Division's Historic Resources Exhibit 7

CULTURAL RESOURCE INVENTORY OF ALTON COAL DEVELOPMENT'S ADDITIONAL SURVEY OF 440 ACRES IN THE ALTON AMPHITHEATER, KANE COUNTY, UTAH

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CULTURAL RESOURCE INVENTORY OF ALTON COAL DEVELOPMENT'S ADDITIONAL SURVEY OF 440 ACRES IN THE ALTON AMPHITHEATER, KANE COUNTY, UTAH

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ABSTRACT

A cultural resource inventory was conducted by Montgomery Archaeological Consultants, Inc. (MOAC) in June 2008 for additional lands associated with Alton Coal Development's proposed development of the Alton Coal Tract, which is located on public lands administered by the Bureau of Land Management (BLM), Kanab Field Office, and private lands. SWCA Environmental Consultants, under the direction of the BLM, is currently preparing an Environmental Impact Statement (EIS) for a federal coal lease application under the Lease by Application (LBA) process set forth at 43 CFR 3425. The inventory was implemented at the request of Mr. Chris McCourt, Alton Coal Development, Cedar City, Utah. A total of 440 acres was inventoried for cultural resources on private lands.

The inventory resulted in the location of three previously recorded sites (42Ka2051, 42Ka6077, and 42Ka6086) and the documentation of 29 new archaeological sites, 42Ka6477 to 42Ka6505. Twenty-three sites are recommended as eligible to the NRHP under Criterion D, as these site have the potential for buried cultural materials and are likely to provide further information regarding the prehistory of the area. Twelve of the eligible sites (42Ka2051, 42Ka6477, 42Ka6479, 42Ka6481, 42Ka6482, 42Ka6488, 42Ka6490, 42Ka6491, 42Ka6496, 42Ka6498, 42Ka6501, and 42Ka6502) are prehistoric lithic scatters of unknown aboriginal cultural affiliation. Eight eligible sites (42Ka6480, 42Ka6485, 42Ka6486, 42Ka6492, 42Ka6493, 42Ka6497, 42Ka6500, and 42Ka6505) are prehistoric lithic and artifact scatters whose cultural and temporal affiliations include the Archaic, Late Archaic, Anasazi, Fremont, and Protohistoric. Site 42Ka6495 is a prehistoric rockshelter and artifact scatter, for which diagnostic artifacts indicate an affiliation with the Virgin Anasazi Pueblo II period. Site 42Ka6494 is a multi-component site consisting of a prehistoric artifact scatter (Middle Archaic, Anasazi, and Protohistoric affiliations) and a historic trash scatter. Site 42Ka6499 is a multi-component site consisting of a Middle Archaic lithic scatter and historic trash dump. The prehistoric components of sites 42Ka6494 and 42Ka6499 are recommended as eligible under Criterion D and the historic components are recommended as not eligible to the NRHP. Nine sites (42Ka6077, 42Ka6086, 42Ka6478, 42Ka6483, 42Ka6484, 42Ka6487, 42Ka6489, 4242Ka6503, and 42Ka6504) are recommended as not eligible to the NRHP. These nine sites are recommended as not eligible to the NRHP as they are not associated with significant historic events or persons (Criteria A and B); nor do these sites embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master (Criterion C), and these sites are unlikely to provide further information important to the prehistory and history of the area (Criterion D).

The inventory of Alton Coal Development's additional 440 acres in the Alton Amphitheater, Kanab Creek, and Sink Valley localities resulted in the location of three previously recorded sites (42Ka2051, 42Ka6077, and 42Ka6086) and the documentation of 29 new archaeological sites, 42Ka6477 to 42Ka6505. Twenty-three sites (42Ka2051, 42Ka6477, 42Ka6479–6482, 42Ka6485, 42Ka6486, 42Ka6488, 42Ka6490–42Ka6502, and 42Ka6505) are recommended as eligible to the NRHP under Criterion D, as these sites have the potential for buried cultural materials and are likely to provide further information regarding the prehistory of the area. The remaining nine sites are recommended as not eligible to the NRHP. It is recommended that all eligible sites be avoided by the undertaking. Based on adherence to these recommendations, a determination of "no historic properties affected" is recommended for the undertaking pursuant to Section 106, 36 CFR 800.

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INTRODUCTION

A cultural resource inventory was conducted by Montgomery Archaeological Consultants, Inc. (MOAC) in June 2008 for additional lands associated with Alton Coal Development's proposed development of the Alton Coal Tract, which is located on public lands administered by the Bureau of Land Management (BLM), Kanab Field Office, and private lands. SWCA Environmental Consultants, under the direction of the BLM, is currently preparing an Environmental Impact Statement (EIS) for a federal coal lease application under the Lease by Application (LBA) process set forth at 43 CFR 3425. The inventory was implemented at the request of Mr. Chris McCourt, Alton Coal Development, Cedar City, Utah. A total of 440 acres was inventoried for cultural resources on private lands.

The objective of the inventory was to locate, document, and evaluate any cultural resources within the project area in order to attain compliance with a number of federal and state mandates, including the National Historic Preservation Act of 1966 (as amended), the National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1992).

The fieldwork was performed between June 16 to 20, 2008 by Patricia Stavish (Field Supervisor), Laura Hronec, Vanessa Mitas, Rachel Roden, Todd Seacat, Keith Solmo, Adam Thomas, and Chris Webster. The inventory was conducted under the auspices of U.S.D.I. (FLPMA) Permit No. 08-UT-60122 and State of Utah Antiquities Project (Survey) No.U-08-MQ-0539p.

A record search for previous projects and cultural resources was conducted at the Utah State Historic Preservation Office, Salt Lake City on March 25, 2005 by Ms. Marty Thomas. Intensive cultural resource investigations have taken place in the area since the 1980s; however, numerous archaeological sites have been recorded since the 1970s. The majority of the inventories were conducted for proposed mining activities. Figure 1 depicts the most recent cultural resource inventories associated with Alton Coal Developments' proposed private and federal actions in the Alton Amphitheater and Sink Valley Localities.

In 1974, the Museum of Northern Arizona (MNA) performed clearance of 48 drilling locations and access routes on the Skutumpah Terrace in Kane County; 19 drilling locations and access routes in the Alton Amphitheater in Kane County; and four meteorological tower sites in Kane County (Davidson et al. 1974). Thirty-six archaeological sites were documented during the investigations

In 1979-1980, MNA conducted inventories for Utah International, Inc.'s coal mining lease area situated on the Skutumpah Terrace and Alton Amphitheater (Halbirt and Gualtieri 1981). The four surveyed parcels were designated Alton East and Alton West, the coal preparation plant site, and major road routes. A total of 107 archaeological sites, most of which were of prehistoric affiliations, were documented dating from the Archaic to Late Prehistoric.

In 1980, the Bureau of Land Management (BLM) Kanab Field Office performed a Class III inventory of Engineers International, Inc. seismic testing areas (McFadden 1980). No cultural resources were located in the project area. The BLM performed a cultural resource inventory in 1981 of a tract allotment for Heaton Brothers (McFadden 1981). No archaeological sites were documented during the project. The Cone allotment chaining area was surveyed by the BLM in 1982, resulting in a finding of no cultural resources (McFadden 1982).

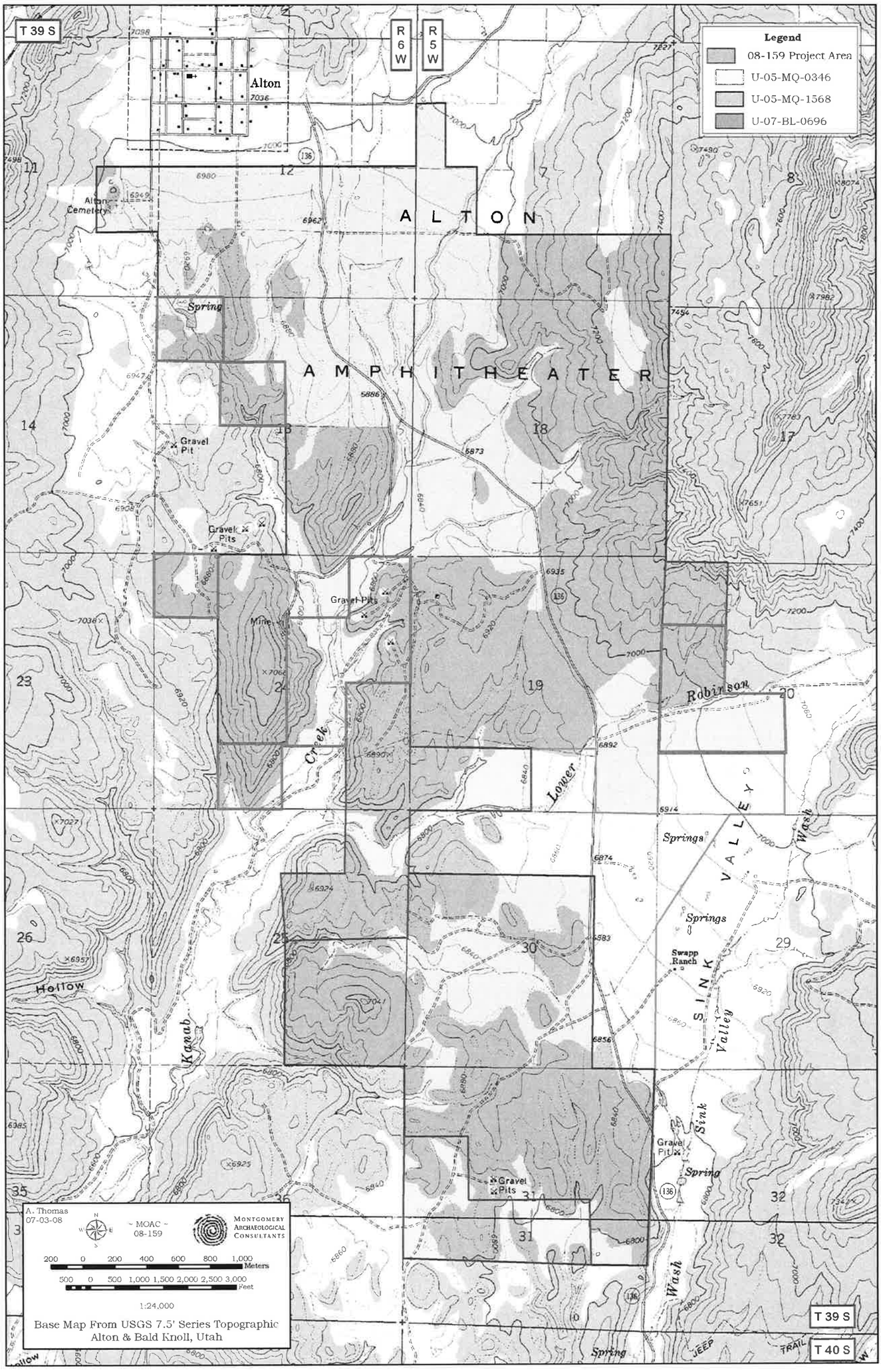

Figure 1. Previous Cultural Resource Inventories Associated with Alton Coal Development's Proposed Actions within the Alton Amphitheater and Sink Valley Localities, Kane County, Utah.

