A CULTURAL RESOURCE INVENTORY OF BROWN DUCK, CLEMENTS, ISLAND, AND KIDNEY LAKES FOR THE SECTION 203 HIGH MOUNTAIN LAKE STABILIZATION PROJECT, DUCHESNE COUNTY, UTAH

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ABSTRACT

In spring of 2000, CH2MHILL of Salt Lake City requested that Sagebrush Consultants, L.L.C. (Sagebrush) conduct cultural resource inventories at Brown Duck, Clements, Island and Kidney Lakes in preparation for the proposed High Mountain Lakes Stabilization Project located in Northwestern Duchesne County, Utah. This stabilization project is associated with the Section 203 Environmental Assessment (EA). The Section 203 Project includes cultural resource work associated with the stabilization of 14 high mountain lakes and inventory associated with several low elevation features of the project including pipeline corridors, canal diversion replacement/construction, reservoir enlargement, and wetland/riparian creation. In order to streamline the cultural resource inventory process, initial cultural resource inventory work for the Section 203 Project has been divided into three stages to be documented separately in three cultural resource reports. This report presents the results of cultural resource inventories associated with stage one of the Section 203 Project.

The Section 203 EA includes plans for the proposed stabilization of 14 high mountain lakes in the Lake Fork and Yellowstone River Drainages. Dams were constructed at each of these lakes in order to impound additional water during the winter and spring snowfall for subsequent release during summer irrigation. Through stabilization constant lake water levels will be maintained year-round. The resulting lake level would be more consistent with the natural state of each lake prior to dam construction. As a result, stream flows originating in the upper watershed will be unregulated and follow natural runoff patterns. The goal of stabilization is to enhance recreational values within the High Uintas Wilderness Area, improve water quality and fish habitat, and to eliminate impacts to the wilderness area associated with dam maintenance operations (Central Utah Water Conservancy District 1996:S-3).

The purpose of this cultural resource inventory at Brown Duck, Clements, Island and Kidney Lakes was to identify, record and determine the extent and significance of all cultural resource sites located within the proposed project area. In addition, the four known historic dam sites were to be recorded at the intensive level and their significance re-evaluated based upon their current state. Brown Duck, Clements, Island, and Kidney Lakes lie on lands administered by the Ashley National Forest located within the High Uintas Wilderness Area. Fieldwork for the project was carried out by Heather M. Weymouth, Lynita S. Langley Ware, and James R. Christensen in August and September, 2000.

A total of eight new prehistoric cultural resource sites (42Dc1339 through 42Dc1346) were identified, recorded, and evaluated for eligibility to the National Register of Historic Places (NRHP) as part of this project. In addition, four historic dams previously documented during a 1995 Historic American Engineering Record (HAER) survey (Fraser and Jurale 1985a; 1985b; 1985c; 1985d; Fraser 1986) were revisited. These sites (HAER Numbers 42-UT-B, 42-UT-C, 42-UT-I and 42-UT-J) were recorded on Utah Office of Preservation Historic Site (USHS) Forms and reevaluated for eligibility to the NRHP. Twenty-two isolated finds (IF-1 through IF-22) were also recorded during this inventory. Of the 12 cultural resource sites evaluated during

this inventory a total of four previously identified historic dams (HAER Numbers 42-UT-B, 42-UT-C, 42-UT-I and 42-UT-J) and four newly identified prehistoric sites (42Dc1340, 42Dc1341, 42Dc1342 and 42Dc1344) are recommended **ELIGIBLE** to the NRHP based upon age and integrity as well as upon selected criteria of the National Register.

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INTRODUCTION

In spring of 2000, CH2MHILL of Salt Lake City requested that Sagebrush Consultants, L.L.C. (Sagebrush) conduct cultural resource inventories at Brown Duck, Clements, Island, and Kidney Lakes in preparation for the proposed High Mountain Lakes Stabilization Project. This stabilization project is associated with the Section 203 Environmental Assessment (EA). The Section 203 Project includes cultural resource work associated with the stabilization of 14 high mountain lakes and inventory associated with several low elevation features of the project including pipeline corridors, canal diversion replacement/construction, reservoir enlargement, and wetland/riparian creation. In order to streamline the cultural resource inventory process, initial cultural resource inventory work for the Section 203 Project has been divided into three stages to be documented separately in three cultural resource reports. Stage one consists of inventory of four high mountain lakes within the Lake Fork River Drainage. Stage two consists of inventory of low elevation features associated with the project. Stage three consists of inventory of ten high mountain lakes within the Yellowstone River Drainage. Inventories for stages one and two were completed during the year 2000. Inventories for stage three will be conducted during the summer of 2001. This report presents the results of cultural resource inventories associated with stage one of the Section 203 Project. Results of the stage two inventories are documented in Sagebrush Consultants Cultural Resource Report No. 1163 (Sayers and Polk 2001).

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The current project area is located in Northwestern Duchesne County, Utah in [redacted] Quadrangles Kidney Lake (1967) and Oweep Creek (1967), Utah (Figures 1-2). These areas lie on lands administered by the Ashley National Forest located within the High Uintas Wilderness

Figure 1. General location of the Section 203 High Mountain Lake Stabilization Project within the state of Utah.

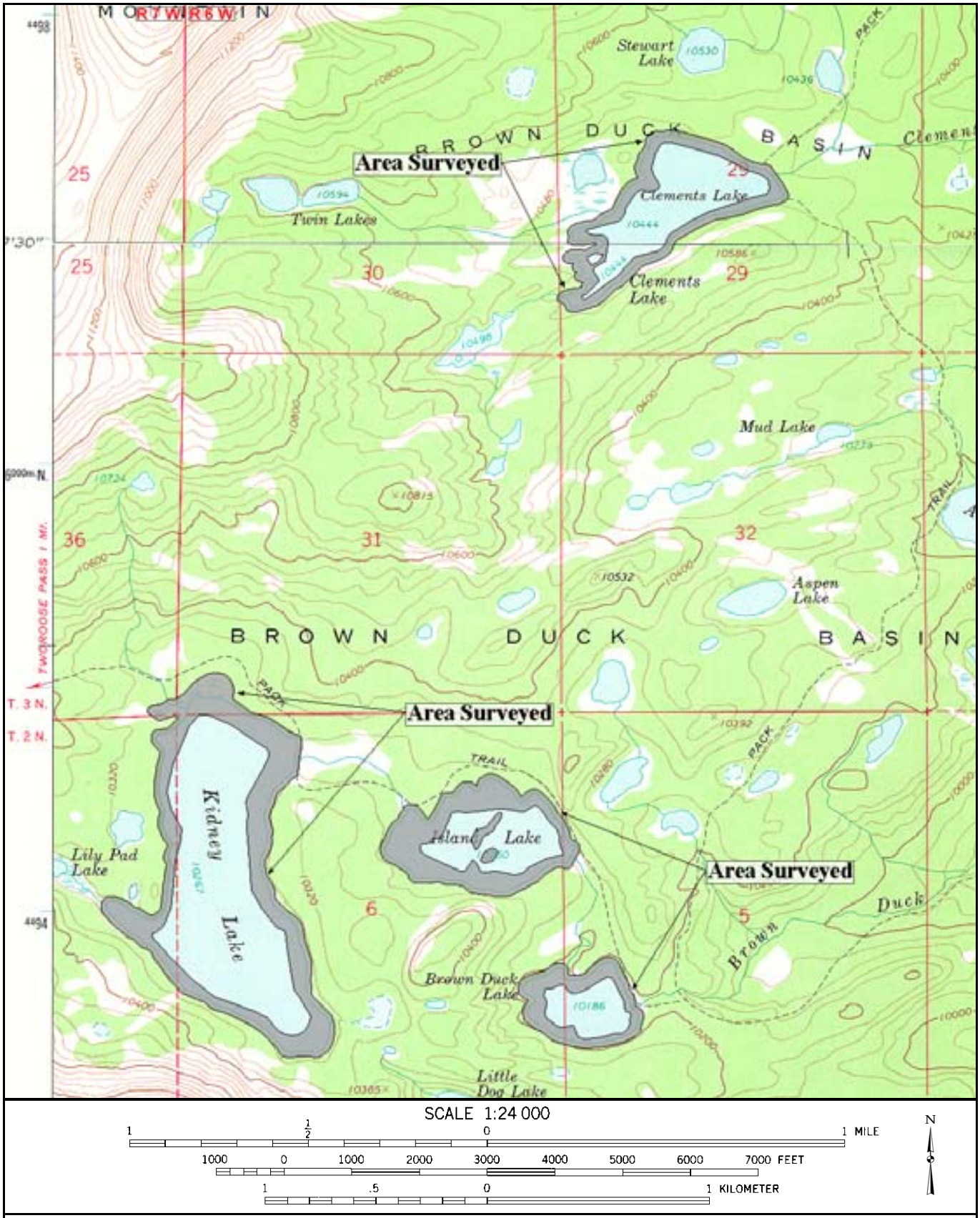

Figure 2. Location of the area surveyed for the High Mountain Lake Project. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).

Area. Initial fieldwork for the project was carried out by Heather M. Weymouth, Lynita S. Langley Ware, and James R. Christensen between August 26 and September 3, 2000. Subsequent fieldwork was completed by Heather M. Weymouth and James R. Christensen between September 11 and September 14, 2000. All fieldwork was conducted under authority of Utah State Antiquities Permit No. U-00-SJ-0734f and United States Forest Service Temporary Special-Use Permit (Authorization ID RST900401).

Prior to conducting fieldwork, a file search for previously recorded cultural resource sites near the current project area was conducted by Lynita S. Langley Ware on July 19, 2000 at the Division of State History, Utah State Historic Preservation Office (SHPO) in Salt Lake City and the Division of State History Library, Salt Lake City. Only one cultural resource project has been conducted within a one mile radius of the current project areas. In 1985, Fraserdesign of Loveland, Colorado, completed Historic American Engineering Record (HAER) documentation of 14 dams and one tunnel within the Upalco Unit of the Uinta Basin Replacement Project (Fraser and Jurale 1985a; 1985b; 1985c; 1985d; Fraser 1986). This documentation included those dams at Brown Duck (HAER UT-42-B), Clements (HAER UT-42-C), Island (UT-42-I), and Kidney (HAER UT-42-J) Lakes. This documentation provided a brief regional irrigation context, short historic overviews, and brief dimensional descriptions of each dam. At that time, Brown Duck Dam was recommended NOT eligible to the National Register of Historic Places (NRHP). The Island, Kidney, and Clements Lake Dams were recommended ELIGIBLE to the NRHP.

No additional cultural resource sites have been recorded in the vicinity of the project area. The National Register of Historic Places (NRHP) was consulted prior to the initiation of the current inventory. No NRHP listed sites were found to be located near the project area.

ENVIRONMENT

The project area lies on the Lake Fork River Drainage in the Brown Duck Basin region of the High Uintas Wilderness Area in Northwestern Duchesne County, Utah. The elevation of the areas surveyed ranges between 10,180 and 10,440 feet a.s.l. This is a region that was heavily glaciated during the last ice age as evidenced by remnant glacial features which dominate the landscape. Generally the topography is characterized by hummocky moraines, glacial boulder deposits, kettle lakes, muskegs, steep talus slopes and glacial cirques in the highest elevations. Soils at this elevation are shallow and residual in nature. Vegetation in the Brown Duck Basin is dominated by coniferous trees of the Douglas Fir Community, including species of fir, spruce, pine, and aspen. The understory consists of various low shrubs, including service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberry, and assorted grasses. Vegetation is very dense in areas not affected by seasonal lake level fluctuation. In those areas that have been inundated, vegetation is virtually nonexistent, or, is limited to sparse patches of grasses. Lakes and streams are fed by snow melt and seasonal run-off from higher elevations and augmented by

numerous springs year-round. Natural disturbance in the area consists of wind and water erosion, frost heaving, and mass wasting. Cultural disturbances in the area include recreational impacts, trail construction/maintenance, dam construction/maintenance, and the seasonal innundation of lake shore margins by impounded waters.

METHODOLOGY

The area inventoried for this stage of the Section 203 Project consists of four lakes, located on the Lake Fork River Drainage, targeted as part of the High Mountain Lakes Stabilization Project. The inventory conducted at Brown Duck, Clements, Island and Kidney Lakes consisted of two tasks; 1) completion of an intensive level pedestrian survey of each lake margin and, 2) completion of an intensive level recordation of each historic dam site and its associated features.

The area surveyed at each lake consisted of an irregular corridor following the existing lake margin at its year 2000 seasonal low. The width of the corridor was bounded on one side by the low water level and the other by an imaginary line running 15 m (50 ft) above, and parallel to, the visible high water line surrounding each lake. The survey was conducted as late in the season as feasible (based upon weather constraints) in order to expose the maximum ground surface between the high and low lake levels. This strategy made it possible to access a larger portion of those areas which are generally inundated by the high seasonal lake level. The survey corridor around each lake varied in width as a result of lake shore depth at low water stage, ranging from 38 m (125 ft) to 266 m (875 ft). The corridors were inventoried in a series of parallel transects spaced no more than 15 m apart. The area surveyed at Brown Duck Lake totaled 16.9 ha. (41 ac). The area surveyed at Clements Lake totaled 22 ha. (54.4 ac). The area surveyed at Island Lake totaled 23.8 ha. (59 ac). The area surveyed at Kidney Lake totaled 36 ha. (89.3 ac). A total of 98.7 ha. (243.7 ac) were surveyed during this inventory.

All sites located during the field inventory were recorded by Sagebrush on Utah Office of Preservation Historic Site (USHS) forms or Intermountain Antiquities Computer System (IMACS) site forms (Appendix A-B). Isolated Artifacts (IFs) were recorded on Isolated Artifact forms (Appendix C). All site and isolated artifact locations were point plotted on the appropriate USGS topographic quadrangle and are presented in the text of this report. Photographs were taken to accompany all site and isolate forms and site sketch maps were completed for all sites recorded (Appendix A-C). For the purposes of this inventory a “site” was defined as any cultural manifestation consisting of greater than 10 artifacts. If 10 artifacts or less were identified the location was recorded as an IF locality.

PREHISTORIC OVERVIEW

The prehistory of the current project area is complex and poorly understood because of the area's location near the contact zone between the Great Basin, Colorado Plateau, and Northern Plains cultures. The prehistory of the Uinta Basin is a meld of these traditions that has resulted in the identification of many enigmatic archaeological sites. Despite this mix of archaeological traits, the authors believe that the general model of prehistory for the eastern Great Basin and northern Colorado Plateau is most prominent in the Uinta Basin. As such, that general model will be followed in this study. The cultural changes in these areas are classified into the following four general chronological periods: Paleo-Indian, Desert Archaic, Formative, and Post-Formative (Jennings 1986). Within each of these major periods are a number of separate phases that are marked by a distinct lifeway. Following is a brief description of each period (some of which may overlap in time) and their distinct phases. These descriptions note significant traits, characteristics, and artifacts associated with each period or phase.

Paleo-Indian Period: ca. 12000 B.C. to 9000 B.C.

Also known as the Clovis Period, the Paleo-Indian Period is poorly understood in the eastern Great Basin and northwestern Colorado Plateau. What little is known about this period comes from a limited number of surface sites and isolated finds of Clovis, Folsom, and Lake Mojave projectile points (Zier 1984).

Associations of large faunal remains, such as those of extinct bison, camel, mammoth, ground sloth, and other large fauna, with Paleo-Indian artifacts like those commonly found in the Great Plains are absent in the eastern Great Basin. Sites and isolates attributed to Paleo-Indian occupation of the area are typically found along the edges of extinct Pleistocene or early Holocene beaches, suggesting a possible lake edge-marsh adaptation (Madsen 1982; Heizer and Baumhoff 1970).

Desert Archaic Period: ca. 9000 B.C. to A.D. 500

This period, which is also poorly represented in the project area, is marked by broad range movement and diminishing hunting of big game by the native peoples. It also includes a time of climatic change associated with the end of the Pleistocene Epoch and with the subsequent cultural adaptations. The Desert Archaic is divided into three phases: the Bonneville Phase, the Wendover Phase, and the Black Rock Phase. Important sites associated with these periods that are located in the basin area east of Duchesne include Swelter Shelter and Thorne Cave (Jones and MacKay 1980).

Bonneville Phase: ca. 9000 B.C. to 7500 B.C.

The terminal Pleistocene, called the Bonneville Phase in the Great Basin by Aikens and Madsen (1986), represents the time of diminishing reliance on big game hunting and an increased use of a broader range of natural resources. Though evidence of this phase of human activity has been found in other parts of the western United States, its presence in Utah is largely limited to surface finds of large lanceolate-shaped projectile points along lakeshores in the western part of the state (Aikens and Madsen 1986). In north-central Utah, known evidence of this phase is limited. In addition to two fluted projectile points, one found near Duchesne in the 1950s (Schroedl 1976), and the other (a point fragment) found near Cedarview, 10 miles northwest of Roosevelt (Lindsay 1976), a small number of Plano points have been found in the area (Loosle 1995). These Plano points suggest the influence of the Plains Cultures on the inhabitants of the general project area.

Wendover Phase: ca. 7500 B.C. to 4000 B.C.

This phase encompasses the time when Pleistocene lakes in the Great Basin greatly receded. The change in environment gave way to a more diversified hunting and gathering subsistence strategy for prehistoric inhabitants because of a wider availability of game and plant foods. Technological changes that occurred along with these environmental shifts included the appearance of an increasing number of grinding implements for wild plant processing, and of atlatls or spear-throwers. Other artifacts known from this occupation include thin slab millstones, manos, L-shaped scapula and splinter awls, antler flaking tools, basketry, and flaked stone tools (Jennings 1978).

Black Rock Phase: ca. 4000 B.C. to A.D. 500.

The Black Rock Phase (Aikens and Madsen 1986) is characterized by a movement toward the occupation of sites within a broader range of ecozones and a further diversification of resource exploitation to include a large proportion of upland resources. The technology of the phase was largely similar to that of the Wendover Phase. The greatest change in technology occurred near the close of the phase when smaller projectile points were introduced, indicating a shift to the use of the bow and arrow.

