefore, historically non-significant.

8 Evaluation and Recommendations

Eleven sites and 17 isolated finds were recorded within the 381 ha (941 ac) proposed EREF Project boundary during the pedestrian survey. Evaluations and management recommendations for the individual sites are discussed below. The isolates are not recommended as eligible for inclusion on the NRHP.

Application of Research Design

8.1.1 Prehistoric Cultural Resources

Although surficial evidence from sites provides only tentative information, a few general observations can be made with regard to the previously mentioned research themes of chronology, settlement and subsistence strategies, cultural relationships, demography, environment, technology and material culture, and data recovery techniques. Table 4 indicates the possible themes the prehistoric component of each site could address based on surficial data.

Table . Prehistoric Components and Possible Applicable Research Design Themes.

Temporary Site Number	Research Design Theme	Recommended Eligibility
MW002	Themes 2, 6, 7	Not eligible
MW004	Theme 6, 7	Not eligible
MW006	No theme evident	Not eligible
MW007	Themes 6, 7	Not eligible
MW011	Themes 1, 2, 6, 7	Not eligible
MW012	Themes 1, 2, 6, 7	Not eligible
MW015	Themes 6, 7	Not eligible

Even though it appears that the prehistoric components for MW004, MW007, and MW011 could address a research theme, MW002, MW004, MW011, MW012, and MW015 appear to be limited surficial remains and are unlikely to yield any further information. MW007 appears to be an isolated occurrence and will not likely yield additional data. At this stage, there is no surficial evidence for the support of Themes 3, 4, and 5; further investigations at sites determined to be eligible may provide this support.

8.1.2 Historic Cultural Resources

The majority of the resources WCRM recorded from the historic period can be affiliated with the agricultural settlement and subsequent use of the survey area. The historic component of site MW004 is the John Leopard Homestead; recordation and archival research indicate that the component will provide information relevant to the research questions regarding reliance by settlers on mail order for their necessities. This component also provides evidence regarding the adaptations (e.g., installation of cistern features) local residents made in their farming or ranching techniques in order to accommodate the local aridity and character of soils. The survey found no information that could help explain the roles and functions of women and children on farms and ranches within the project area.

There was no clear evidence regarding the value of iron and steel tools or glass containers within the historic community. Evidence was found to support the importation of quantities of food and other necessities to support the lifeways of the local residents. Seven of the sites with historic period components had cans and other indicators of imported foodstuffs, while only one did not. Many of the isolates also provided evidence of foodstuff importation. Further study of MW004 may identify the sources of these items; however, it is evident that imported items played a significant role in the lives of local farmers and ranchers. The only farmstead, the Leopard Homestead, was according to the patent files the home of a bachelor so the investigations of the roles played by women and children in the area could not be carried out with the field data.

National Register Eligibility

Cultural resources identified in the proposed EREF facility boundary were evaluated based on the criteria as outlined in 36 CFR 60.4 and described in Section 5.0 of this report.

8.1.3 Site MW002

The prehistoric component of MW002 is a lithic scatter consisting of six tools and 68 flakes. Based on evaluative testing, the site is restricted to the surface and is unlikely to yield additional information. The prehistoric component of the site is recommended not eligible for inclusion in the NRHP.

The historic component of this site is recommended not eligible under the four National Register criteria. The small can scatter can not be clearly associated with the relevant historic theme of early 20th century homesteading or any others. As a result the component is not recommended eligible under Criterion *a*. The historic component could not be linked to any individuals and as a result does not have the associations needed to be considered eligible under Criterion *b*. The component has no architectural or engineering presence and as a result cannot be recommended eligible under Criterion *c*. The limited historic artifact assemblage appears to be a surface manifestation indicating that intact subsurface deposits that might provide additional information on early 20th century homesteading in the Snake River Plains are not present; as a result, the component is not recommended eligible under Criterion *d*.

8.1.3.1 Management Recommendations

No further work.

8.1.4 Site MW003

This site consists of a small historic can scatter and is recommended not eligible under the four National Register criteria. It cannot be associated with any historic themes including the theme of early 20th century homesteading and, therefore, is not recommended eligible under Criterion *a*. The site could not be considered eligible under Criterion *b* because there are no linkages to prominent individuals. The site lacks an architectural or engineering presence and cannot be recommended eligible under Criterion *c*. The limited artifact assemblage at the site indicates that it is most likely a surface manifestation and not an important repository of information that could

provide additional data regarding early 20th century homesteading in the Snake River Plains; as a result, the site is not recommended eligible under Criterion *d.*

8.1.4.1 Management Recommendations

No further work.