In 1984, the BLM surveyed the Syler Knoll chaining area for cultural resources (McFadden 1984). Previously recorded site 42Ka2045, a large lithic scatter containing diagnostic artifacts, was located within the project area. Because 42Ka2045 was previously evaluated as not significant (for eligibility to the NRHP), clearance was recommended for the chaining activities.

In 1986, MNA performed cultural resource inventories of 43 drill locations and access roads within the Alton Coal Field for Utah International, Inc. (Weaver 1986). Two new archaeological sites, located outside of the current project area, were documented. Also in 1986, MNA performed survey and monitoring of nine test pit locations and access routes for Utah International, Inc. (Weaver and Hurley 1986). No new cultural resources were documented.

In 1986, MNA returned to the Alton Coal Leasehold to survey another 12,500 acres, resulting in the documentation of 103 additional sites (Keller 1987). The prehistoric sites are described as typically surface lithic scatters emphasizing biface thinning technology and projectile point use and also to a lesser extent grinding slabs, manos, and large unifacial chopping tools. Keller (1987) speculates that there is a considerable degree of similarity between the exploitation patterns of cultural periods, with a concentration on deer hunting and pinyon seed gathering.

In 1987, the Museum of Northern Arizona (MNA) surveyed 22 auger borings and 27 backhoe test pits for Utah International, Inc. (Weaver and Hurley 1987). In 1993 and 1994, Nielson Consulting Group and Timpanogos Research Associates performed cultural resource inventories and site evaluations of several abandoned mines in central and southern Utah (Hughes et al. 1994). None of the mines are located in the current project area.

In June and July 2005, MOAC conducted a cultural and fossil resource inventory of Alton Coal Development's project area in the Alton Amphitheater, south of the town of Alton, Utah (Stavish 2008). The inventory resulted in the documentation of 31 previously recorded archaeological sites and 60 new archaeological sites. The previously recorded archaeological sites include one historic site (Alton Cemetery); three multi-component prehistoric/historic sites; and 27 prehistoric sites that consist of temporary camps, artifact scatters, and lithic scatters. The new archaeological sites include two historic sites (a corral and a bridge); two multi-component prehistoric/historic sites; and 56 prehistoric sites that consist of temporary camps, artifact scatters, and lithic scatters. The inventory also resulted in the documentation of 30 new paleontological localities and three previously documented paleontological localities (Stavish 2008). In August 2005, MOAC completed a survey of six coal seam drill sites for Alton Coal Development; no cultural resources were found (Thornton and Montgomery 2005).

In 2007, the Bureau of Land Management, Kanab Field Office, conducted a cultural resource inventory of additional lands associated with the Alton Coal Area of Potential Effect (APE) (Zweifel 2007). The inventory resulted in the documentation of 14 archaeological sites (42Ka3170–42Ka3172, 42Ka3174, 42Ka3175, 42Ka6351–42Ka6354, and 42Ka6357–42Ka6361).

DESCRIPTION OF THE PROJECT AREA

The project area is situated in the Alton Amphitheater, Kanab Creek, and Sink Valley localities, Kane County, Utah. This area lies a few miles east of US 89 just south of the town of Alton, Kane County, Utah. The legal description for the current inventory is Township 39 South, Range 5 West, Section 20; and Township 39 South, Range 6 West, Sections 13 and 24 (Figure 1).

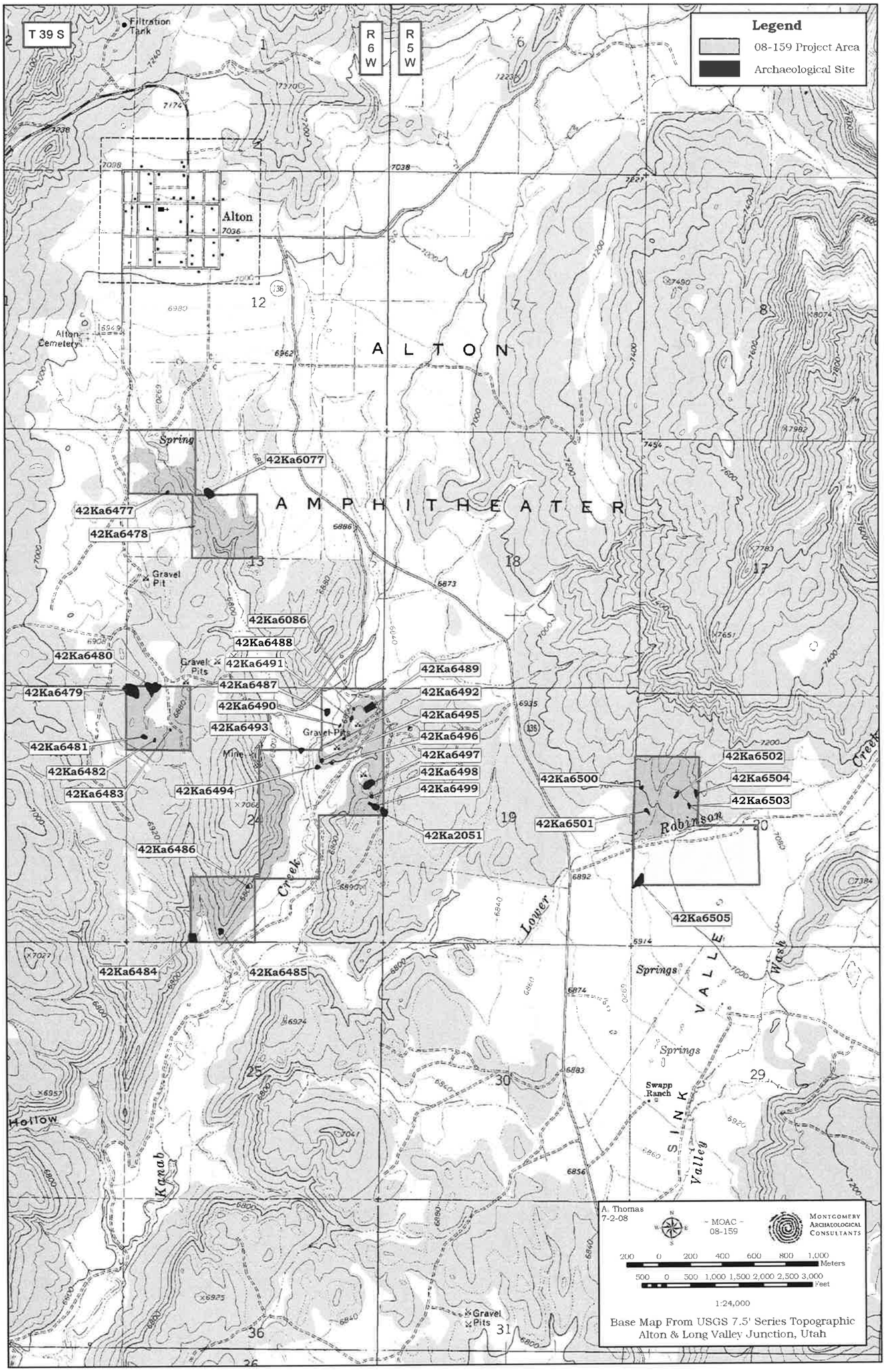

Figure 1. Inventory Area of Alton Coal Development's Additional 440 Acres in Kane County, Utah; Showing Cultural Resources.

Environmental Setting

The study area lies within the Grand Staircase Section physiographic subdivision of the Colorado Plateau (Stokes 1986). This area is characterized by a series of cliffs and terraces that rise from the Grand Canyon in Arizona to the summit of the High Plateaus in Utah. This section is bounded on the east by the East Kaibab Monocline, on the west by the Hurricane Fault, on the north by the edges of the various high plateaus, and on the south by the Grand Canyon of Arizona. Harder rock layers create cliffs and accompanying benches and tablelands, whereas the softer rock units have eroded into slopes and badlands. Specifically, the project area is located along the western edge of the Paunsaugunt Plateau. The Alton Coal Field is comprised of relatively horizontal bedrock units of Mesozoic age (see Stavish 2007: Appendix C). Within portions of the project area, bedrock units are exposed as low hills and along the incised drainage of Kanab Creek The exposed bedrock units include, from the oldest to youngest, the Winsor member of the Carmel formation (Jurassic), the Dakota formation (Cretaceous), and the Tropic shale (Cretaceous). Table 1, in Appendix C, summarizes the possible effects of surficial and bedrock units of the distribution of cultural resources in the area. The two most prominent geologic units are alluvium and Tropic Shale. The horizontal deposition of the geologic formations coupled with the impact of water and wind erosion has reduced much of the area to flat ridges and benches which are dissected by long alluvial drainages and tributaries. Drainages often widen to form meadows, such as Sink Valley and the Alton Amphitheater. Alluvium, derived from weathered bedrock, is extensive throughout the project area along the broad, open areas of cultivation and valley floor. Characteristics of the alluvium include the location of low, relatively level areas of the project area, including cultivated fields, incised arroyos, and drainages. According to Lamm (Stavish 2007: Appendix B), total depth of the alluvium is not known and likely varies across the project area. Soils in the drainages have some agricultural potential as a result of their sand, gravel and silt composition and the presence of limestone and arkosic minerals (Gregory 1951:12).

The possible natural impacts to cultural resources distributed on the alluvium include localized slope failure/collapse of arroyo walls, piping of finer grained sediments, entrenching of drainages, and the potential for buried cultural resources (see Stavish 2007, Appendix C). Cultural resources distributed across the Tropic shale formation are potentially impacted by localized slope failure, surficial creep on steeper slopes, slope wash on steeper slopes, and erosion of weathered bedrock slopes on steep to gentle slopes. Furthermore, the vertical erosion of sediments formed in situ on exposures of the Tropic shale may also distort the integrity of buried cultural resources (Ibid.).