Formative Period: ca. A.D. 400 to 1300

This period is characterized by a shift from a hunting and gathering lifeway to a more sedentary one based on horticulture. The growing of maize increased during this period throughout much of the Great Basin, however, it was less intensive in the Uinta Basin than in areas to the south. The native peoples associated with this period, the Fremont, were roughly contemporaneous with the Anasazi of southern Utah and the Four-Corners region. A number of important sites attributable to this period are located in the general vicinity of the project area. These sites, primarily represented by small hamlets or rancherias, include Caldwell Village, Flattop Butte,

Felter Hill, the Goodrich Site, and the Gilbert Site (Marwitt 1986). The Formative Period is composed of a single phase known loosely as the Fremont Culture Phase. The broader Fremont Culture Phase in the Uinta Basin has been divided into two subphases, known as the Cub Creek Phase and the Whiterocks Phase (Marwitt 1986).

Fremont Culture Phase: ca. A.D. 400 to 1300.

Near the end of the Black Rock Phase of the Desert Archaic Period, many elements of a settled horticultural lifestyle were introduced into the Archaic lifeway of Utah from the Southwest, including the manufacture of pottery and the development of horticultural practices. The Fremont Culture is a label applied to groups exhibiting this different lifestyle who occupied the Utah area from ca. A.D. 400 to 1300 (Marwitt 1986). Five geographic variants of the Fremont Culture are generally recognized today. One of them, the Uinta Basin variant, resided within the project area.

The Uinta Basin Fremont had a relatively short period of occupation compared to other Fremont variants throughout the state of Utah (Marwitt 1986). Until a short time ago, archaeological evidence suggested an occupation period from A.D. 650 to 1175 for this group. However, a recently excavated Uinta Basin Fremont site in western Colorado yielded a date of post-A.D. 1500. This new evidence suggests a later Fremont occupation of the area than was previously believed (Loosle 1995).

The occupation of the Uinta Basin Fremont is enigmatic in other ways as well. Most archaeological sites attributable to this group indicate a less intensive (population) use of the area than has been evidenced for other Fremont groups in other areas of the state. These sites often consist of only a small number of shallow, circular pit houses and no surface storage structures. Coupled with the high average elevation of the area and the short growing season, the small "village" size and lack of storage structures suggest limited use of the area by the Fremont. However, other Uinta Basin Fremont sites indicate a different scenario. Several large Fremont archaeological sites, such as those in Dry Fork Canyon and within Dinosaur National Monument, have also been documented. At least one of these sites is over 10 acres in size (Loosle 1995). Sites such as these suggest a much more intensive use of the area by the Fremont.

The material remains of the Uinta Basin Fremont are somewhat unique compared to those of other Fremont variants. For example, the "Utah type" metate, although found in the area, is far less common than in other areas of the state. In addition, it does not appear that the Uinta Basin Fremont created the clay figurines that are the hallmarks of Fremont cultures elsewhere in the region (Marwitt 1986). The Uinta Basin Fremont also restricted their use and creation of pottery to a limited stylistic assemblage dominated by undecorated, limestone or calcite tempered grayware, known as Uinta Gray pottery. A small proportion of decorated and incised tradewares appear to have been acquired by the Uinta Basin Fremont from other Fremont and Anasazi groups (Marwitt 1986).

Cub Creek Phase: ca. A.D. 650 to 800.

The Cub Creek (Sub)Phase of the Fremont Culture Period is known from sites such as Boundary Village, Goodrich, Felter Hill, and Flattop Butte. These sites are unique because they contain no surface structures. The only pottery found at Cub Creek sites thus far has been undecorated utilitarian Uinta Grayware with a notable absence of bowl forms. No tradewares have been found at sites attributable to this subphase.

Whiterocks Phase: ca. A.D. 800 to 950.

The Whiterocks (Sub)Phase was named after the archaeological site of Whiterocks Village near the project area. This phase is also known from excavations at the Caldwell Village site (Marwitt 1986). Unlike those of the Cub Creek Phase, Whiterocks Phase archaeological sites contain substantial surface structures of masonry and coursed adobe. They have also yielded surface-decorated Uinta Grayware and tradewares from other Fremont variants and from Anasazi groups (Marwitt 1986).

Post-Formative Period: ca. A.D. 1200 to 1776

The Post-Formative Period is marked by the apparent replacement of the Fremont peoples by a migratory group of Shoshonean/Numic-speaking people from the Southwest. This period also includes the arrival of the direct ancestors of modern-day Ute Indians and their use of the Uinta Basin's resources. Archaeological sites from this period are numerous, but no exceptional Post-Formative or Shoshonean sites are located near the project area.

The Numic Expansion: ca. A.D. 1200 to 1776

The final archaeologically identifiable phase of occupation prior to the historic-ethnographic period is that of the Numic Expansion. This occupation apparently began as Numic/Shoshonean speaking peoples migrated into the northern Utah area and replaced the Fremont Culture. It is not yet clear whether the Fremont abandoned the area prior to the arrival of the Shoshoneans or whether resource competition between the two groups forced the Fremont from the region (Marwitt 1986:171-172). The Uinta Basin is an exception to this problem in that it is known that the Fremont left this portion of Utah roughly 200 years prior to the arrival of the Numic population. The Uinta Basin was occupied by the Ute ancestral group of Numic speakers who arrived about A.D. 1200 to 1300 and continued to reside there into the historic period (Callaway, Janetski, and Stewart 1986).

Little is known about the Shoshonean groups archaeologically, other than the presence of Shoshone pottery and Desert Side-Notched projectile points. Ethnographically, subsistence activities of Shoshonean groups (bands) involved seasonal movements to specific geographic localities as particular food resources became available throughout the year (Steward 1938). The

size and structure of a band fluctuated with changes in the types and availability of resources, but generally included small, family-sized bands through the spring and summer, and large, multi-family groups during the fall and winter months.

HISTORIC CONTEXT

This period is characterized by the initial contact and ensuing relationship between the primary Native American tribe in the Uinta Basin (the Ute) and Europeans and European-Americans. It also includes the developments and changes in the Ute culture and the restriction of the indigenous peoples to reservation lands as a result of influence and pressure by white settlers.

Although the prospect of profitable fur trapping in the Uinta Basin provided the initial attraction for non-Native Americans, it was the presence of the Ute Tribe and the discovery and development of minerals and petroleum resources that provided the impetus for European-American activity in the area. To best understand the series of events that have occurred in the area since the arrival of European-Americans, it is helpful to view the area's history in distinct periods of time associated with significant developments. For the purpose of this overview, the area's history has been divided into six periods as follows: Exploration, Trapping, and Trading (1776-1852); Early Settlement and Colonization (1853-1861); Reservation Period (1862-1868); Secondary Settlement and Early Irrigation (1869-1885); Mineral Development (1886-1904); Land Rush and Water Development (1905-1927); Drought, Depression, and World War II (1928-1945); and Post-War (1945-Present).

Exploration, Trapping, and Trading: 1776 to 1852

This period is marked by the initial exploration of the Uinta Basin by non-Native Americans. It also includes the activities of the early trappers and fur traders, their interactions with the Utes, and the establishment of trading posts throughout the area.

The first forays by Europeans and European-Americans into the Uinta Basin occurred over 200 years ago when the Spanish friars Francisco Atanasio Dominguez and Silvestre Velez de Escalante made their way through the Uinta Basin during their search for an overland route from Sante Fe, New Mexico to the missions of Monterey, California (Jones and MacKay 1980:66). In the ensuing years, Spanish traders entered the Uinta Basin, establishing a system of trade with the Ute Indians living along this corridor (Morgan 1948).

The second major exploratory campaign into the Uinta Basin occurred in 1825 with the journey of General William Henry Ashley. In April of that year, Ashley followed the route of the Green River southward to Desolation Canyon, 50 miles south of the mouth of the Duchesne

River. On his return trip, he retraced his route to the Duchesne River and followed this waterway to where he crossed the Uinta Mountains (Morgan 1964:165, 167). During his explorations of the area, Ashley made copious notes of his experiences and encounters with the Ute in the Basin. It is from these journals that some of the earliest confirmed accounts of Utes living in the area are provided.

In the following years, a number a fur trappers made their way into the area. Some, such as French-Canadian trapper Baptiste Brown, set up trading posts in the Basin to trade with both the Ute Indians and the travelers along the Spanish Trail (Jones and MacKay 1980:108). In 1833, Christopher "Kit" Carson, who had been trapping in the Basin since the late-1820s, established a trading post at the confluence of the Green and White Rivers. Four years later, in 1937, Antoine Robidoux of Taos, New Mexico erected his own trading post on the west fork of the Uinta River. This trading post, which was built from adobe, was known variously as Fort Uintah, Fort Wintey, and Fort Robidoux (Jones and MacKay 1980:66). Shortly after Robidoux established his trading post, a second trade center was set up at the future site of Fort Duchesne by a French trapper known only as Du Chasne (Van Cott 1990:143). Little did Du Chasne know the important role this site would play in the development of the Uinta Basin.

The last significant early exploration of the Uinta Basin occurred between 1844 and 1845. At this time, Captain John C. Fremont made two expeditions into the area. In 1844, Fremont passed through the area on his way north to Utah Valley, stopping at Robidoux's Fort Wintey along the way. The following year, he returned to Utah from Colorado. On this journey, Fremont followed the White River to the present site of Ouray and then ascended the Duchesne River on his way westward (Morgan 1947:135-154).

Early Settlement and Colonization Period: ca. 1853 to 1861

This period is characterized by the first scattered attempts by Mormon pioneers to settle the Uinta Basin. It also includes the reaction of the resident Utes to the arrival of the settlers and the eventual establishment of the Uintah Valley Reservation.

It is not clear exactly when the first settlers made their homes in the Uinta Basin. Unlike most areas of the state at this time, the Uinta Basin was not a primary target of settlement activities for the Mormon pioneers. While large groups of settlers were being sent by Mormon leaders to establish communities throughout the state, none were sent to the Uinta Basin. Settlement in this area occurred slowly and was widely dispersed with individual trappers, ranchers, and cattle rustlers constructing isolated homesteads along the river valleys. The number of settlements established in the Uinta Basin was very limited during this time. Most of those who did settle in the eastern Utah Territory built their homes in the more hospitable environments of the Ashley Valley, Bridger Basin, and northern Daggett County (Jones and MacKay 1980:109-110).

Like most areas in the state of Utah, the Mormon Church played an integral role in the development of the Uinta Basin. However, rather than encouraging settlement of this area, Mormon leaders discouraged it. In 1861, Brigham Young, president of the Mormon Church, sent an exploration party to the Uinta Basin for the purpose of evaluating the area's potential for further settlement by church members. Upon returning from the Basin, the group provided an unfavorable account of the area, stating that the land was unsuitable for further expansion by white settlers (Larsen 1965:64-65). At the same time, hostile raiding by Utes, whose traditional lands were being overtaken by those settlers who did homestead in the harsh Basin environment, began to escalate. This, coupled with the unfavorable report of the exploration party, prompted Young to request that the federal government establish an Indian Reservation in the Uinta Basin to isolate the Utes and other Utah Indians from white settlers. In late-1861, President Abraham Lincoln issued an executive order which established the Uintah Valley Reservation for all Indians in Utah (Polk 1992a:3). Congress did not confirm this order until May 1864. At the same time he created the reservation, Lincoln established the agency headquarters at the trading post set up by Du Chasne. With this official government sanction, the post became known as Fort Duchesne and operated as a point of government control over the reservation (Van Cott 1990:143).

Reservation Period: 1862 to 1868

This period is marked by attempts to force the Utes onto the reservation and efforts of the Utes to resist confinement. It also includes the eventual agreement of the tribe to move to reservation lands.

The desires of the white settlers to contain the Indians on the Uintah Valley Reservation were mitigated by the desires of the Utes and other tribes to remain free to pursue their semi-nomadic lifestyles. In 1865, after much negotiation and hardship, Utah Indian Superintendent Oliver Irish and Chief Tabby of the Ute Tribe signed the Treaty of Spanish Fork under which the Utes agreed to move to the reservation. In exchange, the government agreed to establish farms on the reservation and pay the Utes annual annuities (Clemmer and Stewart 1986:526). Interestingly, Congress never ratified this treaty. Failure by the government to keep their promises to establish the farms as well as unrest among the different bands of Utes forced to cohabitate on the reservation led to a series of uprisings in 1866 known as the Black Hawk War. Many Utes left the reservation at this time to join Chief Black Hawk in his raids on Mormon settlements in the area. The Black Hawk War continued until 1868 at which point Chief Black Hawk agreed to cease hostilities and move onto the Uintah Valley Reservation (Jones and MacKay 1980:111).

Secondary Settlement and Early Irrigation Period: 1869 to 1885

This period is characterized by renewed interest in the Uinta Basin by explorers and settlers. Several small communities were established in the area during this time, and rudimentary canal systems were set up to irrigate the farms of the new settlers.

With hostilities between the Utes and the white settlers under temporary control, settlers and explorers were once again free to travel throughout the Uinta Basin without fear of attack. This reopening of the area led to renewed efforts towards exploration. In late-1868, Pardon Dodds was appointed as the agent of the reservation. At that time, Dodds moved the headquarters of the Uintah Valley Indian Agency from Fort Duchesne to Whiterocks (Jones and MacKay 1980:111). A handful of settlers moved into the area around the Agency headquarters in the ensuing years making Whiterocks the first official white settlement in the Uinta Basin.

With the threat of attacks by bands of Utes no longer a concern, settlers and scientists once again began to explore the largely uncharted region of the Uinta Basin for suitable homestead sites and for mapping purposes. In 1869, John Wesley Powell led a group of government scientists on an exploratory expedition down the Green River to Ouray and then over to the present site of Fort Duchesne. Later that year, Powell led a second expedition down the Green and Colorado Rivers to the Grand Canyon (Roylance 1982:89). Also in 1869, Clarence King, a government surveyor, supervised the survey and mapping of the Uinta Mountains in the northern portion of the current project area. The following year, 1870, F.V. Hayden of the U.S. Department of the Interior led an exploratory party along the Green River and into the Uinta Mountains (Jones and MacKay 1980:111). This period also saw some of the first paleontological interest develop in the Uinta Basin. In 1870, O.C. Marsh lead a group of students from Yale University to search for fossils in the area.

Peace between the Utes and the settlers failed to hold. A series of violent uprisings during the 1870s led to the removal of the Uncompagrhe Ute from Colorado and their relocation to the Uintah Valley Reservation. In an attempt to protect white settlers near the reservation and to ensure confinement of the Ute to their allotted lands, the federal government established a military post at the mouth of Ashley Creek Canyon (Alexander and Arrington 1964:340). The post was dubbed Fort Thornburgh in honor of Major Thomas T. Thornburgh who was killed by the Uncompagrhe in 1879. Construction of the fort began in 1881. However, a lack of government funding and the refusal of settlers to relinquish ownership of sections of land on which the fort was to be built slowed construction considerably. By 1883, the fort remained unfinished and funding and ownership problems continued to plague the builders. In July 1884, the military abandoned the partially completed fort and squatters took over the facility (Alexander and Arrington 1964:342, 343).

Settlement was occurring at a rapid pace in the eastern half of the Uinta Basin. The Ashley Valley had become the site of the most intensive settlement as it encompassed a number of accessible water sources. Pardon Dodds, Indian Agent at Whiterocks, was the first to settle in the Ashley Valley. In 1872, after leaving his post at Whiterocks, Dodds constructed a small

home in the valley. That same year, he constructed the first irrigation ditch from Ashley Creek (Jones and MacKay 1980:73). The construction of this ditch ushered in an era of sporadic, rudimentary water development in the Uinta Basin that continued until the opening of the reservation to settlement in 1905.

By 1880, the Ashley Valley housed a number of small homesteads and settlements. These settlements supported a post office, a sawmill, a flour mill, and the first school for white children in the area (Strahorn 1924:911). Irrigation became all important as farmers attempted to establish crops in the valley. By the early 1880s, several small irrigation ditches had been constructed from Ashley and Brush Creeks. These earthen ditches often had holes cut in the side walls to divert water into the fields; no headgates or other diversionary structures were in use at this time (Stalheim et al 1983). With the rapid growth in this part of the Uinta Basin, state leaders created Uintah County, naming the community of Ashley as the county seat in 1880 (Utah State Historical Society [USHS] 1988:27). The western Uinta Basin, however, did not enjoy such rapid growth. Settlement in this area continued as isolated individual homesteads.

Water development became an increasingly important and tense issue as more and more settlers made their way into the arid Uinta Basin. During the late 1870s, residents of the Heber Valley to the west began illegally diverting water from streams in the Strawberry Valley leaving little of the much needed resource for settlers downstream. In 1879, the Strawberry Canal Company was organized to build a canal for illegally obtaining the water of the upper Strawberry River and conveying it to the fertile fields of the Heber Valley (Stalheim et al 1983). This activity incensed basin residents and touched off a race for water rights in the area. In the Ashley Valley, the demand for improved accessibility to water and for some form of equitably allocating it led to the establishment of two canal companies in 1884, the Ashley Central Irrigation Company (ACIC) and the Ashley Upper Canal Company (AUCC) (Anonymous n.d.). That same year, the ACIC constructed a six mile long gravity canal off of Ashley Creek and into the valley bottom. At the same time, the AUCC built a 12 mile long canal from the mouth of Ashley Canyon.

Mineral Development Period: 1886 to 1904

This period is marked by some of the first discoveries of mineral veins of gilsonite and copper in the Uinta Basin. It also marks the beginning of a long history of influence of the mineral industry on the area.