8.1.5 Site MW004

The prehistoric component of the site, two biface fragments and two flakes, appears to be a surface manifestation and will not yield further information. This component is recommended not eligible under Criterion *d.*

This historic component of the site is the John Leopard Homestead. This component is recommended as eligible under Criterion *a*; it is as an example of early 20th century homesteading. Between 1905 and 1920, as the result of possible irrigation projects, homesteads proliferated across the Snake River Plains, including the lands that today are part of the proposed EREF Project area. Research regarding John Leopard uncovered nothing to merit consideration of the component as eligible under Criterion *b*, and the lack of architectural resources precludes recommending the component eligible under Criterion *c*. The artifacts and features recorded at the site indicate that it is an important repository of data regarding the lifeways, trade patterns and networks, and socioeconomic development of the region during the early 20th century. The pin flag probed soil depth suggests the component may have a subsurface component. As a result of these factors, this component of the site is recommended eligible under Criterion *d.* In particular, features 1, 2, 7, and 8 of Locus 1 appear to be key information repositories within the site. The cistern (Feature 2) is likely the same one that was listed as an improvement in the 1919 Claimant's Testimony for the final proof required for the patent (Leopard Homestead Case File, File # BR 25252, National Archives and Records Administration, Washington, D.C.). The cistern, therefore, may hold information in the sediments at its bottom or the area immediately surrounding it that could date back to the early occupation period of the site.

8.1.5.1 Management Recommendations

No further work is necessary with regard to the prehistoric component of the site. The historic component is recommended as eligible, and an appropriate data recovery plan should be developed and implemented prior to project construction.

8.1.6 Site MW006

The prehistoric component of the site, a chert scraper, in conjunction appears to be an isolated occurrence. This component is not recommended as eligible to the NRHP under Criterion *d.*

The historic component of this site, a small historic trash scatter, is recommended as not eligible under the four National Register criteria. Because it cannot be associated with the relevant historic theme of early 20th century homesteading or any themes, the component is recommended as not eligible under Criterion *a*. It was not possible to find linkages to any prominent individuals and, therefore is not recommended eligible under Criterion *b*. The component lacks an architectural or engineering presence and is not recommended eligible under Criterion *c*. The

limited artifact assemblage within the component suggests that additional significant information regarding early 20th century homesteading in the Snake River Plains is not forthcoming; as a result, the component is not recommended eligible under Criterion *d*.

8.1.6.1 Management Recommendations

No further work.

8.1.7 Site MW007

The prehistoric component of the site consists of an isolated obsidian projectile point midsection. This component is not recommended as eligible to the NRHP under Criterion *d*.

The historic component of this site is not recommended eligible under the four National Register criteria. The small trash scatter cannot be clearly associated with the relevant historic theme of early 20th century homesteading or any others. As a result the component is not recommended eligible under Criterion *a*. It was not possible to find linkages to any prominent individuals and, therefore is not recommended eligible under Criterion *b*. The component has no architectural or engineering presence; it, therefore, is not recommended eligible under Criterion *c*. The limited historic artifact assemblage appears to be a surface manifestation indicating that intact subsurface deposits that might provide additional information on early 20th century homesteading in the Snake River Plains are not present; as a result, the component is not recommended eligible under Criterion *d*.

8.1.7.1 Management Recommendations

No further work.

8.1.8 Site MW009

This site consists of a historic trash scatter containing an isolated biface. oil can and oil filter scatter; it is recommended as not eligible under the four National Register criteria. The site is not recommended eligible under Criterion *a* because it cannot be associated with the relevant historic theme of early 20th century homesteading or any themes. The site could not be recommended eligible under Criterion b because no linkages to prominent individuals could be found. An architectural or engineering presence is not present resulting in a recommendation of not eligible under Criterion *c*. The limited artifact assemblage and apparent single-use nature of the site indicate that it is unlikely it will yield further significant information regarding the history of homesteading on the Snake River Plains; as a result, the site is not recommended eligible under Criterion *d*.

8.1.8.1 Management Recommendations

No further work.

8.1.9 Site MW011

This prehistoric site consists of two fragmentary Elko corner-notched projectile points. The site appears to be surficial in nature and unlikely to provide additional information from intact subsurface deposits. This component is not recommended as eligible to the NRHP under Criterion *d*.

8.1.9.1 Management Recommendations

No further work.

8.1.10 Site MW012

This prehistoric site consists of lithic scatter in two distinct concentrations (A and B) and an associated rock feature in Concentration A. Based on evaluative testing the site is restricted to the surface and the purpose and function of the feature is unknown. The site is unlikely to yield additional information and is recommended not eligible for inclusion in the NRHP

8.1.10.1 Management Recommendations

No further work.