Elevation in the project area ranges from 6800 ft (2079 m) to 7200 ft (2202 m). Climatic patterns are based on a 59 year record (1915 to 1974) from the Alton, Utah, weather station (Halbirt and Gualtieri 1981:8). The average monthly temperatures are generally mild and follow a modal distribution with a low of 26°F during January and a high of 65°F during July. The number of consecutive frost-free days average between 84 to 104 days (Gregory and Moore 1931). This period is shorter than the necessary 100 to 120 frost-free days required to mature modern hybrid corn, and more time is needed under dry conditions (Crosswhite 1981). The vegetation over most of the study area is a pinyon-juniper and sagebrush community. Pinyon-juniper with oakbrush associations occur on the tops and slopes of ridges, while a sagebrush community exists within alluvial flood plains, draws, and meadows. Other plant species which may have been utilized by ethnographic and prehistoric groups in the area include: barberry, canyon grape, cattail, currant, goosefoot, onion, prickly pear cactus, sedge, squawbush, sunflower, and yucca (Ibid:10). Today less than two percent of the area is under cultivation and products consist primarily of alfalfa,

potatoes, and cold weather vegetables. Major drainages in the project area are Kanab Creek, Sink Hole Valley Wash, and Lower Robinson Creek. Kanab Creek flows from north to south through the project area forming an incised canyon, and eventually empties into the Colorado River byway of the Virgin River. In addition, water resources are manifested as geologic aquifers or springs. Most of the springs are perennial and are derived from the Tropic Shale formation. Modern impacts of the landscape include ranching, agriculture, coal mining, and roads.

Cultural-Historical Overview

Paleoindian

Human occupation in the region represents the Paleoindian, Archaic, Formative, Protohistoric, and Historic cultural stages. The first Native American occupation of the general study area probably occurred during the Paleoindian stage at the late glacial Pleistocene-Holocene boundary (ca. 11,500 B.P.–9000 B.P.). Early Paleoindian artifact assemblages are typified by large, lanceolate projectile points, spurred end scrapers, gravers and borers, and crescents (Frison 1978:78), indicating the exploitation of megafaunal and floral resources. On the basis of projectile point typologies and subsistence strategies, the early portion of the Paleoindian stage is commonly divided into two cultural complexes referred to as the Clovis (ca. 11,500–11,000 B.P.), and the Folsom (ca. 11,000–10,000 B.P.). Aikens and Madsen (1986) postulate that Paleoindian people migrated into the eastern portion of the Great Basin following the recession of Lake Bonneville (10,500 B.P.). Several surface fluted projectile points have been reported from Garfield County (Copeland and Fike 1988) and northeastern Arizona (Geib 1995). Late Paleoindian or Plano projectile points have been found on the Kaiparowits Plateau and classified as large stemmed or concave base points (Geib et al. 2001:191-192).

Archaic Stage

The Archaic stage (7800–500 B.C.) is generally viewed as a hunting-gathering lifeway that is represented by subsistence practices more labor-intensive than those of Paleoindians with a greater number of smaller animal and plant species being intensively exploited. Several cultural sequences for the Archaic stage are proposed on the basis of regional differences. Jennings (1978) provides a concept of the western Archaic, or Desert Culture, based on diverse resource exploitation, diagnostic artifacts including cordage and basketry, and artifactual variability in various regions such as the California-Nevada axis and Utah-Oregon axis. Matson (1991) presents a four-period sequence model incorporating data from the Greater Southwest: Early (7800–4000 B.C.), Middle (4000–2000 B.C.), Late (2000–1000 B.C.), and Terminal (1000 B.C. to roughly A.D. 700). Immediately east of the project area, Geib et at (2001) outlines the following four period sequence for the Western Kaiparowits Plateau: Early Archaic (9000 B.P. to 6000 B.P), Middle Archaic (6000 B.P. to 4000 B.P.), Late Archaic (4000 B.P. to 2000 B.P. or the adaptation to agriculture), and the Terminal Archaic (2000 B.P. to A.D. 500).

South of the study area, the Early Archaic period is labeled the Desha Complex known for its crudely made, shallow, side-notched lanceolate points. In the Glen Canyon region excavations from Sand Dune and Dust Devil Cave provide a radiocarbon date of 5050 to 6050 B.C. (Lindsay et al. 1968). About a dozen projectile points were recovered from the lower layer in Sand Dune Cave including Pinto Series, Jay, and varieties of side-notched points (later classified as Sand Dune Side-notched) (Matson 1991:147). Faunal remains recovered from the Desha Complex

include those of mountain sheep, cottontail, pack rat, and lesser numbers of jackrabbit, gopher, squirrels, skunk, and bison (one bone). At Dust Devil Cave, the earliest Archaic component (Stratum IV) provided a date from a yucca-lined pit of ca. 8793 B.C. along with an abundance of prickly pear cactus (*Opuntia*) extracted from human feces (Ambler 1996:42). Significant materials recovered from this cave included 25 Archaic sandals, classified into three basic types; open-twined, fine warp-faced, and coarse warp-faced (Ibid 44). On the northern Colorado Plateau the earliest Archaic component is dated at Cowboy Cave (42Wn420) between 7430 and 7100 B.C. although no artifacts were found in this stratum (Schroedl and Coulam 1994:11). The upper Early Archaic component (Stratum III 5250–4350 B.C.); however, contained 11 projectile points (Pinto, Northern Side-notched, and Elko Corner-notched), faunal remains (cottontails, jackrabbits, porcupine, and *Canis* sp.), and floral remains (sunflower, sand dropseed, chenopods, cactus, juniper and bugseed) (Jennings 1980). The most significant features from Stratum III were a number of depressions referred to as "scooped out troughs" by Jennings (1975:9), more recently redefined by Schroedl and Coulam (1994:6-7) as pitstructures which were repeatedly cleaned out and reoccupied during the Early Archaic. In the Alton West Coal leasehold previous investigations have documented several Early Archaic projectile points types (Pinto Series, Humboldt, and Northern Side-notched) from sites which include later Formative and Late Prehistoric temporal components (e.g. 42Ka2045 and 42Ka2056) (Halbirt and Gualtieri 1981).

During the Middle Archaic period (4000–2000 B.C.) there was a decrease in the occupation of the Colorado Plateau, presumably caused by the Altithermal climate, which may have been a two drought event (Matson 1991:165–166). Many of the previously mentioned sites (Dust Devil Cave and Cowboy Cave) exhibit a reduced intensity of occupation during the Middle Archaic period. Recent radiocarbon data from the Glen Canyon region are filling the Middle Archaic gap (e.g. 1,000 years) as proposed by Berry and Berry (1986) for the Colorado Plateau indicating that the hunter-gatherers of the area may have not completely abandoned the area 6,000 years ago (Geib 1996:32). Middle Archaic settlement patterns most likely reflect the response to a probable protracted drought by populations shifting residential camps to water-rich lowlands and especially higher elevation settings (above 8,000 ft). Common projectile points at Middle Archaic sites are Sudden Side-notched, San Rafael Side-notched, Hawken Side-notched and Elko Series. Previous investigations in the Alton West Coal leasehold have identified such point types as Sudden Side-notched from sites which include other Archaic periods and later temporal components which appear to represent residential camps and processing camps (Halbirt and Gualtieri 1981).

The Late Archaic period began around 4,000 years ago and corresponds to a noticeable increase in radiocarbon dates in the region and is temporally correlated with an increase of effective moisture what is termed as the sub-boreal interval (Berry and Berry 1986). This period is marked by a heavy reoccupation of Cowboy Cave starting at about 1750 B.C. and is characterized by the inhabitants engaging in broad-scale hunting and gathering with an increased emphasis on mountain sheep and chenopods/amaranths (Matson 1991:171). Gypsum projectile points comprised approximately 30 percent of the total identifiable collection from Cowboy and adjacent Walters Cave (Jennings 1980:36). These stemmed points are among the most common type of point found in southeastern Utah and appeared on the northern Colorado Plateau sometime after 2550 B.C. (Holmer 1986:105). Split-twig figurines are another important diagnostic of the Late Archaic period, best known from Cowboy Cave, but occur over a broad territory centered on the Colorado River and its tributaries. Farther south in the Glen Canyon region, Late Archaic occupations are less represented, although a few Gypsum points were recovered from Dust Devil Cave (Geib and Ambler 1991). On the Kaiparowits Plateau, Late Archaic sites are represented primarily by residential camps situated in the higher elevations with access to ample water, fuel

wood, large and small game, and plant resource diversity whereas the limited activity camps and reduction loci are prevalent in the lower elevations that contained a greater abundance of economic grasses (Geib et al. 2001:367). Investigations at the Arroyo Site (42Ka3976) situated in the Grand Staircase-Escalante National Monument revealed a potential pitstructure exposed in a trench below a Formative horizon, dated to circa 1850 B.C., may attest to a semi-permanent occupation of the floodplain environment (McFadden 2000:15). In the Alton West Coal leasehold several Late Archaic Gypsum projectile were recorded at open sites with other older and more recent prehistoric temporal components (42Ka2047 and 42Ka2059) (Halbirt and Gualtieri 1981).

The Terminal Archaic period (1000 B.C. to roughly A.D. 700) is marked on the northern Colorado Plateau by the presence of arrow points and shafts along with the introduction of corn. The Archaic-Formative transition at Cowboy Cave is found in two separate episodes of occupation beginning about A.D. 100 during a period of high effective moisture (Schroedl and Coulam 1994:23). This relatively intense occupation (Stratum Vb) appeared to have represented a late summer/early fall seed processing locale based on the coprolite evidence (Hogan 1980). A corn cache as well as corn kernels were found in this horizon revealing that the pre-Formative occupants were growing this domesticate, although the extent of agricultural dependency is unknown. It is well established that corn dates to at least 1200 B.C. across much of the southern portion of the Colorado Plateau with later dates derived from sites farther north (Geib 1996:54). Even if the populations in the study area were not actively involved with farming, they were likely in contact with farmers or were a least experiencing changes resulting from the presence of nearby farmers. At Hog Canyon Dune (42Ka2574), located at the junction of Hog and Kanab creeks about two miles north of Kanab, charred corn kernels were recovered from a pitstructure in association with a hearth and a burial yielding two dates: 910–390 B.C. and A.D. 60–640 (Janetski 1993:229). The dating of bow and arrow introduction to the eastern Great Basin and Utah has been an issue of continuing debate. Past evidence from the lithic technologies between the terminal Archaic and Basketmaker II populations indicates that by ca. A.D. 100 the bow and arrow was employed by the ancestral Fremont, while the ancestral Anasazi continued to employ the atlatl. In the northern portion of the region, at Cowboy Cave, arrow points come from preceramic Stratum V deposited about A.D. 100–600 (Schroedl and Coulam 1994). To the south, the Sunny Beaches site (42Ka2751) in the Glen Canyon Recreational Area is somewhat of an anomaly. A number of Rose Spring Corner-notched points, which are accepted markers of bow and arrow technology dated earlier (e.g. around A.D. 100) than the established chronology for Basketmaker II aceramic occupations. In the Alton Coal Leasehold previous inventories have documented Rose Spring Corner-notched arrow points from several sites. At site 42Ka2056 both Early Archaic Pinto Series points and Rose Spring Corner-notched points were found, but in two separate lithic assemblage loci (Halbirt and Gualtieri 1981:85).