In 1886, a rich gilsonite vein was discovered in the Uinta Basin by Bert Seaboldt (Jones and MacKay 1980:114). Seaboldt's claim, which was located on the lands of the Uintah Valley Reservation, was the first in a series of discoveries of this ore. Additional discoveries of minable ores prompted the government to re-open sections of the reservation for leasing to white miners and homesteaders. Ute reaction to further encroachment on their allotted lands was unfavorable and rumors of an uprising spread throughout the area. In order to quell the potential violence, President Andrew Johnson sent a military contingent of black soldiers, known as Buffalo

Soldiers, to occupy Fort Duchesne. The soldiers remained at the fort for a period of 12 years (Van Cott 1990:143). One year after Seaboldt's 1886 gilsonite discovery, L.D. Dyer discovered a rich vein of copper in the Little Brush Creek area to the east of modern day Duchesne. With the discoveries of gilsonite and other ores continuing, Congress reclaimed roughly 7,000 acres of reservation lands in 1888 to further develop mining in the area. The opening of this land to whites resulted in the establishment of dozens of mines in the area over the next few years (USHS 1988:27).

Increased activity in the eastern Uinta Basin necessitated the development of a permanent, efficient road by which to transport both travelers and supplies. In the mid-1880s, a road was completed from Price through Nine Mile Canyon to the Duchesne River. The completion of the road to this point provided the opportunity for the establishment of one of the first permanent white settlements near the current project area (Daughters of Utah Pioneers 1948:263). The Duchesne River was a major obstacle for those making the journey along this route to the mines near Vernal and Ashley. In order to overcome the obstacle, settlers erected the first permanent bridge over the waterway just below the confluence of the Duchesne and Lake Fork Rivers in 1887. A trading post and small community were established near the crossing, and the town of Myton became an important rest stop for weary travelers (Van Cott 1990:268).

The exploitation of natural resources continued to develop in the Uinta Basin in the 1890s. In addition to the rich gilsonite and copper veins known to exist throughout the Basin, the area was also suspected to contain oil. In 1891, the first major exploratory commercial oil drilling was undertaken in the Green River area by railroad magnate Simon Bamberger (Jones and MacKay 1980:79). Although these initial efforts were largely unsuccessful, they did support the contention that oil was present in the area. By 1897, large scale drilling efforts were underway in the Uinta Basin. However, profitable production from the oil wells did not come about until the 1940s.

The increasing success of the mining and petroleum industries in the area prompted financiers to explore the possibility of constructing a rail line into the Uinta Basin for transporting the abundant ore. In 1887, the Utah Midland Railroad Company was granted a right-of-way to build a line through the Uintah Valley Reservation (Jones and MacKay 1980:91). However, due to the loss of financial backing, the line was never built. Four years later, in 1891, a route was surveyed for a spur line of the Utah Central Railway. Like the Utah Midland, however, financial difficulties prevented the line from being built. It was not until 1903 that a rail line was finally built into the Basin. One year earlier, a major gilsonite strike at the Black Dragon Mine provided not only sufficient reason but also sufficient funds for constructing a set of tracks through the area. Under the auspices of the General Asphaltum Company, which owned the mine, the Uintah Railroad Company was incorporated in 1903 and construction began immediately (Bender n.d.:23-24). The narrow gauge line was connected to the Denver & Rio Grande Western line near Mack, Colorado.

The battle over water rights between residents of the Uinta Basin and those of the Heber Valley continued through the 1880s and into the 1890s. In 1888, Wasatch County residents helped to construct the McDonald Ditch off of Hobble Creek (Stalheim et al 1983). Two years later, in 1890, they oversaw the building of the Willow Creek Ditch. Both of these canals illegally diverted water from tributaries of the upper Strawberry River into Daniels Creek and on to Wasatch County. During a legislative session in 1892, a bill was introduced into Congress that would have allowed the legal diversion of water from the Uinta Basin, through the reservation, and into Wasatch County (Jones and MacKay 1980:72). Although the bill was not passed, water continued to be bled off of Uinta Basin rivers to irrigate the crops of the Heber Valley.

Water development during the late 1880s and through the 1890s continued to occur on a relatively small scale throughout the Uinta Basin. Nearly all of the irrigation canals and holding ponds in the area had been constructed through private labor and funding. Among such private companies was the Rock Point Canal and Irrigation Company incorporated by residents of the Ashley Valley in 1893 (Stalheim et al 1983). This company was to administer the Rock Point Canal which had been in operation since late 1880. The most formidable obstacle in establishing effective irrigation systems in the area was the presence of the Uintah Indian Reservation. Although white settlers had been diverting water away from the reservation for several years, federal law prohibited them from trespassing on tribal lands to do it. In order to circumvent the law, the settlers had been diverting the water from points just outside the reservation boundaries (Fuller 1978:48). However, in 1899, the Secretary of the Interior granted rights-of-way for the construction and maintenance of "dams, ditches, and canals on or through the Uintah Indian Reservation...for the purpose of diverting and appropriating the waters of the streams...for useful purposes" (Jones and MacKay 1980:73). This act was not only the first step in creating a basin-wide irrigation system but, it was also a hint at the future of encroachment on Indian lands.

The discoveries of rich mineral veins continued through the turn of the century and the push to obtain land in the Basin escalated. In 1902, the Secretary of the Interior was granted the authority to allot certain portions of the Uintah Valley Reservation to Utes and to open other sections for settlement and mineral development by whites. In light of the Secretary's recent decision regarding water rights, the Utes did not look favorably upon such an arrangement and viewed it as further evidence of the government's failure to keep its promises. A number of council meetings were held between Ute tribal leaders and government officials in 1903 to secure the consent of the tribe to the opening of reservation lands to settlement. The talks failed and the Utes refused to agree to the arrangement (O'Neil 1968:317).

Land Rush and Water Development Period: 1905 to 1927

This period is marked by the opening of reservation lands to non-Indians and the subsequent rush by white settlers to homestead this land. It also includes the establishment of several new communities and the first truly intensive efforts towards water development and irrigation in the Uinta Basin.

Unwilling to accept the refusal of the Utes, the federal government continued to pursue the idea of opening the reservation to non-Indians. In 1905, a Presidential proclamation was issued opening all un-allotted lands of the reservation to entry. This action instigated a land rush in the Uinta Basin. As hundreds of settlers and would-be miners rushed to the area, a number of towns and communities were established. Among these were the communities of Duchesne, Altonah, Roosevelt, Bennet, Lapoint, and Tridell (Van Cott 1990). The influx of settlers and the establishment of small communities throughout the area brought about the need for additional roads and transportation corridors. In 1906, the General Asphaltum Company, which had overseen the construction of the Uintah Railroad, incorporated the Uintah Toll Road Company (Jones and MacKay 1980:92). Under this newly formed company, two separate toll roads were built from Jensen to Vernal and Ouray.

The opening of reservation lands brought about a number of significant changes in the use of the Uinta Basin. Among these changes was the creation of the Ashley National Forest by Executive Order of President Theodore Roosevelt on July 1, 1908. The Ashley was developed out of a section of the larger Uintah National Forest created in 1897 (U.S. Department of Agriculture [USDA] n.d.). In 1902, Chief Grazing Officer Albert F. Potter of the U. S. Division of Forestry had recommended that lands in the area north and west of the Strawberry Valley be set aside as a forest reserve. Three years later, in 1905, President Roosevelt had allotted 1,010,000 acres of land in that area as an addition to the Uintah National Forest (Jones and MacKay 1980:85). The 1908 Executive Order removed that section of land from the Uintah National Forest and designated it as the Ashley National Forest.

By 1931, the area included in the Ashley NF had dropped to 979,435 (Department of Public Instruction 1933:43). However, various presidential administrations have added acreage to the Ashley National Forest over the ensuing years enlarging to its current area of 1,313,000 acres (USDA n.d.). Prior to its designation as a wilderness reserve, portions of the Ashley National Forest were the site of mining and prospecting. Although less mineral-laden than many other western ranges, the Uinta Mountains contained small veins of gold and copper. Perhaps the largest of the Ashley Forest mines was the Dyer Mine operated between 1887 and 1900 (Jones and MacKay 1980:80). During that time, this copper mine yielded roughly $3 million worth of ore. Much of the forest area has remained open to date for mineral prospecting and oil and gas exploration (USDA n.d.).

Irrigation canals, ditches, and general systems were indeed important historic landscape features that helped homesteaders and Native Americans feasiblely adopt agrarian lifestyles and settlement systems in Duchesne County (Stalheim et al 1983:2). At least thirty-nine irrigation and water control companies, including the Dry Gulch Irrigation Company, were formed for service in Duchesne County between 1894 and 1953 (Richards, Davis, and Griffin 1966:23-26). As is known at the present, most of these companies were incorporated between 1905 and 1920.

As the number of settlers in the Uinta Basin increased, so did tension and dissatisfaction on the reservation. White settlers were continually diverting water away from Indian farms to supply their own crops. An attempt was made to allay the ill feelings of the Utes with the

establishment of the Uintah Irrigation Project in 1906 (Jones and MacKay 1980:118). Under the auspices of the Uintah Indian Irrigation Company, this project included the construction of 22 canals to service 80,000 acres of reservation lands. The irrigation company was operated with $600,000 in funds paid to the Ute Tribe as part of their compensation for the excession of their lands for settlement (Stalheim et al 1983). Between 1906 and 1935, the Uintah Indian Irrigation Company was responsible, through the use of mostly Ute laborers, for the construction of roughly 162 miles of main canals, 635 miles of laterals, and hundreds of associated structures (Stalheim et al 1983). These systems account for approximately one quarter of all irrigation canals in the Uinta Basin. Unfortunately for the Utes, non-Indian farmers and ranchers bled off much of the water conveyed by these canals before it ever reached the Indian allotments. Such acts prompted Chief Red Cap and several hundred Utes to abandon the Uintah Valley Reservation and join the Sioux in South Dakota.

It is interesting that over half of the irrigation canals constructed in the Uinta Basin were built by the Uintah Indian Irrigation Project and the Dry Gulch Irrigation company (Stalheim et al 1983:2); a similar statistic might be expected in Duchesne County. Between both groups, they had a veritable monopoly on irrigation canal construction with extensive capital for investment and the purchase of pre-manufactured products like headgates and weirs. Often, projects and project management overlapped between both enterprises whereby individuals worked for both companies at the same time and capital came from both. Also, these larger companies were able to use the services of professional surveyors. This, of course, greatly enhanced the directness of water flow through the establishment of straight flow routes and through finding the best possible grade for water flow.

The upside of the monopoly was that a relatively sophisticated irrigation system emerged that continues to have a presence across the Basin and Duchesne County landscape. The overall water conveyance system certainly enabled homesteaders in the early-twentieth-century adapt to the mostly marginal agricultural lands in Duchesne County. Many of these historic canals, though modified through time, continue to allow access to water in the more remote areas of the county.

Canal development continued as the need for irrigation water by newly arrived settlers increased. In 1906, routes were surveyed for a number of canals in the Uinta Basin, including the Holgate or Pioneer Ditch and the Red Cap Canal (Jones and MacKay 1980:119). These canals were built and operated under the auspices of the Duchesne Irrigation Company. That same year, the Whiterocks Irrigation Company and the Dry Gulch Irrigation Company, under Joseph Murdock, were incorporated to supply water to the farms at Tridell, Lapoint, and other basin communities (Stalheim et al 1983). The latter organization, the Dry Gulch Company, soon became the largest privately owned irrigation company in the area. During 1907, the Whiterocks and Dry Gulch Companies were responsible for the construction of several canals including the White Rocks Canal and the U.S. Lake Fork Canal.

Even with the construction of the new canals, water remained at a premium. Intensive irrigation rapidly led to water shortages throughout the Uinta Basin. This was particularly true

of the area south of the Uinta Mountains where the Ute pastured their cattle. It was decided that the only way to provide sufficient water to sustain the new settlements was to establish a large scale water system that would supply water to a vast area. This large scale system took the form of the Strawberry Valley Reclamation Project. Several years earlier, on June 17, 1902, Congress had passed the Newlands Act. This act secured federal support for reclamation projects throughout the arid west (Elliott 1987:177). It was under this act that the Strawberry Valley Reclamation Project was begun. The main purpose of the project was to provide irrigation water to areas south and east of Utah Lake. However, a number of lateral canals and reservoirs were to be constructed along the way that would supply water to the Uinta Basin and other areas. Work on the project began in 1909, on 56,000 acres of reservation land appropriated by the government via the right of eminent domain (Jones and MacKay 1980:121). This project represented the first large-scale diversion of water from the Colorado River Basin to the Great Basin.

Despite the severity of the Uinta Basin environment and with the promise of the Strawberry Valley Project, settlers and homesteaders continued to flock to the area. By 1909, dozens of small communities were scattered throughout the area. Among these were Hayden, Bluebell, Leeton, Mountain Home, Boneta, and Talmage (Jones and MacKay 1980:119-121; Van Cott 1990). In 1910, the U.S. Indian Service instituted a fee patent policy which allowed non-Indians to purchase Ute allotments. Once again, a minor land rush was the result. Two years later, in 1912, Fort Duchesne was abandoned as both a military installation and as the headquarters of the Uintah Reservation Indian Agency. The fort was later established as the tribal headquarters by the resident Ute population (Van Cott 1990:143).

In 1914, the first state road through the Uinta Basin was built via Duchesne to accommodate the growing number of settlers. That same year, with the population reaching sufficiently high numbers, Duchesne County was created and the town of Duchesne was named the county seat (Jones and MacKay 1980:122). Efforts to provide an efficient transportation and freighting route for the Uinta Basin were renewed just prior to 1920. In 1917, the Denver & Rio Grande Western Railroad Company developed plans to construct a rail line through the area. Two years later, in 1919, Simon Bamberger planned to extend his existing line along the Wasatch Front to the communities in the Uinta Basin. However, neither of these lines was ever built (Jones and MacKay 1980:91). Attempts at developing new rail lines in the area ceased in the mid-1920s with the construction of U.S. Highway 40 over Strawberry Summit (Knowlton n.d.:254). The completion of this road in 1926 and the gains in the overland trucking industry all but eliminated efforts to construct additional rail lines into the Basin.

By the late 1910s and early 1920s, water development was in full swing in the Uinta Basin. Riding on the impetus of the Strawberry Valley Reclamation Project, a second major water project, the Moon Lake Project, was started in the Basin. This would prove to be one of the largest reservoir projects to be undertaken in the area. Through the combined efforts of the Dry Gulch Irrigation Company and John D. and LeRoy Dixon of Provo, construction of an earthen dam for the reservoir began in 1918. Within two years, the dam failed and no funding was available to repair it (Stalheim et al 1983). Between 1920 and the mid-1930s, the only work

done on the reservoir involved minor maintenance of the facility so that the canal company could maintain their water storage rights. In 1935, President Franklin D. Roosevelt appropriated $1.5 million in funding to finish and upgrade the reservoir and to construct additional water facilities (Jones and MacKay 1980:125). Among the other facilities completed under the Moon Lake Project in the 1930s were Midview Reservoir and the Duchesne Feeder Canal, both built with Civilian Conservation Corps labor (Stalheim et al 1983).

Over fifty years of pioneer irrigation experience had been gained in other areas of the state and was being put to use in developing the water resources of the Uinta Basin. The presence of the towering Uinta Mountains, which held a heavy snow pack during the winter months, provided an excellent opportunity for increasing the Basin's water supply. Much of the range's water resources was lost to uncontrolled runoff. Recognizing this, developers in the basin began the construction of numerous high mountain reservoirs to trap the runoff and to hold it for future use. The Dry Gulch and Whiterocks Irrigation Companies were responsible for the construction of most of the high mountain lakes built in the 1920s including Papoose, Wigwam, Upper Chain, Lower Chain, Fox, and Crescent Lakes (Jones and MacKay 1980:124; Stalheim et al 1983).

Drought, Depression, and World War II: 1928 to 1945

This period was one of hardship for Uinta Basin residents. It is marked by the dire effects of a statewide drought, a nationwide economic depression, and a worldwide military conflict.

By the late-1920s, residents in the Uinta Basin were beginning to suffer a number of difficulties that severely limited development in the area. Although obtaining water had always been a trying task, a state-wide drought made conditions even more difficult. The intensive irrigation of the previous two decades had rendered a significant portion of the area's soils far too alkaline to be productive. Attempts at reclaiming the soils failed as the area was hit by a water shortage. The agriculture and livestock industries were hit hard as farmers and ranchers were unable to irrigate their crops or to provide water to their sheep and cattle. Further hardships befell Uinta Basin residents with the stock market crash of 1929. As the Great Depression swept the nation, the gilsonite industry in the Basin diminished significantly. A number of mines closed and hundreds of workers lost their jobs (Jones and MacKay 1980:92). The area remained in a state of economic difficulty throughout the 1930s and into the 1940s. It was not until the start of World War II (1941-1945) and the accompanying demand for the mineral resources of the Uinta Basin, that the economy of the area began to recover. The Basin's recovery was further accelerated by a boom in the oil industry. Many of the wells which had been drilled in the previous two decades finally began to produce significant amounts of oil. Improvements in petroleum geology and drilling technology during this time added to the success of oil companies in the area.

Post-War Period: 1946 to Present

This period is characterized by the economic prosperity enjoyed by Uinta Basin residents following World War II. It included the discovery of rich oil deposits in the area and the resulting oil boom which brought about a significant increase in the population of the area.

The Uinta Basin has continued to grow and develop in the years following World War II and water development has remained a pressing issue. In 1949, the Upper Colorado River Basin Compact was negotiated between the states of Colorado, New Mexico, Utah, and Wyoming to insure that water users in each state got their fair share of the precious resource (Jones and MacKay 1980:75). Further developments in this area include the construction of a dam and reservoir at Starvation between 1967 and 1970. By the time the facility was completed, the reservoir was filled to capacity (Department of Natural Resources 1993).

In addition to water development, the petroleum and mining industries have become one of the single most important factors in the success of the area. In 1970, Shell Oil Company drilled an exploratory well into the deeply buried Wasatch Formation of the Uinta Basin (Jones and MacKay 1980:79). This well continues to produce today. The discovery of such a rich oil deposit touched off an oil boom in the area which continues to draw hundreds of workers and millions of dollars into the Basin. Between 1970 and 1980, the population of Duchesne County increased more than 70%. This increase, which is primarily due to the oil boom, represents the most significant population growth ever experienced in the state of Utah (Roylance 1982:572). Despite the significant amount of money produced by the oil industry in the area, the Uinta Basin remains primarily rural.