8.1.11 Site MW013

This small historic trash scatter site is recommended as not eligible under the four National Register criteria. The site is not recommended eligible under Criterion *a* because it cannot be associated with the relevant historic theme of early 20th century homesteading or any themes. The site could not be recommended eligible under Criterion b because no linkages to prominent individuals could be found. An architectural or engineering presence is not present resulting in a recommendation of not eligible under Criterion *c*. The limited historic artifact assemblage appears to be a surface manifestation indicating that intact subsurface deposits that might provide additional information on early 20th century homesteading in the Snake River Plains are not present; as a result, the component is not recommended eligible under Criterion *d*.

8.1.11.1 Management Recommendations

No further work.

8.1.12 Site MW014

This sparse historic trash scatter site is recommended as not eligible under the four National Register criteria. The site is not recommended eligible under Criterion *a* because it cannot be associated with the relevant historic theme of early 20th century homesteading or any themes. The site could not be recommended eligible under Criterion b because no linkages to prominent individuals could be found. An architectural or engineering presence is not present resulting in a recommendation of not eligible under Criterion *c*. The limited historic artifact assemblage appears to be a surface manifestation indicating that intact subsurface deposits that might provide additional information on early 20th century homesteading in the Snake River Plains are not present; as a result, the component is not recommended eligible under Criterion *d*.

8.1.12.1 Management Recommendations

No further work.

8.1.13 Site MW015

This prehistoric site consists of a single prehistoric flake in association with a small rock wall. If the wall is found to be prehistoric in nature and associated with intact cultural deposits, the site

may provide significant. Similar significant rock walls associated with prehistoric artifacts have been found on the INL (Pace 2007) where they appear to be associated with specific task-oriented activities and have yielded significant information on the prehistoric subsistence strategies of the area.

This rock wall feature, however, is associated with a single isolated tertiary obsidian flake. The purpose of the site, function of the wall, and tasks conducted cannot be ascertained based on the limited data available. Subsurface testing to the east and west of the feature failed to produce additional data. The site is, therefore, recommended as not eligible for inclusion in the NRHP.More data is necessary to make an NRHP evaluation.

8.1.13.1 Management Recommendations

No further work.

9 Conclusions

Class I file searches and a Class III cultural resource survey were conducted between April 14 and June 3 and on July 23, 2008 by WCRM for AREVA in preparation of an application to the NRC to construct, operate, and decommission a gas centrifuge uranium enrichment plant located in Bonneville County, Idaho. The Class III survey was conducted to identify, document, and evaluate cultural resources in the event that the proposed action is licensed in the future becoming a Federal undertaking and requiring application of Section 106 of the National Historic Preservation Act (NHPA) as amended, its provisions, and policies. The proposed APE 1,701 ha (4,200 ac) was defined by AREVA to include an approximately 305 m (1,000 ft) buffer around the plant facility and a 76 m (250 ft) buffer around two access roads. The five groundwater well locations (approximately 1.15 acres), the ten borehole locations (within EREF), and the EREF plant and associate access roads [approximately 381 ha (941ac)] constitute the area of direct effects within the proposed APE.

Prior to the commencement of fieldwork, Class I file searches were completed at the Idaho SHPO and at the BLM's Upper Snake Field Office in Idaho Falls. Five surveys had been previously conducted within the 1.6 km (one-mi) buffer surrounding the proposed APE; none had occurred within the proposed APE or area of direct effects. Seven previously recorded resources were listed as being within the 1.6 km (one-mi) buffer surrounding the proposed APE; they include three prehistoric cave sites within the Wasden Cave Complex, one lithic scatter, and three undocumented sites.

A Class III pedestrian survey was conducted of the five groundwater locations outside the EREF, the ten borehole locations within the EREF, and the 381 ha (941 ac) proposed EREF plant facility and proposed access roads so that when the proposed action becomes a Federal undertaking, NRHP evaluations and recommendations would be available for Section 106 review. Newly recorded resources include 11 sites and 17 isolated finds; the sites consist of three prehistoric, four historic, and four multi-component, while the isolated finds consist of four prehistoric, ten historic, one multi-component, and two indeterminate. Prehistoric site types include a site with two projectile points (MW011), a lithic scatter associated with a rock feature (MW012), and a lithic associated with a small rock wall feature (MW015). Historic site types include two trash scatters (MW003 and MW009), a trash scatter and associated rock feature (MW013), and a trash scatter associated with a two-track road (MW014). Multi-component site types include a prehistoric lithic scatter associated with a historic trash scatter (MW002), a prehistoric lithic scatter associated with the John Leopard homestead (MW004), a prehistoric scraper associated with a historic trash scatter (MW006), and a prehistoric projectile point midsection associated with a historic trash scatter and two rock features of indeterminate age (MW007).

The historic component of the John Leopard Homestead (MW004) is recommended eligible for inclusion in the NRHP. Based on evaluative testing the prehistoric components of sites MW002, MW012, and MW015 are restricted to the surface, are unlikely to yield additional data, and are recommended not eligible for inclusion in the NRHP The remaining sites and isolates are also recommended not eligible.

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