Formative Stage

The Formative stage began about A.D. 500, when ceramics were generally used on the Colorado Plateau, and continued until A.D. 1300, with the Anasazi abandonment of Four Corners region. Within the region, this stage encompasses two different cultures: the Anasazi (Puebloan) and the Fremont. The project area is within the occupation zone of the Anasazi, which is divided into two recognizable branches the Virgin Anasazi and the Kayenta Anasazi. The Virgin Anasazi primarily occupied the Arizona Strip, southwestern Utah, and southernmost Nevada. Whereas, the Kayenta Anasazi occupied a large portion of northern Arizona and far southeastern Utah. The Fremont are considered a separate entity, found primarily at sites in Utah north of the Anasazi region. Artifactual evidence in the study area indicates primarily a Virgin Anasazi cultural tradition, although both Kayenta Anasazi and Fremont ceramic types have been identified.

The Virgin Anasazi occupied the area from Basketmaker II through early Pueblo III times, and apparently adapted horticultural practices to a variety of environmental conditions (Thompson and Thompson 1978; Walling and Thompson 1988). Investigations in the Grand Staircase area east of Kanab Creek indicates it was occupied continuously from at least Basketmaker II times (ca. A.D. 300) through late Pueblo II (ca. A.D. 1200). Virgin Anasazi residential units are characterized by an architectural sequence from pithouse residences with separate cist storage facilities, through intermediate stages of room block development, and eventually to substantial surface masonry pueblos incorporating both storage and habitation functions (Talbot 1990). According to McFadden (1996:24) the quantity of storage space per residential unit did not vary significantly over time indicative of a continuity of subsistence practices. In the Grand Staircase region Virgin Anasazi sites located immediately adjacent to cultivable fields were fully residential with large storage capacities (Ibid 7). Furthermore, residential mobility may have been part of an adaptive strategy that allowed the Virgin Anasazi to engage in agriculture in an environment in which a variety of short-term environmental fluctuations needed to be accommodated. In contrast the Kolob/Skutumpah Terrace area where the present study area resides (above 6,400 ft) is characterized by a short growing season (less than 120 days at Alton), hence prehistoric agricultural potential was risky. Several studies in this area (Christensen et al. 1983; Halbirt and Gualtieri 1981; Keller 1987:87) indicated that the vast majority of the prehistoric sites are limited activity sites or camps related to hunting and gathering behavior. For the entire Alton Coal leasehold, Keller (Ibid.:87) estimates that 23 percent of the total sites date from Basketmaker III to Pueblo II. However, surveys in the Alton Amphitheater conducted by MOAC (Stavish 2007, 2008) suggest a smaller percentage, only seven percent, of Basketmaker III to Pueblo II temporal components. Data compiled by McFadden (1996:17) from this area, as well as the Grand Staircase and Upper Virgin River, suggests that Virgin Anasazi residential sites are predominantly associated with agricultural potential, while hunting/gathering sites are more common in the elevated zone where agriculture is not feasible. Ceramic types identified in the Alton Coal leasehold are dominated by mainly Virgin Anasazi North Creek Gray, North Creek Corrugated, Shinarump Brown, and St George Black-on-Gray. To a lesser extent Kayenta Anasazi (Tusayan Black-on-Gray) and Fremont Great Salt Lake Gray have been reported in the area adjacent to Kanab Creek (Halbirt and Gualtieri 1981:35).

In the Grand Staircase physiographic section the adaptive strategy of the Virgin Anasazi is summarized by McFadden (1996:30) as an occupation of multiple "homesteads" located in a variety of different agricultural niches, each with different characteristics but all suitable for agriculture. Furthermore, shifts in residence would occur periodically in response to short term climatic fluctuations, but also as a result of local environmental deterioration. A comparison of site types from the lower elevation study areas and the Kolob and Skutumpah Terrace area suggests that given frequent residential moves, the farmsteads themselves could have served as base camp/processing stations with this upland functioning as a hunting-gathering component.

In Washington and Kane Counties, archaeological investigations have revealed habitation sites, storage sites, possible field houses, and nonstructural Virgin Anasazi sites. In the Kanab area, structural sites are situated along Kanab Creek, and its perennial tributary Johnson Creek, to access water for agricultural land. In some places and times, deep soils made possible true dry-farming; in other cases, sites are situated in areas where natural drainage concentrates runoff. East of Kanab, where the population peaks in Late PII times, sites are increasing, situated where they can take advantage of runoff concentrated by washes and streams (Lyneis 1995:225). Other site types found in the Upper Virgin Anasazi area consist of storage features but no dwellings, which may represent part of the flexible nature of Virgin Anasazi settlement patterns (Lyneis

1995:218). In addition, nonstructural sites with Anasazi ceramics are found throughout the area in nonagricultural locations. These may include rockshelters, sometimes associated with large roasting pits, as well as featureless sherd and lithic scatters.

Protohistoric and Southern Paiute

Protohistoric occupation of the project area is attributed to the Southern Paiute, members of the Numic population. Several models address the migration of Numic populations to the Great Basin. Some theorize that Numic expansion from the southwestern Great Basin eastward occurred approximately 1,000 years ago (Lamb 1958). Other models view the expansion taking place several thousand years ago (Taylor 1961; Swanson 1962). On the basis of the co-occurrence of Southern Paiute and Virgin Anasazi ceramics in stratigraphic context it is theorized that entry into the southwestern Utah area by Numic speakers occurred during the late occupational period of the Virgin Anasazi (Westfall et al. 1987). Fowler (1994) compares the material culture of the Southern Paiute to that of the Virgin Anasazi, noting similarities such as clay figurine styles, certain features of coiled basketry, and one type of sandal, and concludes that these similarities suggest interaction between the groups. Besides pottery or perishable materials, the other common diagnostic is the Desert Side-notched projectile point. Although Desert Side-notched points should be considered horizon marker rather than ethnic markers, Southern Paiute use of the study area is well documented (Kelly 1964), and appeared to have constituted the primary post–A.D. 1300 indigenous occupation. Cottonwood Triangular points may not be useful diagnostics of Numic occupations if they are unfinished items broken in production; such tools might have been intended as Desert Side-notched points or Bull Creek points or some other arrow point type (Geib et al. 2001:392). Southern Paiute Brown Ware found in southwest Utah is characterized as conical-bottomed vessels exhibiting undulating surfaces on their thick walls. Decoration is limited to some surface incising, corrugation or fingernail impressions, and/or clapboarding of coils; the former often over the entire surface of the vessel (Baldwin 1950). Temper tends to be visible and coarse and fall into two types for the area: 1) abundant very fine rounded to subangular particles that are generally clear and appear to be frosted suggesting that they originate from eolian and alluvial deposits; 2) large angular to subangular particles most of which are white and very fine grained as if derived from a crushed quartzite or other aphanitic particles (Westfall et al. 1987:70).

The Southern Paiute were hunter-gatherers and part-time horticulturists, with domesticates playing a minor role in their subsistence strategy (Fowler and Fowler 1971, 1981; Steward 1938). This cultural tradition is characterized by the use of rockshelters, and open camp sites containing wickiup dwellings, rock-filled roasting pits, fire hearths, conical-bottomed brownware ceramics, some decorated with fingernail incisions, rabbit fur blankets, basketry hats and containers, digging sticks, milling stones, and stone tools (Euler 1966; Westfall et al. 1987). Social organization revolved around bands of multiple family units, cooperating and joining forces when necessary to ensure the survival of the community (Steward 1938). At least 16 major bands, or 35 smaller groups, have been identified in Utah.

The area adjacent to the present town of Alton was the summer home of one of the seven socio-economic groups that comprised the Kaibab Band of the Southern Paiute (Kelly 1964). The organization of these groups was largely economic in character, however, some attention was allotted to social residence. It appears that the group inhabiting the Alton area was a small patrilocal aggregate. While evidence exists that other groups visited the area occasionally to gather seeds and berries, there seems to have been minimal economic cooperation between groups (Ibid.). The Alton group was controlled by a chief who directed the seasonal movements

of camps, and who was in most instances in charge of deer hunting (Ibid 27). According to Kelly (Ibid 6), campsite location was determined by the presence of springs which fell under the jurisdiction of the local economic group. Subsistence activities varied according to seasonality, with the occupants of a spring "....tending to share the same seasonal cycle" (Ibid 8). During the winter, the group resided in Kanab Canyon were semi-permanent camps in the sense that the occupants returned to them following hunting and foraging trips. Resources utilized during this period included seeds and rabbits, the latter hunted in large scale drives consisting of perhaps 25 individuals from different households (Ibid 24). Periodically, deer and pinyon nut forays were also conducted along the top of the Vermillion cliffs. When snows receded in the spring, the group moved north to the Alton area and subsisted until summer on stores of food previously cached in caves (Ibid 16). The group remained in Alton for most of the summer collecting a wide variety of seeds and berries as well as hunting deer, marmot, and rabbit (Halbirt and Gualtieri 1981:15). At some point during this period the group returned briefly to the Kanab area to gather seeds and cached them for the succeeding winter occupation (Kelly 1964:16). Deer hunting and the gathering of "plateau" seeds was emphasized during the late summer to fall months. It is during this period that deer begin to congregate in small migratory groups.

Navajos occupied areas of the Skutumpah Terrace during the post World War II period (about 1945 to 1970) while cutting and installing cedar fences for local ranchers (Halbirt and Gualtieri 1981:56). Physical remains from the Navajo occupation primarily east of the project area fall into one of the four following categories: 1) forked-stick hogans composed of interlocking poles and a corbelled roof entrance; 2) palisade hogan composed of a corbelled roof supported by four corner posts and a series of stringers which lean against the roof; 3) brush hogan roughly square in plan view and partially supported by two living pinyon trees which provided the superstructure firm support; 4) sweat lodge consisting of three interlocking poles with stringers leaning against the frame and packed with mud daub (Bradley 1999:56).