Recreational development of the Uinta Basin has also been an issue in recent decades. This primarily has been centered around the enhancement of camping and hiking opportunities in the Uinta and Ashley National Forests and on water-based recreation at the various Basin reservoirs. Increased recreational use of the Uinta Mountains led to the establishment of the High Uintas Primitive Area (Wilderness Area) by Congress on September 28, 1984. Encompassing 456,704 acres, this area is the largest protected wilderness area in Utah (USDA 1989).

One of the most significant developments in the Uinta Basin in recent years concerns the argument over legal jurisdiction of Ute tribal lands. The argument, which is being settled in a number of current court cases, debates the point of determining the exact boundaries of tribal lands, and more importantly for the Utes, who has legal jurisdiction over said lands. It is unclear as to what the outcome of these hearings will be and how that outcome will affect future development in the area.

A BRIEF HISTORY OF THE DEVELOPMENT OF IRRIGATION STORAGE AT BROWN DUCK, CLEMENTS, ISLAND, AND KIDNEY LAKES

Historic development in the project area began during the early 20th Century with the exploration of glacial lakes on the southern slopes of the Uinta Mountains. This exploration focused on acquiring data regarding potential lake capacities for storing water in order to enhance late summer irrigation flow within the Uinta Basin. Expanding settlement and the developing agricultural economy within the Uinta Basin made the acquisition and transportation of water very important to the regional economy. The dams that were constructed in the Uinta Mountains were an essential component within the irrigation networks which supplied flow to the agricultural fields of the Uinta Basin. The following provides a brief historic overview of development specific to the high mountain lakes region addressed during the Section 203 Project. For a more thorough treatment of settlement, irrigation development, and the battle for water rights in the Uinta Basin see Fraser (1986) and Fraser, Jurale, and Righter (1989).

Several prominent irrigation companies developed in the Uinta Basin during this period. Companies whose sole purpose was to provide irrigation developed into corporations or cooperatives that traded stocks for labor, including the Dry Gulch Irrigation Company (Dry Gulch) and the Farnsworth Canal and Reservoir Company (Farnsworth). Many of the companies that played central roles in the historic development of these early irrigation systems still survive today. The longevity of these companies emphasizes their importance throughout the economic history of the region.

In 1905, the Dry Gulch Irrigation Company (Dry Gulch) was granted rights to water storage in several of the remote lakes of the Uinta Mountains (Fraser et al. 1989:62). Among these was Clements Lake, a remote body of water pooled behind a terminal moraine on the Lake Fork drainage. Although Dry Gulch was granted the first rights to storage within the Lake Fork Drainage, it was not until more than a decade later that Dry Gulch began to actually develop its claims. In 1915, Farnsworth began to demonstrate interest in the area, initiating the first wave of development at the lakes.

The Farnsworth Canal and Reservoir Company (Farnsworth), incorporated in 1908, is one of the oldest extant irrigation companies in the Uinta Basin (Fraser et al. 1989:62). Farnsworth, following the lead of the larger Dry Gulch, petitioned the Utah State Engineer's Office for irrigation water storage rights on the Lake Fork Drainage in 1915 (Fraser et al. 1989:62, 63). The company proposed building dams at Brown Duck, Kidney, and Island lakes. As a competitor, Farnsworth's claim had potential to infringe upon Dry Gulch's claims at Clements Lake. By April 1916, Farnsworth was granted rights to store 324, 435, and 851.2 acre-feet of water at the three lakes with the understanding that all construction be completed by November 1, 1918 (Fraser et al. 1989:62). Upon demonstrating that Kidney Lake could provide more water than anticipated, Farnsworth resubmitted the proposal in January 1917 requesting an additional 1500 acre-feet of storage. The following year, Farnsworth again re-filed for an additional 1700

acre-feet of water, pleading for an extension past the November 1, 1918 deadline (Fraser et al. 1989:63).

In 1916, the Farnsworth crew began horse packing construction supplies up freshly blazed trails to the three lakes (Fraser et al. 1989:65). Actual construction was initiated in 1917 (Fraser et al. 1989:66, 68). Blasting of the rocky moraine deposits required many caps and sticks of dynamite. Barrow pits were excavated, and linear trenches were dug approximately 10 ft below the natural lake levels for the placement of the clay foundations at each dam. Concrete mix, corrugated metal pipe, canal gates, excavation equipment, tools, rebar, food, and supplies all had to be brought in by pack horses and men. Steep terrain complicated the transport of heavy, bulky, and explosive materials. The bulk of heavy building materials was transported to the dam sites during winter months when sturdy sleds or sleighs could be used (Fraser et al. 1989:67, 71).

By November 1919, small earthen dams were in place at the outlets of Brown Duck, Kidney, and Island lakes. The dams were completed at the tail end of a two-year drought that threatened losses on over 50,000 acres of agricultural fields (Fraser et al. 1989:62). Although the dams contributed to the irrigation requirements of the region, the capacity of the Lake Fork Drainage was viewed as insufficient for the growing number of acres cultivated in the valleys below. The call for more water was met by further irrigation water storage projects along adjacent drainage systems. Nevertheless, Farnsworth's achievements were pioneering efforts in the development of irrigation in Northeastern Utah.

In 1919, Dry Gulch initiated efforts to prove its claim at Clements Lake. The proposed dam was to be the largest on the Lake Fork Drainage, enhancing the storage capacity of the existing system by nearly 650 acre-foot at maximum capacity (Fraser et al. 1989:72). In 1921, the United States Forest Service granted Dry Gulch a special use permit for the development of a dam for the storage of irrigation water at Clements Lake. This permit authorized Dry Gulch to utilize up to 81 acres of Clements Lake surface (Fraser et al. 1989:71).

In order to prove their claim, Dry Gulch built a small log dam across the natural outlet on the east end of Clements Lake (Fraser et al. 1989:71, 72). With the proof of claim, Dry Gulch introduced the highest reservoired lake to the existing Lake Fork Drainage water storage system. The small dam proved sufficient only to secure Dry Gulch's interests in the drainage. A larger, formal dam would have to be built in order to utilize Clements Lake to its fullest storage potential.

In 1926, Dry Gulch contracted engineer Louis Galloway to survey the proposed Clements Dam location and plan a pack trail from the Moon Lake trailhead to the dam site (Fraser et al. 1989:71). Galloway's assistant, Pete Wall, received the contract to construct the dam at Clements Lake. Dry Gulch faced the same challenges met by the Farnsworth crews in undertaking a large scale construction project in the high Uintas. Like the Farnsworth crews, prior to snowfall, Wall used pack horses to bring equipment and supplies to the lake. After snow-pack was established sleds were the preferred method of transporting goods and equipment

(Fraser et al. 1989:67, 71). The Clements Lake Dam built by Dry Gulch is very similar to those built by Farnsworth at Brown Duck, Kidney, and Island lakes. Dry Gulch followed the same strategy for blasting, excavation, foundation placement, and gathering of barrow materials. As a result, the Clements Lake Dam appears very similar in form to the other clay core, earth and stone dams of the region. Improvements made to the Farnsworth design include the patterned placement of tabular stone facing as armorization to the upstream face of the dam and construction of an overflow spillway directing overflow well away from the main dam structure.

The dams of the Lake Fork Drainage system were relatively well maintained throughout their history. Modern outlet works (1977) have replaced historic log crib structures, spillways were improved, and debris was cleared from the upstream faces of the dams. Repairs were completed as required to maintain the operation of each dam.

In 1967, the dam at Brown Duck Lake was partially breached (Fraser and Jurale 1985a). Its function as an agricultural water retention feature was suspended until approximately 1977. In this year, improvements to the dam outlets of the Lake Fork system were made to upgrade the existing facilities. These improvements and repairs returned Brown Duck Lake Dam to operational status.

Today, development of more efficient methods of irrigation, including pressurized systems, has reduced regional dependence upon water storage for irrigation use in the lakes of the high Uintas. As a result, proposals have been made to stabilize lakes previously used for irrigation storage purposes. Through stabilization, efforts would be made to return water levels within these lakes to natural levels. It is proposed that stabilization will enhance recreational values within the High Uintas Wilderness Area, improve water quality and fish habitat, and eliminate impacts to the wilderness area associated with maintenance operations at the dam sites (Central Utah Water Conservancy District 1996:S-3).

RESULTS

A cultural resource inventory was conducted at Brown Duck, Kidney, Island, and Clements lakes as part of the Section 203 EA for the High Mountain Lake Stabilization Project. A total of 22 isolated finds (IF-1 through IF-22), four historic dams (HAER Numbers 42-UT-B, 42-UT-C, 42-UT-I and 42-UT-J) and eight prehistoric lithic scatters (42Dc1339 through 42Dc1346) were identified during the survey (Figure 3).

Isolated Finds

A total of 22 isolated finds (IF-1 through IF-22) were identified during the current inventory. Five of these are located at Island Lake (IF-1 through IF-5), fifteen are located at

Kidney Lake (IF-6 through 20) and two are at Brown Duck Lake (IF-21 and IF-22). No isolated finds were identified at Clements Lake. Following are descriptions of each:

IF-1

IF-1, located on [redacted] Island Lake, is a light brown quartzite secondary flake. The artifact was identified [redacted] above the visible high water line of Island Lake. The flake measures 3.8 cm long by 1.7 cm wide by 0.4 cm thick. No other cultural materials were noted at this location.

IF-2

IF-2, located on [redacted] Island Lake, is a cream colored chert secondary flake with brown streaks. The artifact was identified [redacted] below the visible high water line of Island Lake. The flake measures 2.8 cm long by 1.8 cm wide by 0.4 cm thick. No other cultural materials were noted at this location.

IF-3

IF-3, located on [redacted] Island Lake, is a white quartzite secondary flake. The artifact was identified [redacted] above the visible high water line of Island Lake. The flake measures 1.3 cm long by 1.1 cm wide by 0.03 cm thick. No other cultural materials were noted at this location.

IF-4

IF-4, located [redacted] Island Lake, is a diagnostic basal fragment of a rectangular amethyst glass bottle. The artifact was identified in [redacted] above the visible high water line of Island Lake. The bottle fragment possesses a maker's mark consisting of an "I" set over an "8", centered within a diamond. The number "3" is set to the left and slightly above the diamond. This mark appears to be a derivation of Illinois Glass Company maker's marks used between 1900 and 1929 (Toulouse1972:264-268). Amethyst glass potentially dates the isolate prior to 1917 when manganese was generally eliminated from glass making (IMACS 1992:472[10]). No other cultural materials were noted at this location.

IF-5

IF-5, located on [redacted] Island Lake, is an obsidian projectile point midsection fragment. The artifact was identified [redacted]

Figure 3. Location of sites 42Dc1339 through 42Dc1346, UT-42-B, UT-42-C, UT-42-I, UT-42-J, and isolated artifacts IF-1 through IF-22 identified during the survey. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).

of Island Lake. The projectile point fragment measures 2.17 cm long by 1.80 cm wide by 0.53 cm thick and possesses evidence of extensive reworking prior to its fracture. This projectile point midsection is too heavily fragmented for use as an accurate temporal indicator. No other cultural materials were noted at this location.

IF-6

IF-6, located on [redacted] Kidney Lake, consists of one chalcedony projectile point, two white chert secondary flakes, and one chalcedony secondary flake. The artifacts were identified [redacted] below the seasonal high water line of Kidney Lake. The projectile point measures 2.5 cm long by 1.1 cm wide by 0.5 cm thick and appears to have been reworked. It appears to be most closely related in form to projectile points associated with the Rose Springs Series of the Desert Complex (4000 to 250 B.P.) as defined for the Great Basin Culture Area (Drager and Ireland 1983:594). The surface area of each of the three flakes measures approximately 1 cm². No other cultural materials were noted at this location.

IF-7

IF-7, located on [redacted] Kidney Lake, is a tannish-grey chert projectile point basal fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 1.9 cm long (broken) by 1.95 cm wide by 0.48 cm thick, and is heavily ground along its basal margin. It appears to be most closely related in form to projectile points associated with the Black Rock-Humboldt Series (5000 to 3000 B.P.) as defined for the Great Basin Culture Area (Drager and Ireland 1983:593). No other cultural materials were noted at this location.

IF-8

IF-8, located on [redacted] Kidney Lake, is a white chert projectile point basal fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 0.8 cm long (broken) by 2.0 cm wide by 0.3 cm thick. It appears to be most closely related in form to projectile points associated with the Black Rock-Humboldt Series (5000 to 3000 B.P.) as defined for the Great Basin Culture Area (Drager and Ireland 1983:593). No other cultural materials were noted at this location.

IF-9

IF-9, located on [redacted] Kidney Lake, is a white chert primary/decortication flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 4.2 cm long by 2.9 cm wide by 1.3 cm thick. No other cultural materials were noted at this location.

IF-10

IF-10, located on [redacted] Kidney Lake, is large tan quartzite knife fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 8.3 cm long (broken) by 3.5 cm wide by 0.6 cm thick. One edge is curved, and the other is straight. No other cultural materials were noted at this location.

IF-11

IF-11, located on [redacted] Kidney Lake, is a historic quarter section marker. The artifact was identified at the visible high water line of Kidney Lake. It consists of a single rock with the inscription "W¼C" pecked into its face. Stone cadastral markers were replaced by metal posts in 1910 under the District Survey System (Bureau of Land Management 1986:3). No other cultural materials were noted at this location.

IF-12

IF-12, located on [redacted] Kidney Lake, is a fragment of chalcedony core shatter. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 2.6 cm by 2.3 cm by 0.6 cm. No other cultural materials were noted at this location.

IF-13

IF-13, located on [redacted] Kidney Lake, consists of three purple quartzite secondary flakes. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

IF-14

IF-14, located on [redacted] Kidney Lake, is a greyish-tan side-notched projectile point basal fragment that was recycled for use as a graver. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 4.2 cm long by 2.9 cm wide by 1.3 cm thick. It appears to be most closely related in form to projectile points identified as the Elko-Side-notched type of the Elko-Bitterroot Series (10,000-500 B.P.) as defined for the Great Basin Culture Area (Drager and Ireland 1983:591). No other cultural materials were noted at this location.

IF-15

IF-15, located on [redacted] Kidney Lake, consists of one primary and two secondary flakes of white chert, one piece of white chert shatter, and one

white quartzite tertiary flake. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

IF-16

IF-16, located on [redacted] Kidney Lake, is a cream colored chert projectile point fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 3.0 cm long (broken) by 2.0 cm wide by 0.6 cm thick and possesses some evidence of hafting. It appears most closely related in form to projectile points identified as belonging to the Pinto Square-shoulder type of the Pinto Basin Series (6000 to 3000 B.P.) as identified for the Great Basin Culture Area (Drager and Ireland 1983:592). No other cultural materials were noted at this location.

IF-17

IF-17, located on [redacted] Kidney Lake, is a chalcedony tertiary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 0.5 cm long by 0.2 cm wide by 0.05 cm thick. No other cultural materials were noted at this location.

IF-18

IF-18, located on [redacted] Kidney Lake, consists of one chalcedony primary/decortication flake and one chalcedony tertiary flake. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. The primary flake measures approximately 5 cm in diameter. The tertiary flake measures approximately 0.5 cm in diameter. No other cultural materials were noted at this location.

IF-19

IF-19, located on [redacted] Kidney Lake, is a grey chert secondary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures approximately 1.5 cm². No other cultural materials were noted at this location.

IF-20

IF-20, located on [redacted] Kidney Lake, consists of two grey quartzite and three white and grey chert primary flakes, one white chert secondary flake and one chalcedony tertiary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

IF-21

IF-21, located on [redacted] Brown Duck Lake, is a white quartzite secondary flake. The artifact was identified [redacted] above the visible high water line of Brown Duck Lake. It measures approximately 1.5 cm². No other cultural materials were noted at this location.

IF-22

IF-22, located on [redacted] Brown Duck Lake, is a single anthropomorphic rock art figure on a large slab boulder. The glyph was identified [redacted] below the visible high water line of Brown Duck Lake. The glyph measures approximately 16 cm tall by 6 cm wide and consists of a figure in profile facing east. It is faint due to heavy repatination. The character in the glyph is hunched slightly, with multiple rays extending back from its head. It has two well-defined legs that are gently bent, and has a single arm pointing downward in front of its body. It appears to be related in form to kokopelli (flute player) figures that have been identified at other sites in the Great Basin Culture Area. No other cultural materials were noted at this location.

Historic Dams

The dams located at Brown Duck (HAER UT-42-B), Clements (HAER UT-42-C), Island (UT-42-I) and Kidney (HAER UT-42-J) lakes were revisited during the current project for the purposes of providing updated documentation for each. Features and structures associated with the dams were included as part of this documentation. Following are descriptions of each:

HAER Number 42-UT-B: Brown Duck Lake Dam

The Brown Duck Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985a). It is located on the east end of Brown Duck Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 268 acre-feet of water in storage, raising the levels of this natural lake approximately 10 to 15 ft (Fraser et al. 1989:65; Fraser and Jurale 1985a). Because it is the lowest dam in the Lake Fork Drainage, the Brown Duck Dam also serves as the final check regulating flow of stored water into the irrigation systems below. Two checkdams, a log privy foundation, and a concrete pad are also associated with the dam.

Overall, the Brown Duck Lake Dam is 220 ft long (north-south). It measures 25 to 30 ft thick at the base, stands 15 ft tall, and is 12 to 15 ft wide at its top. Its foundation is excavated to a depth of 9 ft below the natural high water level of the lake. The outlet pipe consists of a 3 ft diameter corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the upstream opening of the outlet pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The gate slides over the mouth of the outlet

pipe at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. Inscribed on the pedestal is the date "10-9-77", suggesting that the intake and intake controls were replaced in 1977. A padlocked chain with 1½ in. links wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 12 ft long, 1 ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of plywood and 8 in. milled lumber. Several illegible inscriptions are present in the headwall, however three reading "Johny Murray," "Greg S.," and "GURYF(?) "77" were noted along the top of the headwall. The inscription "77" occurs in three additional places among the illegible inscriptions, suggesting that the outlet was replaced at the approximate time the outlet pipe and controls were upgraded to the existing Waterman system. Water exits the culvert and enters Brown Duck Creek, a rocky stream that flows eastward. The banks of Brown Duck Creek are armorized with local, dry-coursed cobble-to-boulder sized stones. Approximately 70 ft downstream from the outlet are six large fragments of discarded concrete intermixed with the local stone shoring, presumably representing the refuse from the outlet features replaced during the 1977 improvements to the Brown Duck Lake Dam.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the northern corner of the dam and discharging it downstream from the dam outlet. The spillway intake measures 50 ft wide and is approximately 8 ft below the surrounding ground surface. It is located approximately 180 ft north of the upstream (west) end of the dam outlet. The spillway is aligned approximately southwest, and carries overflow 200 ft to Brown Duck Creek approximately 75 ft downstream from the dam outlet. A small, dry coursed check dam located near the spillway outlet reduces the energy of the discharge before allowing it to enter the creek's channel. At its outlet the spillway measures approximately 12 ft wide by 10 ft deep.

Approximately 180 ft downstream from the dam outlet is a check dam comprised of axe-notched logs. Each log averages 1 ft in diameter, and all range in length from 2 to over 20 ft. Approximately 25 percent of the logs possess large, 6 in.-long nails at the notches. This accumulation of debris acts as a check dam, slowing water after it exits the dam, and likely represents materials discarded from the original dam structure.

A log privy (outhouse) foundation adapted for winter use during deep snowfall was identified on Brown Duck Creek approximately 500 ft downstream from the dam. The privy foundation is constructed of dressed and notched logs stacked seven courses high. The logs

range in size from 6 to 9 in. in diameter. These are roughly axe-dressed with both square and v-notches. The coursed logs are secured at the notches with 6 in. long nails. No chinking is present, leaving 1 in. gaps between each course. The foundation is footed on a slight slope. The foundation stands approximately 6 ft tall on the west side and approximately 5 ft tall on the north side. The privy's interior measures 50 in. square. The north face of the structure possesses an axe-hewn step centered on the 5th log from the bottom to provide access when snow is not so deep. Recent subsurface disturbance centered on the privy's vault is suggested by churned earth and the presence of an inexpensive, hollow-handled aluminum camping shovel. This suggests either looting of the privy's vault or modern reclamation of the vault for its historic purpose.

A small earthen berm was identified adjacent to the privy. The berm extends from the southern bank of Brown Duck Creek into the watercourse approximately 50 ft. Rocks piled on either bank and jumbled logs combine with the berm to form a second check dam located 320 ft downstream from the larger aforementioned check dam.

A concrete pad was identified 150 ft east of the downstream (eastern) end of the dam outlet. The concrete pad measures 11½ ft (north-south)-by-11½ ft (east west). It bears the inscription "JED LA?ENCE 10/19/41". The concrete pad likely served as a foundation for a large wall tent and may be associated with maintenance of the Brown Duck Lake Dam.

HAER Number 42-UT-C: Clements Lake Dam

The Clements Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser and Jurale 1985b). It is located on the east end of Clements Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 649 acre-feet of water in storage, raising the levels of this natural lake approximately 10 ft (Fraser et al. 1989:66; Fraser and Jurale 1985b; Pettengill 1996:14). Four barrow areas and a segment of reinforced shoreline around the eastern margin of Clements Lake were also noted in association with the Clements Lake Dam.

Overall, the Clements Lake Dam is 540 ft long (north-south). It measures 70 ft thick at the base, stands 20 ft tall, and is 10 ft wide at its top, and incorporates greater than 48,000 cubic yards of fill. The western (upstream) face of the dam is armorized with evenly spaced, local tabular stone blocks averaging 2 ft square. The eastern (downstream) face of the dam is covered with loose boulders and cobbles of local stone and logs that have been thrown over the top of the dam to prevent accumulation on the upstream face. The outlet pipe consists of a 2 ft diameter corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the opening of the outlet pipe. Flow into the outlet pipe is controlled by a 24 in. canal gate. Heavy siltation on the gate's face precludes reading, but it appears to be similar to a Waterman Model C20 Canal Gate. The gate slides over the mouth of the outlet pipe at a 45 degree slant on a frame (stem guide) of 1½ in. angle iron bolted onto a concrete pad or base measuring 4½ ft wide by 8 ft long. The canal gate is lifted by a 30 ft. long by 1 in. diameter threaded bolt (stem) turned by a 24 in. diameter hollow cast iron, six-spoke handwheel, which is located at the top of the dam. The handwheel is set into a partially sub-surface, board-formed concrete box

measuring 5 ft 6 in. long (east-west) by 4 ft wide (north-south) and 4 ft deep. An 18 in. by 18 in. concrete step is located inside the box at the eastern end, providing access to the handwheel. Inscriptions on the northern, eastern, and southern edges of the box include "Bruce Goodrich" (cursive), "BRUCE GOODRICH" (printed), "Billie Ralphs" (printed), "9/16/52", "B.G." (printed), "B.R." (printed), "P.M." (printed), "L.M." (printed), "Bruce G." (printed), "PERRY MAXFIELD" (printed) and "Billie Ralphs" (printed). The inscriptions suggest that the outlet controls were upgraded in 1952 by as few as four individual workers, or several generations of workers bearing inherited names or identical initials.

The downstream (eastern) end of the outlet pipe is set into a concrete head wall located on the eastern (downstream) toe of the dam. The head wall measures 3 ft 6 in. long by 8¼ in. thick and stands 4 ft 6 in. tall. Two 3 ft-long wing walls extend at 90 degrees (east) from the head wall face. It is constructed of board-formed concrete poured into forms constructed of 10 in. milled lumber. Several illegible inscriptions are present in the headwall, however seven reading "FI" (printed), "Earl B." (cursive), "Sam J." (scrolled print), "Sid J." (scrolled print), "J.R.A." (printed), "S.C." (printed) and "G.C." (printed) were noted along the top of the head wall. No dates were present among the inscriptions, but the overall appearance of the concrete employed in the manufacture of the head wall suggests that it predates the handwheel box by at least 10 years. Water exits the outlet pipe and enters Brown Duck Creek, a rocky stream that flows eastward.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the southern corner of the dam and discharging it downstream from the dam outlet. The spillway intake measures 15 ft wide and is approximately 8 ft below the surrounding ground surface. It is located approximately 220 ft south of the upstream (western) mouth of the dam's outlet pipe. The spillway is aligned approximately northwest, and carries overflow over 500 ft into the forest before disappearing into a meandering web of braided streams and diffuse channels up slope from the southern bank of Clements Creek.

The shoreline of Clements Lake has been reinforced with a 200 ft long by 5 ft wide log and stone armorization feature located approximately 80 ft from the western (upstream) face of the Clements Lake Dam. The feature stands approximately 1 ft high. The logs range from 8 to 20 ft long and from 6 to 12 in. in diameter. Random axe-hewn saddle notches suggest that the logs have been recycled from some earlier structural frame. Local boulders piled around the logs hold them in place.

HAER Number 42-UT-I: Island Lake Dam

The Island Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985c). It is located on the east end of Island Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 66 surface-acres of water in storage, raising the levels of this natural lake approximately 15 ft (Fraser et al. 1989:65; Fraser and Jurale 1985c). No features, structures, or artifacts associated with the dam were identified in the immediate vicinity.

Overall, the Island Lake Dam is 300 ft long (northeast-southwest). It measures 70 ft thick at the base, stands 15 tall, and is 12 to 15 ft wide at its top. The outlet pipe is a 3 ft diameter corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the outlet pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The Waterman gate appears to have replaced an earlier gate. A fragmented Armco Model 101 Light Duty Slide Gate was noted near the mouth of the outlet pipe. The existing canal gate slides over the outlet opening at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. Inscribed on the pedestal are the marks "Gary Fieldsted, Oct. 8, 1977 & Rick Miles," suggesting that the original outlet pipe, gate, and controls were replaced in 1977. A padlocked chain with 1½ in. links wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 9 ft 6 in. long by 1 ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of 8 in. milled lumber held in place with ¼ in. smooth wire snap ties. The inscription "RON 10-9-77" was noted on the top edge of the headwall, suggesting that the outlet was replaced at the same time the outlet gate controls were upgraded to the existing Waterman system. Water exits the pipe and enters Island Creek, a rocky stream that flows eastward. The banks of the creek are armorized with local, dry-coursed stone of cobble-to-boulder size for a distance of approximately 75 ft.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the southern corner of the dam and discharging it downstream from the dam outlet. The spillway channel measures approximately 10 ft wide and is situated approximately 5 ft below the surrounding ground surface. It mouth of the spillway is located approximately 125 ft south of the dam's upstream outlet. The spillway is aligned approximately east-west, and carries overflow 175 ft to a point on Brown Duck Creek approximately 75 ft downstream from the dam outlet.

HAER Number 42-UT-J: Kidney Lake Dam

The Kidney Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985d). It is located on the northeast corner of Kidney Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 190 surface-acres of water in storage, raising the levels of this natural lake approximately 20 ft (Pettingill 1996:16). Three small check dams were identified downstream

from the dam's outlet. No additional features, no structures and no artifacts associated with the dam were identified in the immediate vicinity.

The Kidney Lake Dam is 775 ft long (north-south). It measures 75 ft. thick at the base, stands 15 ft tall, and is 12 to15 ft wide at its top. Its foundation is excavated to a depth of 10 ft below the natural high water level of the lake. The outlet pipe is a 3 ft diameter corrugated metal pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The existing canal gate slides over the outlet opening at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. A padlocked chain with 1½ in. links wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 10 ft long, 1 ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of 8 in. milled lumber and plywood. The inscription "10-4-77" was noted on the top edge of the headwall, suggesting that the original log outlet works were replaced on that date. Additional inscriptions, if present, are obscured by rock and debris fall from the dam's sloped eastern face. Water exits the pipe and enters Brown Duck Creek, a rocky stream that flows eastward. The banks of the creek are armorized with local, dry-coursed cobble-to-boulder sized stone for a distance of approximately 100 ft.

An infilled spillway is located on the southern end of the dam. This spillway was one of two installed at the dam in 1931 (Fraser et al. 1989:83). The second spillway was not identified during the current recordation of the Kidney Lake Dam.

A total of three small check dams were identified downstream from the dam's outlet. Each is comprised of small, dry laid local boulders aligned in a linear manner between the north and south banks of Brown Duck Creek. The first, located 40 ft downstream from the dam outlet, measures 12 ft wide by 1 ft thick and 1 ft tall. The second check dam, located 60 ft downstream from the dam outlet, measures 14 ft wide by 1 ft thick and 1 ft tall. The third check dam, located 150 ft downstream from the dam outlet, measures 15 ft wide by 2 ft thick and 2 ft tall.

Prehistoric Lithic Scatters

A total of eight prehistoric lithic scatters were identified during the current inventory (42Dc1339 through 42Dc1346). Of these, five are located at Island Lake (42Dc1339 through 42Dc1343) and three are located at Kidney Lake (42Dc1344 through 42Dc1346). No additional archaeological sites were identified during this inventory. Following are descriptions of each site:

Site 42Dc1339

This site, located at [redacted] Island Lake, is a small, low density lithic scatter[redacted]. The site consists of greater than 500 primary, secondary, and tertiary flakes and shatter debris of fine-grained reddish-purple quartzite, olive-tan quartzite, chalcedony, and tiger chert.

The artifact assemblage is dominated by tertiary flakes (70%). Secondary flakes are less frequent (25%), and primary flakes are relatively rare (5%). Shatter comprises less than 1% of the overall lithic assemblage of this site. The lithic debitage observed at this site appears to be indicative of secondary and tertiary pressure retouch, resulting in greater than 300 fragments of lithic debris smaller than 2 mm in surface area. Bifacial thinning flakes with well-developed

ground or abraded platforms occur with less frequency. Most of these range in size between 1 and 2 cm^2. Larger secondary and primary flakes and shatter debris comprise the smallest fraction of the site assemblage

One possible unifacial tool (U-1) and one concentration of lithic debris (LC-1) were also identified. U-1 measures 5.2 cm long by 5.1 cm wide by 1.6 cm thick. It is manufactured from a large, slightly curved primary/decortication flake of olive-grey quartzite. Approximately 20 small primary and secondary retouch flakes have been removed from the left and right margins of the dorsal (cortical) face of the flake. LC-1 is a concentration of chert debitage comprised of secondary flakes ranging in size from 1 to 3 cm^2. It measures approximately 30 cm (north-south) by 40 cm (east-west) and possesses a density of approximately 40 flakes per m^2.

The sediments of the site are sandy and rocky, and have been eroded extensively by high water/wave action along the modern shores of the impounded Island Lake. No diagnostic artifacts or features were identified at this site. This site appears to lack potential for subsurface cultural materials.

Site 42Dc1340

This site, located on [redacted] Island Lake, is a small, low density lithic scatter[redacted]. The site consists of approximately 450 to 500 primary, secondary, and tertiary flakes and shatter debris of white chert, chalcedony, reddish-purple quartzite, tan chert, olive-tan quartzite, and

red/white chert or chalcedony, and medium-grained white quartzite with regular pepper-like speckling. The artifact assemblage is dominated by secondary flakes (65%). Tertiary flakes are less frequent (20%), but occur in small and diffuse densities across the site. Primary flakes (10%) and shatter debris (5%) are rare. The lithic debitage observed at this site appears to be indicative of a full reduction sequence for chert materials in addition to secondary and tertiary retooling of quartzite implements. Most of the chert and chalcedony debris observed at this site appears as primary/decortication flakes. Secondary flakes of chert and chalcedony are less common and bifacial thinning flakes occur sporadically. Approximately 90% of the core shatter debris is white chert, with the remainder of the shatter observed being of quartzite. Most of the quartzite debris occurs as small secondary and tertiary flakes smaller than 1.5 cm².

Two bifaces (B-1 and B-2), one core (C-1), and one projectile point (P-1) were also identified. B-1 is a transparent chalcedony biface tip fragment measuring 2.8 cm long by 2.3 cm wide by 0.4 cm thick. B-2 is a tan chert biface fragment measuring 6.2 cm long by 3.1 cm wide by 1.2 cm thick. C-1 is a medial fragment of a white quartzite core measuring 3.6 cm by 1.3 cm by 1.3 cm. Five flakes have been struck from its margin, leaving approximately 45% of its original cortex. P-1 is a Side-notched projectile point constructed of medium-grained white quartzite with regular pepper-like speckling. It is well-formed with regular margins and possesses a slight lobe centered intentionally at its base. Its left tang is absent. This projectile point resembles most closely those identified as the Elko Side-notched type affiliated with the Terminal Paleo-Indian/Archaic (10,000 to 500 B.P.) of the Great Basin (Drager and Ireland 1986:591). P-1 measures 2.6 cm long by 2.2 cm wide by 0.4 cm thick.

The sediments of the site are sandy and rocky, and have been eroded extensively by high water/wave action along the modern shores of the impounded Island Lake. No well-defined concentrations of lithic materials and no features were identified at this site. Some potential for subsurface cultural materials may exist along the northern margin of the site.

Site 42Dc1341

This site, located on [redacted] Island Lake within the seasonal innundation zone, is a medium-sized scatter of lithic debris and diagnostic artifacts [redacted]. The site consists of greater than 500 primary, secondary, and tertiary flakes and shatter of white chert, pink/white chert, obsidian, reddish-purple quartzite, grey chert, olive-tan chert, and red chert. One core (C-1) and four projectile points (P-1 through P-4) were also identified at this site. The artifact assemblage is dominated by tertiary flakes (45%). Secondary flakes are less dominant (30%), and primary/decortication flakes are even less common (20%). Shatter comprises less than 5% of the overall lithic assemblage. Overall, the lithic debitage observed at this site appears to be indicative of bifacial thinning and secondary retouch of chert and quartzite materials, a smaller percentage of debitage indicating primary reduction of chert and quartzite, and a minute percentage of primary reduction of obsidian. One 80 cm² lithic concentration (LC-1) contained 16 very small (0.5 to 1.0 cm²) primary/decortication and secondary flakes of obsidian and one grey chert primary flake. Obsidian debitage was not observed anywhere else on this site.

C-1 is a white chert core measuring 3.0 cm by 2.2 cm by 1.8 cm. It retains approximately 13% of its original cortex with greater than five flakes removed randomly from around its surface. P-1 is a large red/white mossy chert or chalcedony side-notched projectile point basal and medial fragment measuring (broken) 4.0 cm long by 3.0 cm wide by 0.6 cm thick. Its tip has been snapped by a bending fracture. It possesses a slightly expanding stem with a basal concavity. Fine, alternating double-diagonal or chevron tertiary retouch has created a pronounced serration along both of the point's blade margins. P-2 is a possible projectile point base or medial fragment manufactured of olive-tan chert. It measures (broken) 3.4 cm long by 2.1 cm wide by 2.0 cm thick and appears lanceolate in form. P-3 is a heavily reworked chalcedony side-notched projectile point fragment lacking its left basal ear. P-3 measures 2.2 cm long by 1.5 cm wide by .3 cm thick. P-4 is a brown banded pink chert projectile point medial and tip fragment. It appears to be a fragment of a medium-sized, side-notched projectile point measuring 2.9 cm long (broken) by 2.2 cm wide by 0.4 cm thick. P-1, P-3, and P-4 resemble most closely projectile points identified as belonging to the Elko Side-notched subtype that is affiliated with the Terminal Paleo-Indian Period through the Archaic Period (10,000 to 500 B.P.) of the Great Basin (Drager and Ireland 1986:591). P-2 is too heavily fragmented to be of use as an accurate temporal marker.