Historic - European

The first documented entry of European Americans into Kane County was the expedition of Fathers Francisco Atanasio Dominguez and Silvestre Velez de Escalante in the autumn of 1776 to establish an overland route between settlements in Santa Fe and Los Angeles. Because of a snowstorm near Milford, the expedition halted the attempt to reach California, and instead followed a route to the southeast to return to Santa Fe. Along this route they named Sulphur Creek (later renamed the Virgin River), Rio de Pilar (later known as Ash Creek), and Hot Sulphur Springs (Alder and Brooks 1996; Bradley 1999). Another early explorer, Jedediah Smith, followed parts of the Dominguez and Escalante Old Spanish Trail, of which various portions were later referred to as the California Trail, through Washington County in 1826 and 1827. His route created a new pathway for pioneers traveling from the East to California, and was widened to an actual wagon road in 1849. Other explorers to follow in these footsteps include John C. Fremont in 1844 and Mormon pioneer leaders from Salt Lake City in 1847 (Alder and Brooks 1996).

Important to the Mormon colonization effort was the organization of an Indian mission in Harmony in early 1854. Jacob Hamblin, a Mormon explorer and settler of Kane County, led the effort to establish harmonious relationships with key Native American leaders. His knowledge of the area also facilitated government exploration and mapping projects, including a Colorado River voyage with John Wesley Powell in 1871 that documented the landscape of Glen Canyon and the present-day city of Kanab. While Kanab is the principal settlement in Kane County, small towns in Long Valley are important centers of agriculture and stock-raising. In 1862, John and William

Berry first led a team of ranchers into the Long Valley area in search of rangeland for their cattle. The area was called Long Valley due literally to its length (a long narrow valley situated between high mountain walls), fertile land, and proximity to water. The first settlement in the valley was probably that of Berryville (later renamed Glendale), established by the Berry brothers in 1864. Berryville was abandoned in June 1866 due to conflicts between the Mormon settlers and Pauite and Navajo tribes in the area. This pattern of settlement was common to many of the small towns in Long Valley throughout the late 1800s. On January 16, 1864, the Utah Territorial Legislature approved an act that officially created Kane County. Its boundaries were defined on the west to include the upper Virgin River area, including Virgin City, the principal town in the new county at the time (Bradley 1999:56-59). Kane County remained isolated because of its challenging landscape, its relatively small population, and its lack of connection to railroad lines.

The town of Alton is a small ranching community located near the head of Long Valley. It originally developed from Upper Kanab, an earlier settlement in the valley of upper Kanab Creek that was abandoned during the Black Hawk War. Upper Kanab was first settled by Lorenzo Wesley Roundy when he brought his family to Upper Kanab Creek in 1865. Historically, this area had tall grass, good fodder for their animals, streams of clear water, abundant wildlife in the nearby mountains, berries and other wild fruit, and timber for homes and fences (Bradley 1999:65). The first summer after arriving at the settlement, which was initially called Roundy's Station, the immigrants built two log cabins. In 1865, the Mormon Church ordered inhabitants of Upper Kanab and other small settlements to go to Kanab, Dixie, and larger towns in the area to help fortify them against Pauite raids (Ibid 65-66). Settlers did not return to Upper Kanab until 1870, when Lorenzo Roundy's nephew, Byron Donalvin Roundy, and his wife settled there. Byron and his brother, William Roundy, organized a cattle company called the Canaan Cooperative Stock Company, headquartered in St. George. In 1882, Edwin D. Woolley and Daniel Seegmiller also brought their families to settle in Upper Kanab. Two buildings, a schoolhouse and a recreation hall, were erected in 1885 at the head of the Virgin River. During the late 1880s, when the federal government began to crack down on the polygamists of Utah territory, many Mormon men fled to the area to escape marshals (Ibid 143-149). In 1887, the communities of Ranch, Upper Kanab, and Sink Valley joined together to form a LDS ward. In 1908, the town acquired its present-day name of Alton during a May Day celebration drawing. Charles R. Pugh, who had been reading a book about the Alton Fjord in Norway, suggested the name. The population of the town peaked at 350 in the 1930s (Ibid 210). In the post World War II years, coal reserves were discovered near Alton, and the Smirl-Alton coal mines extracted an average of 40 tons daily in 1949. Today, Alton is home to fewer than 100 people, and its main sources of livelihood stem from ranching, the timber industry, and its potential for coal mining.

Today, most traffic through the area is generated by tourists headed to attractions such as Bryce Canyon National Park, Zion National Park, and Grand Staircase-Escalante National Monument. Bryce Canyon, the southern part of which lies in Kane County, was designated a national monument by President Warren G. Harding in 1923, and elevated to National Park status in 1928. Originally, the boundary of Zion National Park ended at the Washington-Kane County State line. In 1930, it was expanded to include part of Kane County, which was made accessible by the Zion-Mt. Carmel tunnel and road (Bradley 1999:218). Grand Staircase-Escalante National Monument was established by President Bill Clinton on September 17, 1996. The monument comprises approximately 1.7 million acres in Kane and Garfield Counties. These major tourist destinations are all accessible via US Highway 89, which bisects Long Valley and proceeds through every town in Kane County except Alton (Ibid 8).

SURVEY METHODOLOGY

An intensive pedestrian survey was performed for this project which is considered 100% coverage. The project area was examined for cultural resources by the archaeologists walking parallel transects spaced no more than 10 m (33 ft) apart. Ground visibility was considered good. A total of 440 acres was inventoried for cultural resources entirely on private lands.

Cultural resources were recorded as archaeological sites or isolated finds of artifacts. Archaeological sites are defined as spatially definable areas with ten or more artifacts and/or features. Sites were documented by the archaeologists walking transects across the site, spaced no more than 3 m (10 ft) apart and marking the locations of cultural materials with pinflags. This procedure allowed clear definition of site boundaries and artifact concentrations. At the completion of the surface inspection, a handheld GEO XT Trimble GPS unit was employed to point-provenience diagnostic artifacts and other relevant features in reference to the site datum, a steel rebar stamped with a temporary site number. A judgmental lithic analysis sample unit (a 2x2 meter count grid) was utilized for archaeological sites with dense lithic debitage assemblages. Also, where lithic densities were variable within the site, judgmental sample units were employed to reflect such density changes. Archaeological sites were plotted on a 7.5' USGS quadrangle, photographed, and documented with site data entered on an Intermountain Antiquities Computer System (IMACS, 1990 version) inventory form (Appendix A).

INVENTORY RESULTS

The inventory resulted in the location of three previously recorded sites (42Ka2051, 42Ka6077, and 42Ka6086) and the documentation of 29 new archaeological sites, 42Ka6477 to 42Ka6505 (Table 1).

Table 1. Site Type and NRHP Eligibility.

Temporary Site Number	Smithsonian Site Number	Site Type	Cultural Affiliation	NRHP Eligibility
N/A	42Ka2051	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
05-95-64	42Ka6077	Prehistoric Lithic Scatter	Unknown Aboriginal	Not Eligible
05-95-48	42Ka6086	Historic Bridge	European/American	Not Eligible
08-159-PS1	42Ka6477	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-KS21	42Ka6478	Prehistoric Lithic Scatter	Unknown Aboriginal	Not Eligible
08-159-PS10	42Ka6479	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS8	42Ka6480	Prehistoric Lithic Scatter	Archaic	Eligible, D
08-159-PS9	42Ka6481	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS7	42Ka6482	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS6	42Ka6483	Historic Temporary Camp	European/American	Not Eligible

Temporary Site Number	Smithsonian Site Number	Site Type	Cultural Affiliation	NRHP Eligibility
08-159-KS14	42Ka6484	Historic Dugout, Corral, and Trash Scatter	European/American	Not Eligible
08-159-KS13	42Ka6485	Prehistoric Artifact Scatter	Anasazi	Eligible, D
08-159-KS11	42Ka6486	Prehistoric Artifact Scatter	Anasazi, Fremont	Eligible, D
08-159-KS9	42Ka6487	Historic Trash Scatter	European/American	Not Eligible
08-159-KS1	42Ka6488	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS2	42Ka6489	Historic Enclosure	European/American	Not Eligible
08-159-KS4	42Ka6490	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-KS2	42Ka6491	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-KS3	42Ka6492	Prehistoric Artifact Scatter	Anasazi	Eligible, D
08-159-KS8	42Ka6493	Prehistoric Artifact Scatter	Anasazi, Protohistoric	Eligible, D
08-159-KS6	42Ka6494	Prehistoric Artifact Scatter and Historic Trash Scatter	Middle Archaic, Anasazi, Protohistoric, European/American	Eligible, D
08-159-KS7	42Ka6495	Prehistoric Rockshelter and Artifact Scatter	Virgin Anasazi Pueblo II	Eligible, D
08-159-KS5	42Ka6496	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS3	42Ka6497	Prehistoric Lithic Scatter	Archaic, Protohistoric	Eligible, D
08-159-PS5	42Ka6498	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-PS4	42Ka6499	Prehistoric Lithic Scatter and Historic Trash Dump	Middle Archaic, European/American	Eligible, D
08-159-KS16	42Ka6500	Prehistoric Artifact Scatter	Anasazi	Eligible, D
08-159-KS17	42Ka6501	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-KS18	42Ka6502	Prehistoric Lithic Scatter	Unknown Aboriginal	Eligible, D
08-159-KS19	42Ka6503	Prehistoric Lithic Scatter	Unknown Aboriginal	Not Eligible
08-159-KS20	42Ka6504	Prehistoric Lithic Scatter	Unknown Aboriginal	Not Eligible
08-159-KS15	42Ka6505	Prehistoric Artifact Scatter	Late Archaic, Anasazi	Eligible, D

Archaeological Sites

Smithsonian Site No.: 42Ka2051
Temporary Site No.: N/A
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is an artifact scatter of unknown cultural affiliation located on the slope of a knoll in the valley of the Alton Amphitheater. The site was originally documented in 1980 by the Museum of Northern Arizona at which time a Rose Spring projectile point (Fremont/Anasazi) was found (not relocated). Cultural materials documented at the site include chipped stone tools and lithic debitage. The chipped stone tools consist of one white mottled chert Stage II to III biface fragment and one red mottled chert utilized flake. The lithic debitage is estimated at 25 to 100 flakes based on two lithic analysis sample units (2-x-2-m in size). The lithic debitage is dominated by shatter and lithic material types include various colors of chert. No features were documented at the site.

Smithsonian Site No.: 42Ka6077
Temporary Site No.: MOAC 05-95-64
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Not Eligible
Description: This site consists of a small lithic scatter situated in the saddle of two small ridges within a broad valley in the Alton Amphitheater. The site contains three chipped stone tools, one ground stone tool and lithic debitage. The chipped stone tools consist of one Stage VI brown chert biface, one fine-grained quartzite core, and one white chert utilized flake. One sandstone unknown ground stone was located at the site. The lithic debitage (n=28) is dominated by shatter, while tertiary flakes are common and secondary flakes are rare. The lithic debitage consists of various chert and quartzite material types. Due to the site's level of disturbance and lack of spatial integrity it is not considered eligible for nomination to the NRHP.