No additional artifacts or artifact concentrations and no features were identified. The sediments of this site are sandy and are protected by exposed bedrock. This site appears to possess some potential for intact subsurface cultural materials.

Site 42Dc1342

This site, located on [redacted] Island Lake, is a small, low-density lithic scatter [redacted]. The site consists of approximately 100 to 150 primary, secondary, and tertiary flakes of white chert/chalcedony, chalcedony, olive-tan mudstone, grey chert, yellow chert, pink/white chert, and grey quartzite. Approximately 80% of the entire artifact assemblage consists of secondary flakes of all lithic materials combined. Primary flakes are less common (15%) and tertiary flakes are rare (5%). Among the white chert/chalcedony debitage, primary/decortication flakes are the dominant type (65%), with primary and secondary flakes being somewhat less common (30%) and bifacial thinning flakes being rare (5%).

Two bifaces (B-1 and B-2), two cores (C-1 and C-2), one projectile point fragment (P-1), and one unifacial tool (U-1) were also identified. B-1 is a pink chert biface tip fragment measuring 1.2 cm long by 1.2 cm wide by 0.3 cm thick. It is manufactured from a primary/decortication flake using pressure flaking. The dorsal (cortical) face of the tool retains approximately 25% of its original cortex. B-2 is an olive-tan/red chert biface fragment measuring 2.5 cm long by 3.7 cm wide by 0.8 cm thick, and 75% of its flaking appears as secondary bifacial retouch. C-1 is a slightly fire crazed white chert core with approximately seven flakes removed from one face measuring 3.9 cm by 3.0 cm by 1.7 cm. It retains no original cortex. C-2 is a root beer-colored chert core with 13 flakes struck from one face. It measures 5.0 cm by 4.2 cm by 2.2 cm, and retains no original cortex. P-1 is an olive-tan chert

projectile point fragment. It appears to be a basal fragment of a large expanding stem point type that was broken by a bending fracture. It measures 1.5 cm long by 1.1 cm wide by 0.3 cm thick. U-1 is a tan mudstone unifacial tool that has been manufactured from a primary/decortication flake. The dorsal (cortical) face retains 100% of its original cortex, however the ventral face has been thinned extensively by direct percussion. It measures 2.9 cm long by 2.2 cm wide by 2.2 cm thick.

No additional artifacts no features were identified. The sediments of this site are sandy and largely residual, with a moderate content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till. This site appears to possess some potential for intact subsurface cultural materials.

Site 42Dc1343

This site, located on [redacted] Island Lake, is a small, very low density scatter of lithic debris [redacted]. The site consists of approximately 35 to 50 primary/decortication, secondary, and tertiary flakes and shatter debris of white quartzite, olive-tan chert, grey chert, and white chert. One semi-prismatic blade of tan chert, struck from a classic polyhedral core, appears to have been thermally altered prior to its being struck. The artifact assemblage is dominated by secondary flakes (50%), with primary/decortication flakes being less common (45%) and shatter debris being rare (5%). Tertiary flakes comprise less than 1% of the overall artifact assemblage. The stages of reduction appear to be fairly constant for all of the lithic materials identified at this site and all appear to have been treated equally with one exception. A single semi-prismatic blade of tan chert, struck from a classic polyhedral core, appears to have been thermally altered prior to its being struck. Its dorsal (exterior) face is very glossy and black, but its ventral (interior) face is tan. It measures 4.0 cm long by 1.1 cm wide by 0.2 cm thick. As a whole, the lithic assemblage of this site suggests the primary and secondary reduction of raw and heat treated lithic materials.

One projectile point (P-1) was also identified. P-1 is a grey/red chert lanceolate that has been thermally altered after completion as evidenced by two pot lid fractures located on one face. This projectile point resembles most closely those affiliated with the Cascade type associated with the Cascade Phase (8000-5000 B.P) of the Terminal Paleo-Indian/Archaic Period as defined for the Inter-Mountain/Plateau culture area located immediately north of the Great Basin (Drager and Ireland 1986:598). It measures 4.8 cm long by 2.0 cm wide by 0.6 cm thick.

The sediments of the site are extremely shallow, sandy and rocky, and have been eroded extensively by high water/wave action against the shores of the island of Island Lake. No

additional diagnostic tools, no lithic concentrations, and no features were identified. This site appears to lack potential for subsurface cultural materials.

Site 42Dc1344

This site, located on [redacted] Kidney Lake, is a small concentration of obsidian debitage [redacted]. The site consists of 200 to 250 primary, secondary, and tertiary flakes and shatter debris of obsidian. The artifact assemblage is dominated by tertiary flakes (65%), with secondary flakes being less dominant (25%), shatter being rare (10%), and primary/decortication flakes being almost non-existent (less than 1%). Most of the tertiary flakes appear to have been generated by secondary retouch and bifacial thinning. These average less than 0.5 cm in length and are range between 0.02 and 0.08 cm in thickness. All of the secondary flakes and most of the shatter appear to have been the result of the reduction of a small polyhedral core. The secondary flakes average approximately 1 cm^2 in size, with the largest ranging between 2.2 and 2.6 cm long by between 1.2 and 2.0 cm wide. The overall nature of this lithic scatter suggests the one-time occupation of this site for the secondary reduction of obsidian and secondary retouch of a small obsidian formalized tool or tools.

The sediments of the site are sandy and rocky, and have been eroded extensively by high water/wave action along the modern shores of the impounded Kidney Lake. No concentrations of lithic materials were observed, and no diagnostic artifacts or features were identified at this site. This site appears to have some potential for subsurface cultural materials.

Site 42Dc1345

This site, located at [redacted] Kidney Lake, is a small concentration of lithic debitage [redacted] Approximately 20 secondary and tertiary flakes of white quartzite and reddish-purple quartzite were identified. The artifact assemblage is dominated by secondary flakes (95%). Tertiary flakes are rare (5%) by comparison.

The sediments of the site are sandy and rocky, and have been eroded extensively by high water/wave action along the modern shores of the impounded Kidney Lake. No concentrations of lithic materials were observed, and no diagnostic artifacts or features were identified at this site. This site appears to possess little to no potential for subsurface cultural materials.

Site 42Dc1346

This site, located on [redacted] Kidney Lake, is a small concentration of lithic debitage [redacted] Approximately 75 to100 secondary and tertiary flakes and shatter debris of red and tan chert, white chalcedony, grey chert, and tan quartzite were identified. The artifact assemblage is dominated by secondary flakes (65%). Tertiary flakes are less dominant (25%), and shatter is rare by comparison (10%).

The sediments of the site are sandy and rocky, and have been eroded extensively by high water wave action along the modern shores of the impounded Kidney Lake. No concentrations of lithic materials were observed, and no diagnostic artifacts or features were identified at this site. This site appears to lack potential for subsurface cultural materials.

RECOMMENDATIONS

A cultural resource inventory was carried out at Brown Duck, Clements, Island, and Kidney lakes for the Section 203 EA. A total of eight new prehistoric cultural resource sites (42Dc1339 through 42Dc1346) were identified, recorded, and evaluated for eligibility to the NRHP as part of this project. In addition, four historic dams previously documented during a 1995 HAER survey (Fraser and Jurale 1985a; 1985b;1985c; 1985d; Fraser 1986) were revisited. These dam sites (HAER Numbers 42-UT-B, 42-UT-C, 42-UT-I and 42-UT-J) were recorded on Utah Office of Preservation Historic Site (USHS) Forms and reevaluated for eligibility to the NRHP. Twenty-two isolated finds (IF-1 through IF-22) were also recorded during this inventory. These isolated artifacts are not associated with any known site and cannot, in-and-of-themselves, be considered for eligibility to the NRHP. No additional sites or standing structures were identified as a result of this inventory.

Cultural resource sites are recommended for eligibility to the NRHP based upon age and integrity as well as upon selected criteria of the National Register. Following are the Criteria followed in determining the eligibility of properties as set forth in *36CFR 60.4*:

> The quality of <u>significance</u> 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.

Of the 12 cultural resource sites evaluated during this inventory a total of four previously identified historic dams (HAER Numbers 42-UT-B, 42-UT-C, 42-UT-I and 42-UT-J) and four newly identified prehistoric sites (42Dc1340, 42Dc1341, 42Dc1342 and 42Dc1344) are recommended **ELIGIBLE** to the NRHP. Following are individual site recommendations based upon the criteria provided above:

The historic dams at Brown Duck Lake (42-UT-B), Clements Lake (42-UT-C), Island Lake (42-UT-I), and Kidney Lake (42-UT-J) must be evaluated both as significant individual resources and as components of a much larger irrigation network. These dams embody a style and type of architecture associated with the formative years of water impoundment in the High Uintas. These structures stand today as a monument to the pioneering efforts of the Dry Gulch Irrigation Company and the Farnsworth Canal and Reservoir Company to increase the agricultural potential of the Uinta Basin. Both companies have played prominent roles in the economic growth and development of the Uinta Basin. These dam sites retain integrity of location, design, setting, materials, workmanship, feeling, and association. Although minor modern modifications have been made to the outlet works at each dam, these improvements were done in keeping with the general historic feeling of the dams. The dams have maintained their form and function, providing increased flow to an existing historic irrigation system. All modern modifications incorporate gates, lifts, and concrete features known to be available historically. As such, the historic dams at Brown Duck Lake (42-UT-B), Clements Lake (42-UT-C), Island Lake (42-UT-I), and Kidney Lake (42-UT-J) are each recommended **ELIGIBLE** to the NRHP under criteria A and C.

Sites 42Dc1339, 42Dc1343, 42Dc1345, and 42Dc1346 represent surface scatters or small, localized densities of lithic debitage. Erosion of these sites' sediments has been exacerbated, in part, due to their seasonal innundation by Island and Kidney lakes. The forces of erosion have exposed the cultural materials at these locations leaving little potential for subsurface cultural depth. These sites lack features, formal tools, and inter-site spatial distribution. They cannot be associated with any known prehistoric culture, period, or occupation. Based upon an evaluation of their current condition, these sites are not likely to provide further information important to the understanding of aboriginal occupation of mountain lake margins of the High Uintas. As such, Sites 42Dc1339, 42Dc1343, 42Dc1345, and 42Dc1346 are recommended **NOT** eligible to the NRHP.

Sites 42Dc1340, 42Dc1341, 42Dc1342, and 42Dc1344 possess the potential to yield further information important to the understanding of aboriginal occupation of mountain lake margins in the High Uintas. Sites 42Dc1340 and 42Dc1341 possess temporally diagnostic artifacts. One lithic concentration identified at site 42Dc1341 suggests the potential for further spatial patterning within the site. Obsidian, a noted rarity among sites of the High Uintas, is present at sites 42Dc1341 and 42Dc1344. Obsidian debitage has the potential to be utilized for identification of lithic sources and for obsidian hydration analysis. Based upon the nature of the sediments all four sites appear to possess some potential for depth of intact subsurface cultural materials. The intact sediments at these sites may possess features, temporally diagnostic materials, and/or stratified deposits that could lead to a more complete understanding of the

range, nature, and extent of occupation or occupations evidenced at these sites. As such, Sites 42Dc1340, 42Dc1341, 42Dc1342, and 42Dc1344 are recommended **ELIGIBLE** to the NRHP under criterion D.

Seasonal innundation of lake shore margins at Brown Duck, Clements, Island, and Kidney Lakes appears to have had a mixed effect upon the integrity of sites identified during the current inventory. Although innundation has caused a threat in the form of surface erosion at these site locations, it has also protected the sites from looting and vandalism. Under current management conditions, these sites are submerged during the peak months of visitation. The permanent drawdown of water will expose these sites during the summer months. Whether current management is maintained or the lakes undergo stabilization there will be some adverse impact to eligible prehistoric sites identified within the proposed project areas.

The abandonment of the historic dams at Brown Duck, Clements, Island, and Kidney Lakes will have an adverse effect upon these structures. The proposed stabilization of these lakes involves "breaching" the historic dams and returning regular stream flows, emanating from the lakes, to the Lake Fork drainage. Once abandoned seasonal structural maintenance will likely cease. Natural erosion, infilling of spillways and outlet channels, and structural deterioration will occur without maintenance at these sites.

This investigation was conducted with techniques which are considered to be adequate for evaluating cultural resources that are available for visual inspection and could be adversely impacted by the proposed project. However, should such resources be discovered during this project, a report should be made immediately to the Forest Archaeologist, Ashley National Forest Office, Roosevelt, Utah.

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APPENDIX A
USHS Site Forms

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Brown Duck Lake Dam (HAER No.: UT-42-B)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 2N ***Range:*** 6W ***Section:*** 5

City, County: Hanna (vicinity), Duchesne County ***UTM:*** 534300 mE 4493580 mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Kidney Lake, UT (1967)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 2N., R. 6W., NW¼ NE¼ SW¼ SW¼, Sec. 5 (Approx. 3.5 acres, total)

2 STATUS/USE

Property Category:
__ ***building(s)***
X ***structure***
__ ***site***
__ ***object***

Evaluation:
X ***eligible/contributing***
__ ***ineligible/non-contributing***
__ ***out-of-period***

Use:
Original Use: Dam

Current Use: Dam

3 DOCUMENTATION

Photos: Dates:
__ ***slides:***
X ***prints:*** 1163/7:11-29
__ ***historic:***

Drawings and Plans:
__ ***measured floor plans***
X ***site sketch map***
__ ***Historic American Bldg. Survey***
__ ***original plans available at:***
__ ***other:***

Research Sources (check all sources consulted, whether useful or not)
__ ***abstract of title***
__ ***tax card & photo***
__ ***building permit***
__ ***sewer permit***
__ ***Sanborn Maps***
__ ***obituary index***
__ ***city directories/gazetteers***
__ ***census records***
__ ***biographical encyclopedias***
__ ***newspapers***
X ***city/county histories***
__ ***personal interviews***
X ***USHS Library***
X ***USHS Preservation Files***
__ ***USHS Architects Files***
__ ***LDS Family History Library***
__ ***local library:***
__ ***university library(ies):***

Bibliographical References: ***(books, articles, interviews, etc.)***
Attach copies of all research notes, title searches, obituaries, and so forth.

Researcher/Organization: Lynita Langley Ware and Heather M. Weymouth, Sagebrush Consultants, L.L.C. ***Date:*** 8-31-00

4 ARCHITECTURAL DESCRIPTION

Building Style/Type: Dam ***No. of Stories:*** N/A

Foundation Material: Clay ***Wall Material(s):*** Rolled Earth and Stone

Additions: X ***none*** __ ***minor*** __ ***major (describe below)*** ***Alterations:*** __ ***none*** X ***minor*** __ ***major(describe below)***

Number of associated outbuildings: 0 ***and/or structures:*** 4 .

Briefly describe the principal building, additions or alterations and their dates, and associated outbuildings and structures. Use continuation sheets as necessary.

The Brown Duck Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985). It is located on the east end of Brown Duck Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 268 acre-feet of water in storage at Brown Duck Lake, raising the levels of this natural lake approximately 10 to 15 ft (Fraser et al. 1989:65; Fraser and Jurale 1985). Because it is the lowest dam in the Lake Fork Drainage, the Brown Duck Dam also serves as the final check regulating flow of stored water...(continued)

see attached

5 HISTORY

Architect/Builder: Farnsworth Canal and Reservoir Company ***Date of Construction:*** 1916-1919

Historic Themes: Mark themes related to this property with "S" or "C" (S = Significant, C = Contributing). (see instructions for details)

S ***Agriculture***	__ ***Economics***	__ ***Industry***	__ ***Politics/ Government***
__ ***Architecture***	__ ***Education***	__ ***Invention***	__ ***Religion***
__ ***Archaeology***	C ***Engineering***	__ ***Landscape Architecture***	__ ***Science***
__ ***Art***	__ ***Entertainment/ Recreation***	__ ***Law***	__ ***Social History***
__ ***Commerce***	__ ***Ethnic Heritage***	__ ***Literature***	__ ***Transportation***
__ ***Communications***	__ ***Exploration/ Settlement***	__ ***Maritime History***	__ ***Other:***
__ ***Community Planning & Development***	__ ***Health/Medicine***	__ ***Military***	
__ ***Conservation***		__ ***Performing Arts***	

Write a chronological history of the property, focusing primarily on the original or principal owners & significant events. Explain any justify and significant themes marked above. Use continuation sheets as necessary.

The Farnsworth Canal and Reservoir Company (Farnsworth), incorporated in 1908, is one of the earliest irrigation companies in the Uinta Basin (Fraser et al. 1989:62). Farnsworth, following the lead of the larger Dry Gulch Irrigation Company, petitioned the Utah State Engineer's Office for irrigation water storage rights in the Lake Fork Drainage in 1915 (Fraser et al. 1989:62, 63). The company proposed building dams to hold water on Brown Duck Lake, Kidney Lake, and Island Lake. The Dry Gulch Irrigation company had in 1905 laid claim to future water storage rights at Clements Lake, a large body of water located higher in the Lake Fork Drainage (Fraser et al. 1989:62). The acquisition of rights at the lower lakes was important for the interests of Farnsworth.

By April 1916, Farnsworth was granted rights to store 324, 435, and 851.2 acre-feet of water at the three lakes with the understanding that all construction be completed by November 1, 1918 (Fraser et al. 1989:62). Upon demonstrating that Kidney Lake could provide more water than anticipated, Farnsworth resubmitted the proposal in January 1917 with an additional 1500 acre-feet of storage. The following year, Farnsworth again filed...(continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page #2)

…into the irrigation systems below. Two checkdams, a log privy foundation, and a concrete pad are also associated with the dam.

Overall, the Brown Duck Lake Dam is 220 ft long (north-south). It measures 25 to 30 ft thick at the base, stands 15 ft tall, and is 12 to 15 ft wide at its top. Its foundation is excavated to a depth of 9 ft below the natural high water level of the lake. The outlet pipe consists of a 3 ft diameter corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the upstream opening of the outlet pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The gate slides over the mouth of the outlet pipe at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. Inscribed on the pedestal is the date "10-9-77", suggesting that the intake and intake controls were replaced in 1977. A padlocked chain with links measuring 1½ in. each wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 12 ft long, 1 ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of plywood and 8 in. milled lumber. Several illegible inscriptions are present in the headwall, however three reading "Johny Murray", "Greg S.", "GURYF(?) '77" were noted along the top of the headwall. The inscription "77" occurs in three additional places among the illegible inscriptions, suggesting that the outlet was replaced at the approximate time the outlet pipe and controls were upgraded to the existing Waterman system. Water exits the culvert and enters Brown Duck Creek, a rocky stream that flows eastward. The banks of Brown Duck Creek are armorized with local, dry-coursed stone of cobble-to-boulder size. Approximately 70 ft downstream from the outlet are six large fragments of discarded concrete intermixed with the local stone shoring, presumably representing the refuse from the outlet features replaced during the 1977 improvements to the Brown Duck Lake Dam.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the northern corner of the dam and discharging it downstream from the dam outlet. The spillway intake measures 50 ft wide and is approximately 8 ft below the surrounding ground surface. It is located approximately 180 ft north of the upstream (west) end of the dam outlet. The spillway is aligned approximately southwest, and carries overflow 200 ft to Brown Duck Creek approximately 75 ft downstream from the dam outlet. A small, dry coursed check dam located near the spillway outlet reduces the energy of the discharge before allowing it to enter the creek's channel. At its outlet, the spillway measures approximately 12 ft wide by 10 ft deep.

Approximately 180 ft downstream from the dam outlet is a check dam comprised of axe-notched logs. Each log averages 1 ft in diameter and all range in length from 2 to over 20 ft. Approximately 25 percent of the logs possess large, 6 in-long nails at the notches. This accumulation of debris acts as a check dam, slowing water after it exits the dam, and likely represents materials discarded from the original dam structure.

A log privy (outhouse) foundation adapted for winter use during deep snowfall was identified on Brown Duck Creek approximately 500 ft downstream from the dam. The privy foundation is constructed of dressed and notched logs stacked seven courses high. The logs range in size from 6-to-9 in. in diameter. These are roughly axe-dressed with both square and v-notches. The coursed logs are secured at the notches with 6 in. long nails. No chinking is present, leaving 1 in. gaps between each course. The foundation is footed on a slight slope. The foundation stands

HISTORIC SITE FORM

(CONTINUATION SHEET)

approximately 6' tall on the west side and approximately 5' tall on the north side. The privy's interior measures 50" square. The north face of the structure possesses an axe-hewn step centered on 5th log from the bottom to provide access when snow is not so deep. Recent subsurface disturbance centered on the privy's vault is suggested by churned earth and the presence of an inexpensive, hollow-handled aluminum camping shovel. This suggests either looting of the privy's vault or modern reclamation of the vault for its historic purpose.

A small earthen berm was identified adjacent to the privy. The berm extends from the southern bank of Brown Duck Creek into the watercourse approximately 50 ft. Rocks piled on either bank and jumbled logs combine with the berm to form a second check dam located 320 ft downstream from the larger aforementioned check dam.

A concrete pad was identified 150 ft east of the downstream (eastern) end of the dam outlet. The concrete pad measures 11½ ft (north-south) by 11½ ft (east west). It bears the inscription "JED LA?ENCE 10/19/41". The concrete pad likely served as a foundation for a large wall tent, and may be associated with maintenance of the Brown Duck Lake Dam.

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued from Page #2)

...for an additional 1700 acre-feet of water, thereby essentially granting the irrigation company an extension past the November 1, 1918 deadline (Fraser et al. 1989:63). Although Farnsworth filed their petition for water rights to the upper Lake Fork Drainage after Dry Gulch Irrigation's initial petition, Farnsworth would still have water in storage on the drainage seven years before their larger competitors.

Despite twice amending the permit applications, the Farnsworth crew had begun horse packing of supplies up freshly blazed trails in 1916 (Fraser et al. 1989:65). Actual construction was initiated in 1917 (Fraser et al. 1989:66, 68). Blasting of the rocky moraine deposits required many caps and sticks of dynamite. Barrow pits were excavated, and linear trenches were dug approximately 10 ft below the natural lake levels for the placement of the clay foundations at each dam. Concrete mix, corrugated metal pipe, canal gates, excavation equipment, tools, rebar, food, and supplies all had to be brought in by pack horses and men. Steep terrain complicated the transport of heavy, bulky, or explosive hardware. Much of the importation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser et al. 1989:67, 71).

By November 1919, small earthen dams were in place at the outlets of the three lakes (Fraser et al. 1989:62). The dams were completed at the tail end of a two-year drought that threatened over 50,000 acres of agricultural fields. Still, the capacity of the Lake Fork Drainage was viewed as insufficient for the growing number of acres cultivated in the valleys below. The call for more water was made by the farmers of the region. This call was met by further irrigation water storage projects along adjacent drainage systems. Nevertheless, the impoundment of water at Brown Duck Lake, Kidney Lake, and Island Lake by Farnsworth were pioneering efforts in high mountain water storage in Northeastern Utah.

At only 36 acres of surface area, Brown Duck Lake is the smallest of the three lakes in the Lake Fork Drainage system (Pettengill 1996:14). As such, the Brown Duck Lake Dam is the smallest of the three original Farnsworth dams on the Lake Fork. It was still intended to play a very important role in the Lake Fork system. The Brown Duck Lake Dam is the lowest dam in the Lake Fork Drainage irrigation water storage series. Water from Kidney Lake and Island Lake flows into Brown Duck, where it is retained. Brown Duck Dam serves as the final point regulating flow into the irrigation systems below the Moon Lake Reservoir outlet.

In 1967, the dam was partially breached (Fraser and Jurale 1985). Its function as an agricultural water retention feature was suspended until approximately 1977. In this year, improvements to the dam outlets of the Lake Fork system were made to upgrade the existing facilities. Repairs and upgrades returned the Brown Duck Lake Dam's role as the final check of its system.

HISTORIC SITE FORM

(CONTINUATION SHEET)

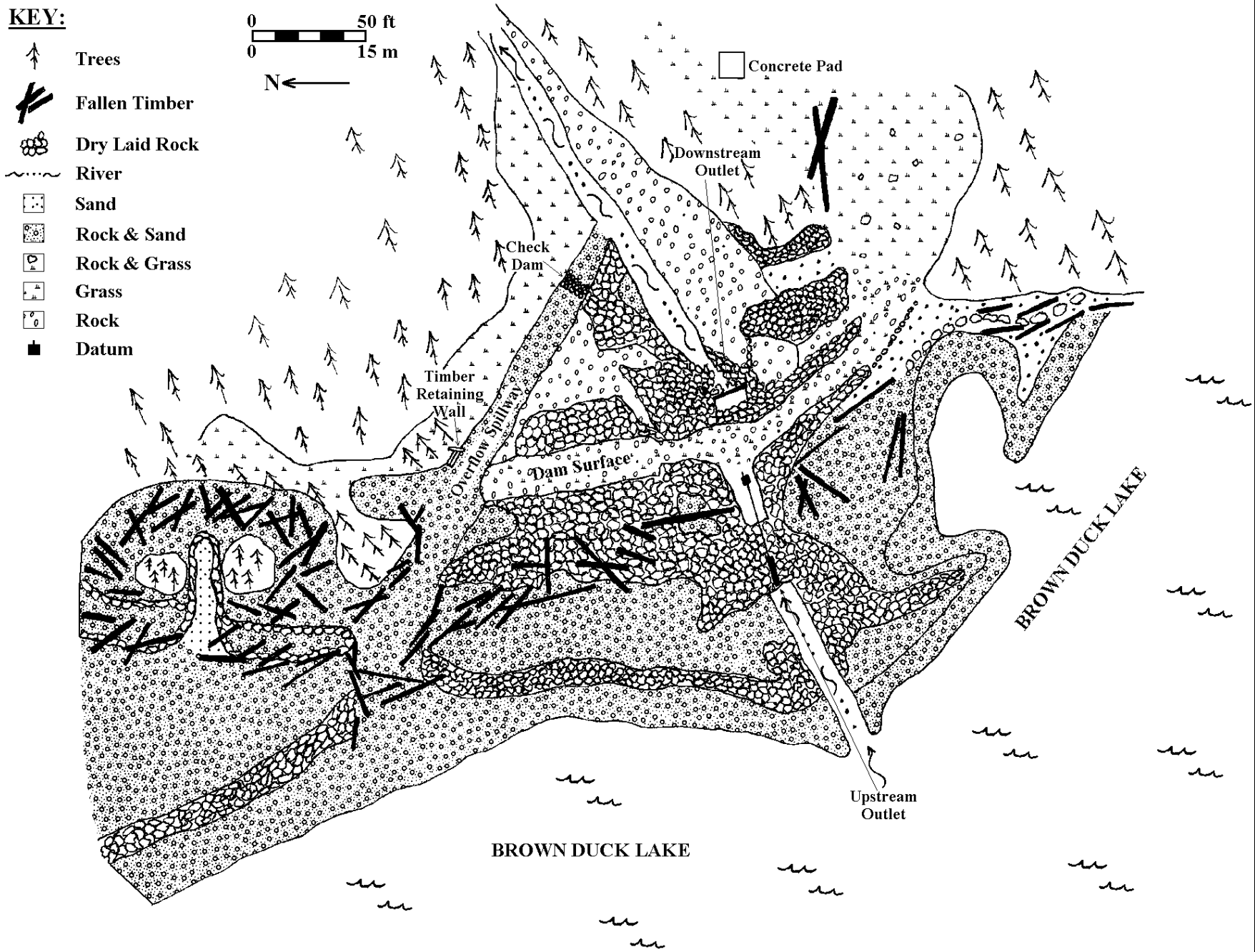
References Cited

Fraser, Clayton and James Jurale
1985 Brown Duck Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-B.

Fraser, Clayton B., James A. Jurale and Robert W. Righter
1989 Expanding the System. In *Beyond the Wasatch*, edited by G. D. Kendrick, pp. 61-99. U.S. Government Printing Office, Washington, D.C.

Pettengill, Tom
1996 Lakes of the High Uintas: Yellowstone, Lake Fork, and Swift Creek Drainages. *Utah Division of Wildlife Resources Publication No. 96-16/10M.* State of Utah Natural Resources Division of Wildlife Resources, Salt Lake City.

Location of sites 42Dc1339 through 42Dc1346, UT-42-B, UT-42-C, UT-42-I, UT-42-J, and isolated artifacts IF-1 through IF-22 identified during the survey. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).



HAER UT-42-B. Brown Duck Lake Dam.

HAER UT-42-B. Brown Duck Lake Dam. Overview of dam; view to the north.

HAER UT-42-B. Brown Duck Lake Dam. Upstream face of outlet works; view to the east.

HAER UT-42-B. Brown Duck Lake Dam. East face of canal gate handwheel and pedestal; view to the west.

HAER UT-42-B. Brown Duck Lake Dam. Downstream face of outlet works; view to the west.

HAER UT-42-B. Brown Duck Lake Dam. Overflow spillway; view to the east-southeast.

HAER UT-42-B. Brown Duck Lake Dam. Overflow spillway with notched logs; view to the northwest.

HAER UT-42-B. Brown Duck Lake Dam. Southeast corner of log privy foundation; view to the northwest.

HAER UT-42-B. Brown Duck Lake Dam. Axe-hewn step on north face of log privy; close-up view.

HAER UT-42-B. Brown Duck Lake Dam. Log check dam; view to the north.

HAER UT-42-B. Brown Duck Lake Dam. Concrete pad; view to the north.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Clements Lake Dam (HAER No.: UT-42-C)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 3N ***Range:*** 6W ***Section:*** 5

City, County: Hanna (vicinity), Duchesne County ***UTM:*** 534880 mE 4497320 mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Oweep Creek, UT (1967)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 3N., R. 6W., NE¼ NW¼ NW¼ SE¼, Sec. 29 (Approx. 1.5 acres, total)

2 STATUS/USE

Property Category:
__ ***building(s)***
X ***structure***
__ ***site***
__ ***object***

Evaluation:
X ***eligible/contributing***
__ ***ineligible/non-contributing***
__ ***out-of-period***

Use:
Original Use: Dam

Current Use: Dam

3 DOCUMENTATION

Photos: Dates:
__ ***slides:***
X ***prints:*** 1163/9:1-25
__ ***historic:***

Drawings and Plans:
__ ***measured floor plans***
X ***site sketch map***
__ ***Historic American Bldg. Survey***
__ ***original plans available at:***
__ ***other:***

Research Sources ***(check all sources consulted, whether useful or not)***
__ ***abstract of title***
__ ***tax card & photo***
__ ***building permit***
__ ***sewer permit***
__ ***Sanborn Maps***
__ ***obituary index***
__ ***city directories/gazetteers***
__ ***census records***
__ ***biographical encyclopedias***
__ ***newspapers***
X ***city/county histories***
__ ***personal interviews***
X ***USHS Library***
X ***USHS Preservation Files***
__ ***USHS Architects Files***
__ ***LDS Family History Library***
__ ***local library:***
__ ***university library(ies):***

Bibliographical References: ***(books, articles, interviews, etc.)***
Attach copies of all research notes, title searches, obituaries, and so forth.

Researcher/Organization: Heather M. Weymouth and James R. Christensen, Sagebrush Consultants, L.L.C. ***Date:*** 9-13-00

4 ARCHITECTURAL DESCRIPTION

Building Style/Type: Dam ***No. of Stories:*** N/A

Foundation Material: Clay ***Wall Material(s):*** Rolled Earth and Stone

Additions: X ***none*** __ ***minor*** __ ***major (describe below)*** ***Alterations:*** __ ***none*** X ***minor*** __ ***major(describe below)***

Number of associated outbuildings: 0 ***and/or structures:*** 0 .

Briefly describe the principal building, additions or alterations and their dates, and associated outbuildings and structures. Use continuation sheets as necessary.

The Clements Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser and Jurale 1985). It is located on the east end of Clements Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 649 acre-feet of water in storage at Clements Lake, raising the levels of this natural lake approximately 10 ft (Fraser et al. 1989:66; Fraser and Jurale 1985; Pettengill 1996:14). Four barrow areas and a segment of reinforced shoreline around the eastern margin of Clements Lake were also noted in association with the Clements Lake Dam. (Continued)

see attached

5 HISTORY

Architect/Builder: Dry Gulch Irrigation Company ***Date of Construction:*** 1926

Historic Themes: Mark themes related to this property with "S" or "C" (S = Significant, C = Contributing). (see instructions for details)

S ***Agriculture***	__ ***Economics***	__ ***Industry***	__ ***Politics/ Government***
__ ***Architecture***	__ ***Education***	__ ***Invention***	__ ***Religion***
__ ***Archaeology***	C ***Engineering***	__ ***Landscape Architecture***	__ ***Science***
__ ***Art***	__ ***Entertainment/ Recreation***	__ ***Law***	__ ***Social History***
__ ***Commerce***	__ ***Ethnic Heritage***	__ ***Literature***	__ ***Transportation***
__ ***Communications***	__ ***Exploration/ Settlement***	__ ***Maritime History***	__ ***Other:***
__ ***Community Planning & Development***	__ ***Health/Medicine***	__ ***Military***	
__ ***Conservation***		__ ***Performing Arts***	

Write a chronological history of the property, focusing primarily on the original or principal owners & significant events. Explain any justify and significant themes marked above. Use continuation sheets as necessary.

In 1905, the Dry Gulch Irrigation Company (Dry Gulch) was granted the rights to water stored in many of the remote lakes of the Uinta Mountains (Fraser et al. 1989:62). Among these lakes was Clements Lake, a large body of water pooled behind a terminal moraine. It wasn't until later that irrigation companies began developing their claims in the upper elevations of the Uintas. In 1919, the Farnsworth Canal and Reservoir Company had placed small earthen dams on Brown Duck Lake, Island Lake, and Kidney Lake (Fraser et al. 1989:62). Dry Gulch proposed to build the largest dam on the Lake Fork Drainage at Clements Lake, enhancing the storage capacity of the existing system by nearly 650 acre-foot at maximum capacity (Fraser et al. 1989:72). Being higher than the other three dams of the Lake Fork Drainage, Dry Gulch's proposed dam at Clements Lake would secure their interests in the drainage system. In 1921, the United States Forest Service granted Dry Gulch a special use permit for the development of a dam for the storage of irrigation water at Clements Lake. This permit authorized Dry Gulch to utilize up to 81 acres of Clements Lake surface (Fraser et al. 1989:71). (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page #2)

Overall, the Clements Lake Dam is 540 ft long (north-south). It measures 70 ft thick at the base, stands 20 ft tall, and is 10 ft wide at its top. As such, it incorporates greater than 48,000 cubic yards of fill. The western (upstream) face of the dam is armorized with evenly spaced, local tabular stone blocks averaging 2 ft square. The eastern (downstream) face of the dam is covered with loose boulders and cobbles of local stone and logs that have been thrown over the top of the dam to prevent accumulation on the upstream face. The outlet pipe consists of a 2 ft diameter corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the opening of the outlet pipe. Flow into the outlet pipe is controlled by a 24 in. canal gate. Heavy siltation on the gate's face precludes reading, but it appears to be similar to a Waterman Model C20 Canal Gate. The gate slides over the mouth of the outlet pipe at a 45 degree slant on a frame (stem guide) of 1½ in. angle iron bolted onto a concrete pad or base measuring 4½ ft wide by 8 ft long. The canal gate is lifted by a 30 ft-long by 1 in. diameter threaded bolt (stem) turned by a 24 in. diameter hollow cast iron, six-spoke handwheel located at the top of the dam. The handwheel is set into a partially sub-surface, board-formed concrete box measuring 5 ft 6 in. long (east-west), by 4 ft wide (north-south) and 4 ft deep. An 18 in. by 18 in. concrete step is located inside the box at the eastern end, providing access to the handwheel. Inscriptions on the northern, eastern and southern edges of the box include "Bruce Goodrich" (cursive), "BRUCE GOODRICH" (printed), "Billie Ralphs" (printed), "9/16/52", "B.G." (printed), "B.R." (printed), "P.M." (printed), "L.M." (printed), "Bruce G." (printed), "PERRY MAXFIELD" (printed) and "Billie Ralphs" (printed). The inscriptions suggest that the outlet controls were upgraded in 1952 by as few as four individual workers, or several generations of workers bearing inherited names or identical initials.