Smithsonian Site No.: 42Ka6086
Temporary Site No.: MOAC 05-95-48
Site Type: Historic Bridge
NRHP Eligibility: Not Eligible
Description: The site is a small wooden bridge that is collapsed into the flood plain of the Kanab Creek. The site is likely associated with settlement of the Upper Kanab area and establishment of homesteads in the Alton area. The bridge is not documented on the 1877 and 1885 GLO maps of the area. Additionally, the bridge is not depicted on the 1964 USGS 7.5' Series Alton, Utah map. The bridge lies next to a dirt road that leads south of the creek towards a gravel pit. This small wooden bridge is collapsed into the flood plain of the Kanab Creek and lies next to a dirt road that leads south of the creek to a gravel pit. The bridge is constructed of two main log beams with cut lumber planks across the top of the beams. Several hand wrought nails were used in construction, however the majority of nails observed are machine made wire nails. Currently, the two track road bypasses the bridge remnants to the west. The majority of nails used in the construction of the bridge were machine made wire nails, however several hand wrought nails were also observed. No other artifacts were documented at the site.

Smithsonian Site No.: 42Ka6477
Temporary Site No.: MOAC 08-159-PS1
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small lithic scatter of unknown cultural and temporal affiliation that is located in a saddle between the tops of two hills, overlooking the Alton Amphitheater. The artifacts documented at the site include chipped stone tools, a ground stone implement, and lithic debitage. The ground stone implement is a mano fragment that is likely single-handed and which exhibits a single grinding surface. The chipped stone tools consist of a biface fragment and a utilized flake. The lithic debitage (n=10) is dominated by shatter and lithic material types include chert, obsidian, and quartzite. No features were documented at the site.

Smithsonian Site No.: 42Ka6478
Temporary Site No.: MOAC 08-159-KS21
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Not Eligible
Description: This site is a small light lithic scatter of unknown cultural and temporal affiliation that is situated in a saddle overlooking a tributary of Kanab Creek in the Alton Amphitheater. The site consists of chipped stone debitage (n=20) dominated by shatter. Lithic raw material consists of various cherts. No features were documented at the site. Vegetation includes little sagebrush and pinyon-juniper forest.

Smithsonian Site No.: 42Ka6479
Temporary Site No.: MOAC 08-159-PS10
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is an expansive but relatively sparse lithic scatter of unknown temporal and cultural affiliation. Vegetation includes black sagebrush, juniper, bunch grass, Indian paintbrush and Sego lily. The site is situated on a low ridge in an alluvial plain west of Kanab Creek. The site consists of chipped stone debitage, tools, and groundstone. The stone tools include a Triangular Unnotched projectile point and a slab metate. The lithic debitage (n=58) is dominated by shatter and lithic material types include chert, chalcedony, and quartzite. No features were documented at the site.

Smithsonian Site No.: 42Ka6480
Temporary Site No.: MOAC 08-159-PS8
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a expansive but relatively sparse lithic scatter of Archaic temporal affiliation. The site consists of chipped stone debitage and tools situated in the Alton Amphitheater along the slope of a low ridge. Vegetation includes black sagebrush, Sego lily and bunch grasses, and the site occurs on alluvial sediments. The artifacts documented at the site include chipped stone tools and lithic debitage. The chipped stone tools include a core, a flaked cobble, and a Pinto Series point. The lithic debitage (n=56) is dominated by shatter and lithic materials include chert, quartzite, and chalcedony. No features were observed.

Smithsonian Site No.: 42Ka6481
Temporary Site No.: MOAC 08-159-PS9
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small and relatively sparse lithic scatter of chipped stone debitage and tools situated on a ridge in the Alton Amphitheater. Deposition is colluvium from surrounding ridges; the vegetation consists of pinyon-juniper, black sagebrush and gamble oak. The artifacts documented at the site include a chipped stone tool and lithic debitage. The chipped stone tool is a Stage V black obsidian biface fragment. The lithic debitage (n=9) is comprised entirely of white chert: two secondary flakes, one tertiary flake, three broken flakes and three flake fragments. No features were documented at the site.

Smithsonian Site No.: 42Ka6482
Temporary Site No.: MOAC 08-159-PS7
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small lithic scatter of unknown temporal and cultural affiliation that is situated on the north slope of low, broad knoll. The site is located in alluvial deposition and is situated in a pinyon and juniper vegetation community. The artifacts documented at the site consist entirely of lithic debitage. The lithic debitage (n=13) is dominated by shatter and lithic materials include chert and chalcedony. No other artifacts or features were observed.

Smithsonian Site No.: 42Ka6483
Temporary Site No.: MOAC 08-159-PS6
Site Type: Historic Temporary Camp
NRHP Eligibility: Not Eligible
Description: The site is a historic period temporary camp that is located on a low knoll at the south end of the Alton Amphitheater. The site consists of a rock alignment feature and a small tin can scatter. Feature A is a somewhat linear rock alignment, possibly a tent platform. The alignment consists of four amorphous, igneous rocks 12 to 18 inches in diameter and two slabs of sandstone, measuring 10 x 4 x 4 inches and 15 x 4 x 4 inches. No artifacts are specifically associated with this alignment. The site's artifact collection is sparse, consisting of eight tin cans, which include two hole-in-top cans (dating 1915 to 1929), four sanitary food cans, a sanitary coffee can, and a rectangular meat can. No other artifact classes were documented at the site.

Smithsonian Site No.: 42Ka6484
Temporary Site No.: MOAC 08-159-KS14
Site Type: Historic Dugout, Corral, and Trash Scatter
NRHP Eligibility: Not Eligible
Description: The site is a historic dugout with corral and associated trash scatter located on the slope of a ridge, northwest of Kanab Creek. The S/SW of Section 24, Township 39 South, Range 6 West was patented to Israel Hoyt on May 20, 1930. The structures are not depicted on the 1877, 1885, or 1948 GLO land survey maps of the area. The site consists of a crude dugout structure (Feature A), a corral (Feature B), and an associated trash scatter. Feature A is a crude dugout constructed of axe-cut juniper logs that pitch over an interior dug into the slight slope of the ground. The structure measures 7 ft 10 inches (north-south) x 9 ft 4 inches (east-west) and stands 4 ft 10 inches tall, above the interior ground surface. Feature B is a corral constructed of log posts with log and lumber rails attached with large wire nails. There appears to be a northern enclosure with a fence line that extends southward along the eastern side. The northern enclosure measures

approximately 79 ft (maximum length north-south) x 118 ft (maximum length east-west) and the fence line that extends southward measures 64 ft in length. Primarily, the fencing is post and rail, though the northern most fence has a section of post and rail with pickets.

The artifacts documented at the site include ceramics, glass, tin cans, three unknown metal farm implements, a metal bedframe headboard, a mother-of-pearl shank button, and three unknown metal implements. The ceramic artifacts documented at the site include a fragment of a coarse cream paste with white glaze ceramic and four fragments of a porcelain canning jar insert. The glass artifacts include a fragment of a rectangular aqua glass bottle, a fragment of an unknown amethyst bottle, and two fragments of clear bottle glass. The tin cans documented at the site include one rotary cut tall coffee can, one pound size, and several fragments of crushed and rusted unidentifiable tin cans. Additionally, a single prehistoric chipped stone tool was documented at the site. The tool is a white mottled chert Stage IV biface fragment that measures 3.0 x 2.7 x 0.6 cm. The tool exhibits extensive random bifacial thinning and retouching along one edge.

Smithsonian Site No.: 42Ka6485
Temporary Site No.: MOAC 08-159-KS13
Site Type: Prehistoric Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is an artifact scatter of Virgin Anasazi cultural affiliation that is located on the southern most end of a ridge top. The artifacts documented at the site include chipped stone tools, lithic debitage, and ceramic sherds. The chipped stone tools consist of three biface fragments, a utilized flake, two unknown type projectile point fragments, and one small triangular point. The lithic debitage (n=65) is dominated by shatter and lithic material types include chert, obsidian, and quartzite. The ceramic artifacts consist of one sherd of a Virgin Series Whiteware and 12 sherds of Virgin Series North Creek Grayware-Corrugated. The Virgin Series Whiteware sherd exhibits a medium gray clay with sand temper and an unidentified black-on-gray design. The Virgin Series North Creek Grayware-Corrugated sherds exhibit a light to dark gray clay with sand temper and a corrugated exterior, with an average wall thickness of 0.5 cm. No features were documented at the site.

Smithsonian Site No.: 42Ka6486
Temporary Site No.: MOAC 08-159-KS9
Site Type: Prehistoric Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small artifact scatter of Anasazi and Fremont cultural and temporal affiliations that is located on the slope and narrow terrace of a ridge. The artifacts documented at the site consist of chipped stone tools, lithic debitage, and ceramic sherds. The chipped stone tools include a Parowan Basal-notched point, a small triangular point, an unknown type projectile point fragment, a biface, and a multi-directional core. The lithic debitage (n=37) is dominated by shatter and lithic material types include chert, obsidian, and chalcedony. The ceramic artifacts consist of two body sherds of a Virgin Series North Creek Grayware-Corrugated ceramic. The sherds exhibit a medium to dark gray clay with sand temper and a corrugated exterior, with an average wall thickness of 0.5 cm. No features were documented at the site.

Smithsonian Site No.: 42Ka6487
Temporary Site No.: MOAC 08-159-KS9
Site Type: Historic Trash Scatter
NRHP Eligibility: Not Eligible
Description: This site is a small and relatively sparse historic trash scatter located on the west bank of Kanab Creek in the Alton Amphitheater. The site sits on an alluvial plain surrounded by ridges; the vegetation includes big sagebrush, rabbitbrush, and bunch grasses. The artifacts documented at the site include ceramics, glass, cast iron fragments, and one cut nail. The ceramic artifacts consist of at least 50 fragments of a fine yellow paste white glazed ceramic, three fragments of a fine gray paste brown salt glazed crockery, and two fragments of a porcelain teacup. The glass artifacts consist of ten fragments of amethyst glass of which one has a Brockway trademark, two fragments of molded amethyst tableware, three fragments of aqua glass, and twenty fragments of clear flat glass. No features were observed.

Smithsonian Site No.: 42Ka6488
Temporary Site No.: MOAC 08-159-KS1
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small and relatively sparse lithic scatter of unknown cultural and temporal affiliation that is located on a knoll south of Kanab Creek in the Alton Amphitheater. The site sits on an alluvial plain and the vegetation includes pinyon and juniper, black sagebrush and gamble oak. The artifacts documented at the site consist of a chipped stone tool, lithic debitage, and a light scattering of firecracked rock. The chipped stone tool is a Stage IV white chert biface. The lithic debitage (n=32) is dominated by shatter and lithic material types include chert, chalcedony, siltstone, and obsidian. No features were documented at the site.

Smithsonian Site No.: 42Ka6489
Temporary Site No.: MOAC 08-159-PS2
Site Type: Historic Enclosure
NRHP Eligibility: Not Eligible
Description: The site is a historic enclosure, possibly a corral, located on the top of a small knoll, east of Kanab Creek. Feature A is an enclosure constructed of log posts with lumber rails and chicken wire. The entire enclosure is roughly rectangular and measures approximately 118 ft (north-south) x 200 ft (east-west). There appears to be a west half (approximately 105 ft x 131 ft) and east half (108 ft x 69 ft) with a smaller enclosure (19 ft 8 inches x 16 ft 5 inches) in the east half along the south fence. The axe-cut log posts range in size between 8 ft 9 inches tall and 6 inches in diameter and 3 ft 9 inches tall and 4 inches in diameter, with three square 6 x 6 inch posts. Much of the lumber rails are dismantled or heavily deteriorated; however whole pieces range in size from 1 inch x 6 inches x 8 ft to 1 inch x 12 inches x 13 ft 9 inches. The chicken wire appears to be a standard 6 x 6 inch mesh. The lumber and chicken wire are attached to the posts with large wire nails. A gate, 48 inches wide x 38 inches tall, is attached with hinges constructed of tire tread and wire nails. A modern gravel pit is located immediately south of the enclosure and gravel piles have impacted the west side of the southern fence line. No historic era artifacts were located at the site.

Smithsonian Site No.: 42Ka6490
Temporary Site No.: MOAC 08-159-KS4
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small and relatively sparse lithic scatter of unknown cultural and temporal affiliation that is located on a low knoll in a valley east of Kanab Creek in the Alton Amphitheater. The site sits on an alluvial plain and the vegetation includes big sagebrush, juniper, mountain mahogany, gamble oak and pinyon pine. The artifacts documented at the site consists of chipped stone tools and lithic debitage. The chipped stone tools include a bidirectional core and a Stage V red chert biface. The lithic debitage (n=9) is dominated by shatter and lithic materials include chert and chalcedony. No features were observed at the site.

Smithsonian Site No.: 42Ka6491
Temporary Site No.: MOAC 08-159-KS2
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small and relatively sparse lithic scatter of unknown cultural and temporal affiliation that is located on a knoll east of Kanab Creek in the Alton Amphitheater. The site sits on an alluvial plain and the vegetation includes pinyon and juniper, black sagebrush and Sego lily. The artifacts documented at the site include chipped stone tools and lithic debitage. The chipped stone tools consist of a red quartzite multi-directional core and a Stage IV white chert biface. The lithic debitage (n=49) is dominated by shatter and lithic material types include chert, chalcedony, and quartzite. No features were observed at the site.

Smithsonian Site No.: 42Ka6492
Temporary Site No.: MOAC 08-159-KS3
Site Type: Prehistoric Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small and relatively sparse artifact scatter of Virgin Anasazi cultural affiliation that is located on a knoll east of Kanab Creek in the Alton Amphitheater. The site sits on an alluvial plain and the vegetation includes pinyon and juniper, black sagebrush and Sego lily. The artifacts documented at the site include chipped stone tools, ceramic sherds, and lithic debitage. The chipped stone tools consist of a Stage III yellow and white chalcedony biface and a Stage III white chert biface. The ceramics consist of thirteen sherds of an undetermined Virgin Series Grayware with a fine sand temper and a pitted exterior. The lithic debitage (n=9) is dominated by shatter and lithic material types include chert and chalcedony. No features were observed.

Smithsonian Site No.: 42Ka6493
Temporary Site No.: MOAC 08-159-KS8
Site Type: Prehistoric Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small artifact scatter of Virgin Anasazi and Protohistoric cultural and temporal affiliation that is located in a valley, immediately west of Kanab Creek. The artifacts documented at the site include chipped stone tools, lithic debitage, and ceramic sherds. The chipped stone tools consist of a biface fragment and a Desert Side-notched point (Tool 2). The lithic debitage (n=13) is dominated by shatter and lithic materials consist entirely of chert. The ceramic artifacts consist of twelve body sherds and one rim sherd of a Virgin Series North Creek Grayware-Corrugated ceramic. The sherds exhibit a medium to dark gray clay with sand temper

and a corrugated exterior, with an average wall thickness of 0.5 cm. No features were documented at the site.

Smithsonian Site No.: 42Ka6494
Temporary Site No.: MOAC 08-159-KS6
Site Type: Prehistoric Artifact Scatter and Historic Trash Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a multi-component site that consists of a prehistoric artifact scatter and a historic trash scatter. The site is located in the valley of Kanab Creek, at the base of a low lying ridge. The prehistoric artifact scatter is of Middle Archaic, Virgin Anasazi, and Protohistoric temporal and cultural affiliation. The prehistoric artifacts documented at the site consist of chipped stone tools, a ground stone implement, lithic debitage, and ceramic sherds. The tools include a Desert Side-notched point, a Hawken Side-notched point base fragment, and a single-handed mano with two grinding surfaces. The lithic debitage (n=4) consists of tertiary flakes and shatter and lithic materials consist of chert. The ceramic artifacts consists of two body sherds of a Virgin Series Grayware-Plain ceramic with a gray clay, angular sand temper, and an average thickness of 0.4 cm. No prehistoric features were documented at the site.

The historic component of the site is a sparse trash scatter situated in the low sagebrush surrounding the east side of Kanab Creek. The historic period artifacts documented at the site consist of ceramic fragments, glass fragments, scrap tin, four pieces of a cast iron stove, a cast iron wagon leaf spring, a white glass button with four holes, a pants rivet embossed "L.S. & Co. S.F.," an unknown abalone shell fragment, and various unidentifiable rusted tin can fragments. The ceramic artifacts documented at the site include fragments of a fine tan paste with white glaze ceramic, fragments of a coarse yellow paste with a white glaze ceramic, fragments of porcelain ceramic with clear glaze, a fragment of a coarse tan paste brown glazed crock, and fragments of a fine yellow paste white glazed unknown ceramic. The glass artifacts include fragments of amethyst bottle glass, fragments of clear bottle glass, fragments of aqua bottle glass, fragments of clear window pane glass, a base fragment of a clear drinking glass, fragments of aqua window pane glass, a fragment of milk glass, fragments of an amethyst pressed glass tableware, and a fragment of a clear canning jar rim. No historic features were documented at the site.

Smithsonian Site No.: 42Ka6495
Temporary Site No.: MOAC 08-159-KS7
Site Type: Prehistoric Rockshelter and Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a rockshelter and artifact scatter of Virgin Anasazi Pueblo II cultural and temporal affiliation, that is located on the south slope of a ridge overlooking Kanab Creek. The site consists of a rockshelter, a firecracked rock concentration, and an artifact scatter. Feature A is a rockshelter eroded into sandstone bedrock along a south facing ridge slope. The rockshelter measures 2.09 m in width, 1.08 m in height, and 1.64 m in depth. A depression is evident in the floor of the rockshelter, but may be due to animal activity. However, colluvial sediment is located in the rockshelter and appears to have soil depth. No artifacts were documented inside the rockshelter, however several ceramic sherds and lithic debitage were located immediately outside the shelter and Tools 1 and 2, a mano and slab grinding stone, are located on top of the rockshelter. Feature B is a small firecracked rock concentration with an amorphous dark soil stain. The feature measures 1.07 m (north-south) x 0.75 m (east-west) and is located on a steep slope. Firecracked rock appears to be eroding from the feature down slope. There are five pieces of firecracked rock that average 16.0 x 9.5 x 2.5 cm in size. The soil stain is a dark brown to black silt with no charcoal or flecking.

The artifacts documented at the site include ground stone implements, chipped stone tools, lithic debitage, and ceramic sherds. The ground stone implements consist of a pink quartzite single-handed mano (Tool 1) with two grinding surfaces and a large fragment of a portable tan sandstone slab milling stone (Tool 2). The chipped stone tools include a Bull Creek point (Tool 9), two small triangular points, a large Corner-notched point, a projectile point fragment of unknown type, a biface, and a uniface. The lithic debitage (n=23) is dominated by shatter and lithic material types include chert, obsidian, and quartzite. The ceramic sherds (n=36) consist of 18 body sherds and two bowl rim sherds of a Virgin Series Grayware corrugated ceramic, 14 body sherds and two jar rim sherds of a Virgin Series Grayware-Plain ceramic, and one body sherd of a Virgin Series North Creek black-on-gray ceramic bowl that resembles a Sosi style.

Smithsonian Site No.: 42Ka6496
Temporary Site No.: MOAC 08-159-KS5
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small lithic scatter of unknown cultural and temporal affiliation that is located a the base of a slope of a low lying ridge, east of Kanab Creek. The site vegetation includes low sagebrush, pinyon, juniper, and sparse bunch grasses. The artifacts documented at the site consist of chipped stone tools and lithic debitage. The chipped stone tools consist of one cobble core and three biface fragments ranging from Stage II to IV, of which one is a possible drill fragment. The lithic debitage (n=7) is dominated by tertiary flakes and shatter and the lithic material consists entirely of chert. No features were documented at the site.

Smithsonian Site No.: 42Ka6497
Temporary Site No.: MOAC 08-159-PS3
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a lithic scatter of Archaic and Protohistoric temporal affiliation that is located on the slope of a low lying hill in the valley of the Alton Amphitheater. The artifacts documented at the site consist of chipped stone tools (n=9) and lithic debitage. The chipped stone tools include a McKean Lanceolate base fragment, a Desert Side-notched fragment, two large triangular points, a small triangular point, two projectile point fragments of unknown type, one biface fragment, and one utilized flake. The lithic debitage (n=129) is dominated by shatter and lithic material types consists of a variety of chert. No features were documented at the site.

Smithsonian Site No.: 42Ka6498
Temporary Site No.: MOAC 08-159-PS5
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small, dense lithic scatter of unknown cultural and temporal affiliation that is located in a valley east of Kanab Creek. The artifacts documented at the site include chipped stone tool (n=2) and lithic debitage. The chipped stone tools consist of a Stage V or VI biface fragment (Tool 1) and a mid-section fragment of an unknown projectile point type (Tool 2). The lithic debitage (n=103) is dominated by shatter and lithic material types consist of various chert. No features were documented at the site.

Smithsonian Site No.: 42Ka6499
Temporary Site No.: MOAC 08-159-PS4
Site Type: Prehistoric Lithic Scatter and Historic Trash Dump
NRHP Eligibility: Eligible, Criterion D
Description: The site is a multi-component site with a prehistoric lithic scatter and a historic trash dump that is located in a valley, east of Kanab Creek. The prehistoric lithic scatter is of Middle Archaic temporal, as suggested by the presence of a Hawken Side-notched point (Tool 4). The prehistoric artifacts documented at the site include chipped stone tools (n=7) and lithic debitage. The chipped stone tools consist of a Hawken Side-notched point, a small Side-notched point, a large Corner-notched point, a projectile point fragment of unknown type, a utilized core, and two biface fragments. The lithic debitage (n=55) is dominated by shatter and lithic material types include chert and quartzite. No features were documented at the site.

The historic component of the site consists of a trash dump that likely dates ca. 1952. The artifacts documented at the site are all located within a trash dump that measures approximately 11 ft x 16 ft. The documented artifacts include ceramic fragments, glass fragments, tin cans, a Utah licence plate from 1952 (874-BF), a metal spoked wheel, two cast iron tire parts, a galvanized aluminum wash tub, 12 canning seals, a canning ring, unknown engine parts, a tan brick, five pieces of milled lumber, and various modern metal scraps. The ceramic artifacts documented at the site consist of at least 15 fragments of a coarse yellow paste, white glazed ceramic. The glass artifacts documented at the site include a brown liquor bottle base with the Anchor Hocking trademark (dating 1937 to present), a clear medicine bottle base with the Owens-Illinois trademark (I-O Duraglas; dating 1954 to present), a clear bottle base with the W.J. Latchford trademark (dating 1925 to 1938 and 1957 to 1989), a whole brown medicine bottle with the Brockway Glass Company trademark (dating 1925 to 1988), a clear drinking glass base with the Federal Glass Company trademark (dating 1901 to 1980), a clear square perfume bottle base with the Anchor Hocking trademark, a clear bottle base with the Alexander H. Kerr & Company trademark (AHK; dating 1937 to date), fragments of an ashtray with paint from "Las Vegas," fragments of clear bottle glass, fragments of milk glass, fragments of a milk glass teacup, a fragment of a Barq's root beer bottle, a handle fragment of a brown Clorox bottle, handle fragments of a clear jug, fragments of cobalt glass, and fragments of clear pressed glass from a mug and an unknown piece of tableware. The tin cans documented at the site include sanitary food cans, key wind coffee cans, one tall coffee can, a lard bucket, paint cans, meat cans, and sardine tins.

Smithsonian Site No.: 42Ka6500
Temporary Site No.: MOAC 08-159-KS16
Site Type: Prehistoric Artifact Scatter
NRHP Eligibility: Eligible, Criterion D
Description: This site is a small light lithic scatter of Anasazi cultural affiliation. The site consists of chipped stone debitage (n=10) dominated by shatter, and three indeterminate sand-tempered plain gray ware sherds. The sherds are likely the result of a pot drop. Lithic raw material consists of chert, quartzite and chalcedony of varying quality and color. The site is situated on a slope at the north edge of Sink Valley north of Lower Robinson Creek. Vegetation includes pinyon-juniper forest, low sagebrush and mountain mahogany.

Smithsonian Site No.: 42Ka6501
Temporary Site No.: MOAC 08-159-KS17
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small lithic scatter of unknown cultural affiliation located on a slope in a valley, north of Lower Robinson Creek. Vegetation includes pinyon-juniper forest, low sagebrush and various unidentified bunch grasses. The artifacts documented at the site consist of chipped stone tools, ground stone implements, and lithic debitage. The lithic tools consist of two bifaces, a single-handed mano, and a metate fragment. The lithic debitage (n=22) is dominated by shatter and lithic material types include chert and chalcedony. No features were observed at the site.

Smithsonian Site No.: 42Ka6502
Temporary Site No.: MOAC 08-159-KS18
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is a small, disperse lithic scatter of unknown cultural and temporal affiliation that is located on a gentle slope in a valley, north of Lower Robinson Creek. The artifacts documented at the site include chipped stone tools and lithic debitage. The chipped stone tools consist of a white mottled chert large stemmed point (possibly a Gypsum point broken before completed) and a red quartzite multi-directional core. The lithic debitage (n=14) is dominated by shatter and lithic material types consist entirely of chert. No features were documented at the site.

Smithsonian Site No.: 42Ka6503
Temporary Site No.: MOAC 08-159-KS19
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Not Eligible
Description: The site is a small, sparse lithic scatter of unknown cultural and temporal affiliation that is located on the gentle slope of a valley. The artifacts documented at the site include a single chipped stone tool and lithic debitage. The chipped stone tool is a Stage III grey and white mottled biface fragment. The lithic debitage (n=9) is dominated by shatter and lithic material types include chert and quartzite. The site appears surficial, as no cultural features were observed and the alluvial valley sediments appear stable with little to no potential for buried cultural materials.

Smithsonian Site No.: 42Ka6504
Temporary Site No.: MOAC 08-159-KS20
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Not Eligible
Description: The site is a small, sparse lithic scatter of unknown cultural affiliation that is located on the top of a low lying, north-south trending, ridge. The site is situated in residual sediments and site vegetation includes pinyon, juniper, Gambel oak, and sparse low sagebrush. The artifacts documented at the site consist entirely of lithic debitage. The lithic debitage (n=15) is dominated by shatter and lithic material types include chert, obsidian, and quartzite. No features were observed at the site.

Smithsonian Site No.: 42Ka6505
Temporary Site No.: MOAC 08-159-KS15
Site Type: Prehistoric Lithic Scatter
NRHP Eligibility: Eligible, Criterion D
Description: The site is an artifact scatter of Late Archaic and Virgin Anasazi cultural and temporal affiliation that is located on the top and western slope of a low lying knoll, south of Lower Robinson Creek. The artifacts documented at the site include chipped stone tools, ground stone implements, lithic debitage, and ceramic sherds. The stone tools include a serrated Gypsum point, a large triangular point, a slab milling stone fragment, a single-handed mano, and three bifaces. The lithic debitage (n=50) is dominated by shatter and lithic material types include chert and quartzite. The ceramics documented at the site include twelve body sherds of North Creek Grayware - Corrugated and two body sherds of North Creek Grayware-Plain. The Virgin Series North Creek Grayware-Corrugated sherds exhibit a medium gray clay with sand temper and a corrugated exterior, with an average wall thickness of 0.5 cm. The Virgin Series North Creek Grayware-Plain sherds exhibit a medium gray clay with sand temper and a smoothed interior and exterior, with an average wall thickness of 0.5 cm. No features were documented at the site.

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the NRHP are outlined in 36 CFR 60.4 as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they:
>
> a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b)...are associated with the lives of persons significant to our past; or
>
> c)...embody the distinctive characteristics of a type, period, or method of construction; or that represents 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)...have yielded or may be likely to yield information important in prehistory or history.

The inventory resulted in the location of three previously recorded sites (42Ka2051, 42Ka6077, and 42Ka6086) and the documentation of 29 new archaeological sites, 42Ka6477 to 42Ka6505. Twenty-three sites are recommended as eligible to the NRHP under Criterion D, as these sites have the potential for buried cultural materials and are likely to provide further information regarding the prehistory of the area. Twelve of the eligible sites (42Ka2051, 42Ka6477, 42Ka6479, 42Ka6481, 42Ka6482, 42Ka6488, 42Ka6490, 42Ka6491, 42Ka6496, 42Ka6498, 42Ka6501, and 42Ka6502) are prehistoric lithic scatters of unknown aboriginal cultural affiliation. Eight eligible sites (42Ka6480, 42Ka6485, 42Ka6486, 42Ka6492, 42Ka6493, 42Ka6497, 42Ka6500, and 42Ka6505) are prehistoric lithic and artifact scatters whose cultural and temporal affiliations include the Archaic, Late Archaic, Anasazi, Fremont, and Protohistoric. Site 42Ka6495 is a prehistoric rockshelter and artifact scatter, for which diagnostic artifacts indicate an affiliation with the Virgin Anasazi Pueblo II period. Site 42Ka6494 is a multi-component site consisting of a

prehistoric artifact scatter (Middle Archaic, Anasazi, and Protohistoric affiliations) and a historic trash scatter. Site 42Ka6499 is a multi-component site consisting of a Middle Archaic lithic scatter and historic trash dump. The prehistoric components of sites 42Ka6494 and 42Ka6499 are recommended as eligible under Criterion D and the historic components are recommended as not eligible to the NRHP.

Nine sites (42Ka6077, 42Ka6086, 42Ka6478, 42Ka6483, 42Ka6484, 42Ka6487, 42Ka6489, 4242Ka6503, and 42Ka6504) are recommended as not eligible to the NRHP. Site 42Ka6086 is a historic collapsed bridge that has previously been recommended as not eligible. Site 42Ka6483 is a historic temporary camp that consists of a possible tent platform and small can scatter. Site 42Ka6484 is a historic dugout, corral, and trash scatter. Site 42Ka6487 is a historic trash scatter and site 42Ka6489 is a historic enclosure. Sites 42Ka6077, 42Ka6503, and 42Ka6504 are small, sparse prehistoric lithic scatters of unknown aboriginal affiliation that lack the potential for subsurface cultural deposits and are unlikely to provide further information important to the prehistory of the area. These nine sites are recommended as not eligible to the NRHP as they are not associated with significant historic events or persons (Criteria A and B); nor do these sites embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master (Criterion C), and these sites are unlikely to provide further information important to the prehistory and history of the area (Criterion D).

MANAGEMENT RECOMMENDATIONS

The inventory of Alton Coal Development's additional 440 acres in the Alton Amphitheater, Kanab Creek, and Sink Valley localities resulted in the location of three previously recorded sites (42Ka2051, 42Ka6077, and 42Ka6086) and the documentation of 29 new archaeological sites, 42Ka6477 to 42Ka6505. Twenty-three sites (42Ka2051, 42Ka6477, 42Ka6479-6482, 42Ka6485, 42Ka6486, 42Ka6488, 42Ka6490-42Ka6502, and 42Ka6505) are recommended as eligible to the NRHP under Criterion D, as these site have the potential for buried cultural materials and are likely to provide further information regarding the prehistory of the area. The remaining nine sites are recommended as not eligible to the NRHP. It is recommended that all eligible sites be avoided by the undertaking. Based on adherence to these recommendations, a determination of "no historic properties affected" is recommended for the undertaking pursuant to Section 106, 36 CFR 800.

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APPENDIX A

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM (IMACS)
SITE FORMS
(42Ka6477 to 42Ka6505)

On File At:

Utah Division of State History
Salt Lake City, Utah