The downstream (eastern) end of the outlet pipe is set into a concrete head wall located on the eastern (downstream) toe of the dam. The head wall measures 3 ft 6 in. long by 8¼ in. thick and stands 4 ft 6 in. tall. Two 3 ft long wing walls extend at 90 degrees (east) from the head wall face. It is constructed of board-formed concrete poured into forms constructed of 10 in. milled lumber. Several illegible inscriptions are present in the headwall, however seven reading "FI" (printed), "Earl B.." (cursive), "Sam J." (scrolled print), "Sid J." (scrolled print), "J.R.A." (printed), "S.C." (printed) and "G.C." (printed) were noted along the top of the head wall. No dates were present among the inscriptions, but the overall appearance of the concrete employed in the manufacture of the head wall suggests that it predates the handwheel box by at least 10 years. Water exists the outlet pipe and enters Brown Duck Creek, a rocky stream that flows eastward.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the southern corner of the dam and discharging it downstream from the dam outlet. The spillway intake measures 15 ft wide and is approximately 8 ft below the surrounding ground surface. It is located approximately 220 ft south of the upstream (western) mouth of the dam's outlet pipe. The spillway is aligned approximately northwest, and carries overflow over 500 ft into the forest before disappearing into a meandering web of braided streams and diffuse channels up slope from the southern bank of Clements Creek.

The shoreline of Clements Lake has been reinforced with a 200 ft long, 5 ft wide log and stone armorization feature located approximately 80 ft from the western (upstream) face of the Clements Lake Dam. The feature stands approximately 1 ft high. The logs range from 8 to 20 ft long and from 6 to 12 in. in diameter. Random axe-hewn saddle notches suggest that the logs have been recycled from some earlier structural frame. Local boulders piled around the logs hold them in place.

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued from Page #2)

In order to prove up on the claim, Dry Gulch built a small log dam across the natural outlet on the east end of Clements Lake (Fraser et al. 1989:71, 72). With the proof of claim, Dry Gulch introduced the fourth and highest lake to the existing Lake Fork Drainage System.

In 1926, Dry Gulch contracted engineer Louis Galloway to plan a pack trail from the Moon Lake trailhead to the proposed Clements Lake dam site, and to survey the proposed dam location (Fraser et al. 1989:71). Galloway's assistant, Pete Wall, received the contract to construct the dam at Clements Lake. By the end of the year, Wall used 9 to 10 pack horses to bring equipment and supplies to the lake for construction. Blasting of the rocky moraine deposits required many caps and sticks of dynamite. Barrow pits were excavated, and linear trenches were dug approximately 10 ft below the natural lake levels for the placement of the clay foundation. Concrete mix, corrugated metal pipe, canal gates, excavation equipment, tools, rebar, food and supplies all had to be brought in from the Moon Lake trailhead. Steep terrain complicated the transport of heavy, bulky or explosive hardware. Much of the importation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser et al. 1989:67, 71).

As the existing Farnsworth Canal and Reservoir Company dams of the Lake Fork Drainage were used as examples, Clements Lake Dam appears very similar in form to the other clay core, earth and stone dams of the region. Improvements made to the general design include the patterned placement of tabular stone facing as armorization to the upstream (western) face of the dam and the placement of the overflow spillway directed well away from the main dam structure.

HISTORIC SITE FORM

(CONTINUATION SHEET)

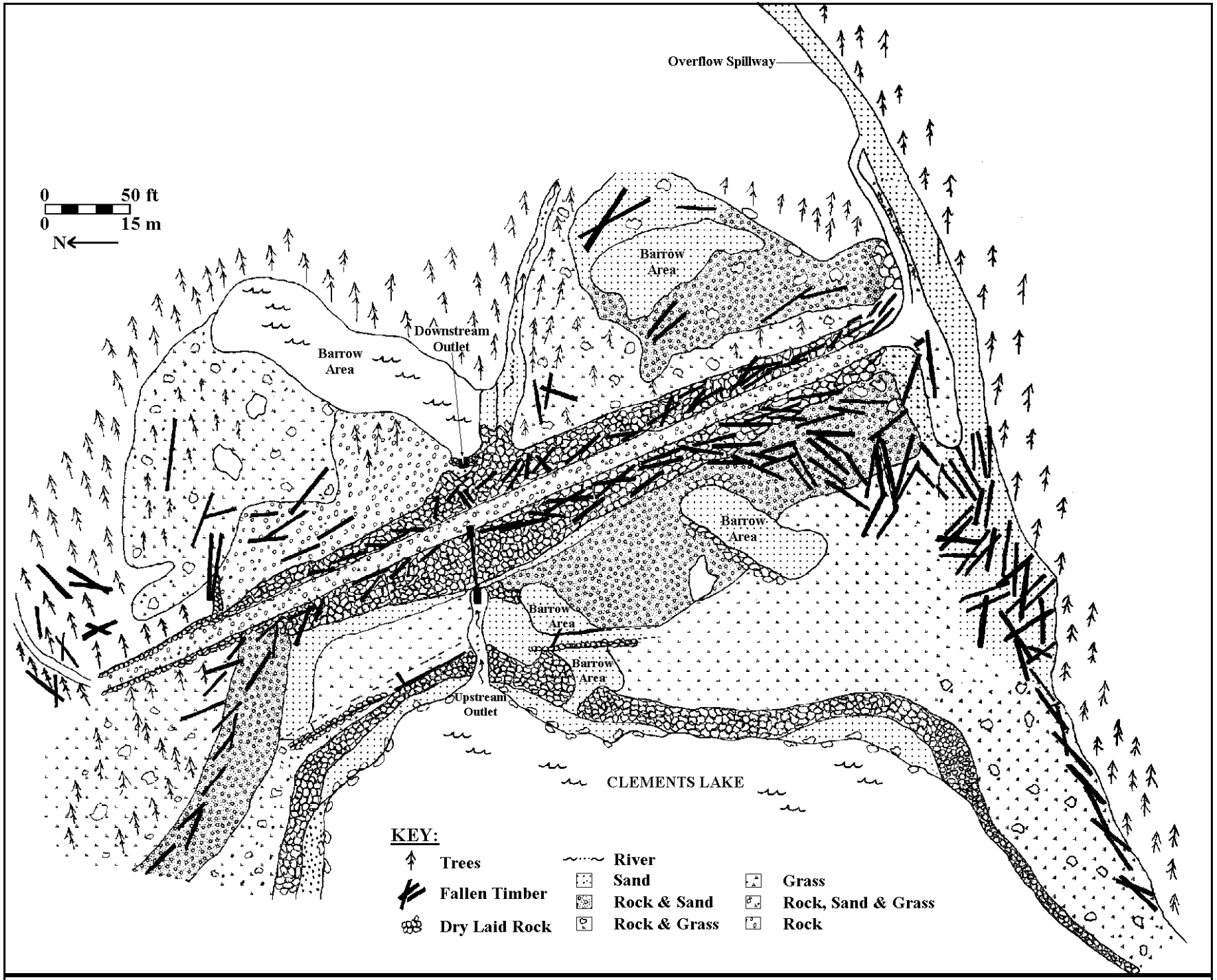
References Cited

Fraser, Clayton and James Jurale
1985 Clements Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-C.

Fraser, Clayton B., James A. Jurale and Robert W. Righter
1989 Expanding the System. In *Beyond the Wasatch*, edited by G. D. Kendrick, pp. 61-99. U.S. Government Printing Office, Washington, D.C.

Pettengill, Tom
1996 Lakes of the High Uintas: Yellowstone, Lake Fork, and Swift Creek Drainages. *Utah Division of Wildlife Resources Publication No. 96-16/10M.* State of Utah Natural Resources Division of Wildlife Resources, Salt Lake City.

Location of sites 42Dc1339 through 42Dc1346, UT-42-B, UT-42-C, UT-42-I, UT-42-J, and isolated artifacts IF-1 through IF-22 identified during the survey. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).



HAER UT-42-C. Clements Lake Dam.

HAER UT-42-C. Clements Lake Dam. Overview of Clements Lake; view to the northwest.

HAER UT-42-C. Clements Lake Dam. Overview of dam; view to the north.

HAER UT-42-C. Clements Lake Dam. Upstream face of outlet works; view to the east-northeast.

HAER UT-42-C. Clements Lake Dam. Northeast corner of canal gate handwheel box; view to the southwest.

HAER UT-42-C. Clements Lake Dam. Downstream face of outlet works; view to the west-northwest.

HAER UT-42-C. Clements Lake Dam. Borrow pit located southwest of dam; view to the southwest.

HAER UT-42-C. Clements Lake Dam. Notched log in shoring; view to the west-southwest.

HAER UT-42-C. Clements Lake Dam. Overview of shoring; view to the south.

HAER UT-42-C. Clements Lake Dam. Tabular stone armorization; view to the west.

HAER UT-42-C. Clements Lake Dam. Overview of dam; view to the south.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Island Lake Dam (HAER No.: UT-42-I)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 2N ***Range:*** 6W ***Section:*** 5

City, County: Hanna (vicinity), Duchesne County ***UTM:*** 534030 mE 4494240 mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Kidney Lake, UT (1967)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 2N., R. 6W., NW¼ SW¼ SW¼ NW¼ S. 5 (Approx. 2.7 acres, total)

2 STATUS/USE

Property Category:
__ *building(s)*
X *structure*
__ *site*
__ *object*

Evaluation:
X *eligible/contributing*
__ *ineligible/non-contributing*
__ *out-of-period*

Use:
Original Use: Dam

Current Use: Dam

3 DOCUMENTATION

Photos: Dates:
__ *slides:*
X *prints:* 1163/7:2-10
__ *historic:*

Drawings and Plans:
__ *measured floor plans*
X *site sketch map*
__ *Historic American Bldg. Survey*
__ *original plans available at:*
__ *other:*

***Research Sources** (check all sources consulted, whether useful or not)*
__ *abstract of title*
__ *tax card & photo*
__ *building permit*
__ *sewer permit*
__ *Sanborn Maps*
__ *obituary index*
__ *city directories/gazetteers*
__ *census records*
__ *biographical encyclopedias*
__ *newspapers*
X *city/county histories*
__ *personal interviews*
X *USHS Library*
X *USHS Preservation Files*
__ *USHS Architects Files*
__ *LDS Family History Library*
__ *local library:*
__ *university library(ies):*

***Bibliographical References:** (books, articles, interviews, etc.)*
Attach copies of all research notes, title searches, obituaries, and so forth.

Researcher/Organization: Lynita Langley Ware and Heather M. Weymouth, Sagebrush Consultants, L.L.C. ***Date:*** 8-29-00

4 ARCHITECTURAL DESCRIPTION

Building Style/Type: Dam ***No. of Stories:*** N/A

Foundation Material: Clay ***Wall Material(s):*** Rolled Earth and Stone

Additions: X ***none*** __ ***minor*** __ ***major (describe below)*** ***Alterations:*** __ ***none*** X ***minor*** __ ***major(describe below)***

Number of associated outbuildings: 0 ***and/or structures:*** 0 .

Briefly describe the principal building, additions or alterations and their dates, and associated outbuildings and structures. Use continuation sheets as necessary.

The Island Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985). It is located on the east end of Island Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 66 surface-acres of water in storage at Island Lake, raising the levels of this natural lake approximately 15 ft (Fraser et al. 1989:65; Fraser and Jurale 1985). No features, structures, or artifacts associated with the dam were identified in the immediate vicinity.

Overall, the Island Lake Dam is 300 ft long (northeast-southwest). It measures 70 ft thick at the base, stands 15 tall, and is 12 to 15 ft wide at its top. The outlet pipe is a 3 ft diameter...(continued)

see attached

5 HISTORY

Architect/Builder: Farnsworth Canal and Reservoir Company ***Date of Construction:*** 1916-1919

Historic Themes: Mark themes related to this property with "S" or "C" (S = Significant, C = Contributing). (see instructions for details)

__ ***Agriculture***	__ ***Economics***	__ ***Industry***	__ ***Politics/ Government***
__ ***Architecture***	__ ***Education***	__ ***Invention***	__ ***Religion***
__ ***Archaeology***	__ ***Engineering***	__ ***Landscape Architecture***	__ ***Science***
__ ***Art***	__ ***Entertainment/ Recreation***	__ ***Law***	__ ***Social History***
__ ***Commerce***	__ ***Ethnic Heritage***	__ ***Literature***	__ ***Transportation***
__ ***Communications***	__ ***Exploration/ Settlement***	__ ***Maritime History***	__ ***Other:***
__ ***Community Planning & Development***	__ ***Health/Medicine***	__ ***Military***	
__ ***Conservation***		__ ***Performing Arts***	

Write a chronological history of the property, focusing primarily on the original or principal owners & significant events. Explain any justify and significant themes marked above. Use continuation sheets as necessary.

The Farnsworth Canal and Reservoir Company (Farnsworth), incorporated in 1908, is one of the earliest irrigation companies in the Uinta Basin (Fraser et al. 1989:62). Farnsworth, following the lead of the larger Dry Gulch Irrigation Company, petitioned the Utah State Engineer's Office for irrigation water storage rights in the Lake Fork Drainage in 1915 (Fraser et al. 1989:62, 63). The company proposed building dams to hold water on Brown Duck Lake, Kidney Lake, and Island Lake. The Dry Gulch Irrigation company had in 1905 laid claim to future water storage rights at Clements Lake, a large body of water located higher in the Lake Fork Drainage (Fraser et al. 1989:62). The acquisition of rights at the lower lakes was important for the interests of Farnsworth. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page #2)

...corrugated metal pipe. An 8 ft long grate fashioned of welded rebar prevents the flow of debris into the outlet pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The Waterman gate appears to have replaced an earlier gate. A fragmented Armco Model 101 Light Duty Slide Gate was noted near the mouth of the outlet pipe. The existing canal gate slides over the outlet opening at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. Inscribed on the pedestal are the marks "Gary Fieldsted, Oct. 8, 1977 & Rick Miles" suggesting that the original outlet pipe, gate, and controls were replaced in 1977. A padlocked chain with links measuring 1½ in. each wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 9 ft 6 in. long by 1ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of 8 in. milled lumber held in place with ¼ in. smooth wire snap ties. The inscription "RON 10-9-77" was noted on the top edge of the headwall, suggesting that the outlet was replaced at the same time the outlet gate controls were upgraded to the existing Waterman system. Water exits the pipe and enters Island Creek, a rocky stream that flows eastward. The banks of the creek are armorized with local, dry-coursed stone of cobble-to-boulder size for a distance of approximately 75 ft.

An overflow spillway prevents high waters from breaching the dam by carrying overflow from the southern corner of the dam and discharging it downstream from the dam outlet. The spillway channel measures approximately 10 ft wide and is situated approximately 5 ft below the surrounding ground surface. The mouth of the spillway is located approximately 125 ft south of the dam's upstream outlet. The spillway is aligned approximately east-west, and carries overflow 175 ft to a point on Brown Duck Creek approximately 75 ft downstream from the dam outlet.

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued from Page 2)

By April 1916, Farnsworth was granted rights to store 324, 435, and 851.2 acre-feet of water at the three lakes with the understanding that all construction be completed by November 1, 1918 (Fraser et al. 1989:62). Upon demonstrating that Kidney Lake could provide more water than anticipated, Farnsworth resubmitted the proposal in January 1917 with an additional 1500 acre-feet of storage. The following year, Farnsworth again filed for an additional 1700 acre-feet of water, thereby essentially granting the irrigation company an extension past the November 1, 1918 deadline (Fraser et al. 1989:63). Although Farnsworth filed their petition for water rights to the upper Lake Fork Drainage after Dry Gulch Irrigation's initial petition, Farnsworth would still have water in storage on the drainage seven years before their larger competitors.

Despite twice amending the permit applications, the Farnsworth crew had begun horse packing of supplies up freshly blazed trails in 1916 (Fraser et al. 1989:65). Actual construction was initiated in 1917 (Fraser et al. 1989:66, 68). Blasting of the rocky moraine deposits required many caps and sticks of dynamite. Barrow pits were excavated, and linear trenches were dug approximately 10 ft below the natural lake levels for the placement of the clay foundations at each dam. Concrete mix, corrugated metal pipe, canal gates, excavation equipment, tools, rebar, food, and supplies all had to be brought in by pack horses and men. Steep terrain complicated the transport of heavy, bulky, or explosive hardware. Much of the importation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser et al. 1989:67, 71).

By November, 1919, small earthen dams were in place at the outlets of the three lakes (Fraser et al. 1989:62). The dams were completed at the tail end of a two-year drought that threatened over 50,000 acres of agricultural fields. Still, the capacity of the Lake Fork Drainage was viewed as insufficient for the growing number of acres cultivated in the valleys below. The call for more water was made by the farmers of the region. This call was met by further irrigation water storage projects along adjacent drainage systems. Nevertheless, the impoundment of water at Brown Duck Lake, Kidney Lake, and Island Lake by Farnsworth were pioneering efforts in high mountain water storage in Northeastern Utah.

Damming Island Lake created tremendous impacts to its overall form. Historically, what is now known as Island Lake was comprised of two smaller lakes separated by a small, linear landform (Fraser and Jurale 1985). By damming the lower lake, water levels rose to partially inundate the landform. The two bodies of water joined, and the namesake "island" known today was created. Regular upgrades and maintenance of the dams continued through the years, introducing upgrades as needed. In 1977, the dam outlet pipe, gate, and gate controls were replaced with the modern corrugated steel intake pipe, inclined screw, and Waterman canal gate that are in current use.

HISTORIC SITE FORM

(CONTINUATION SHEET)

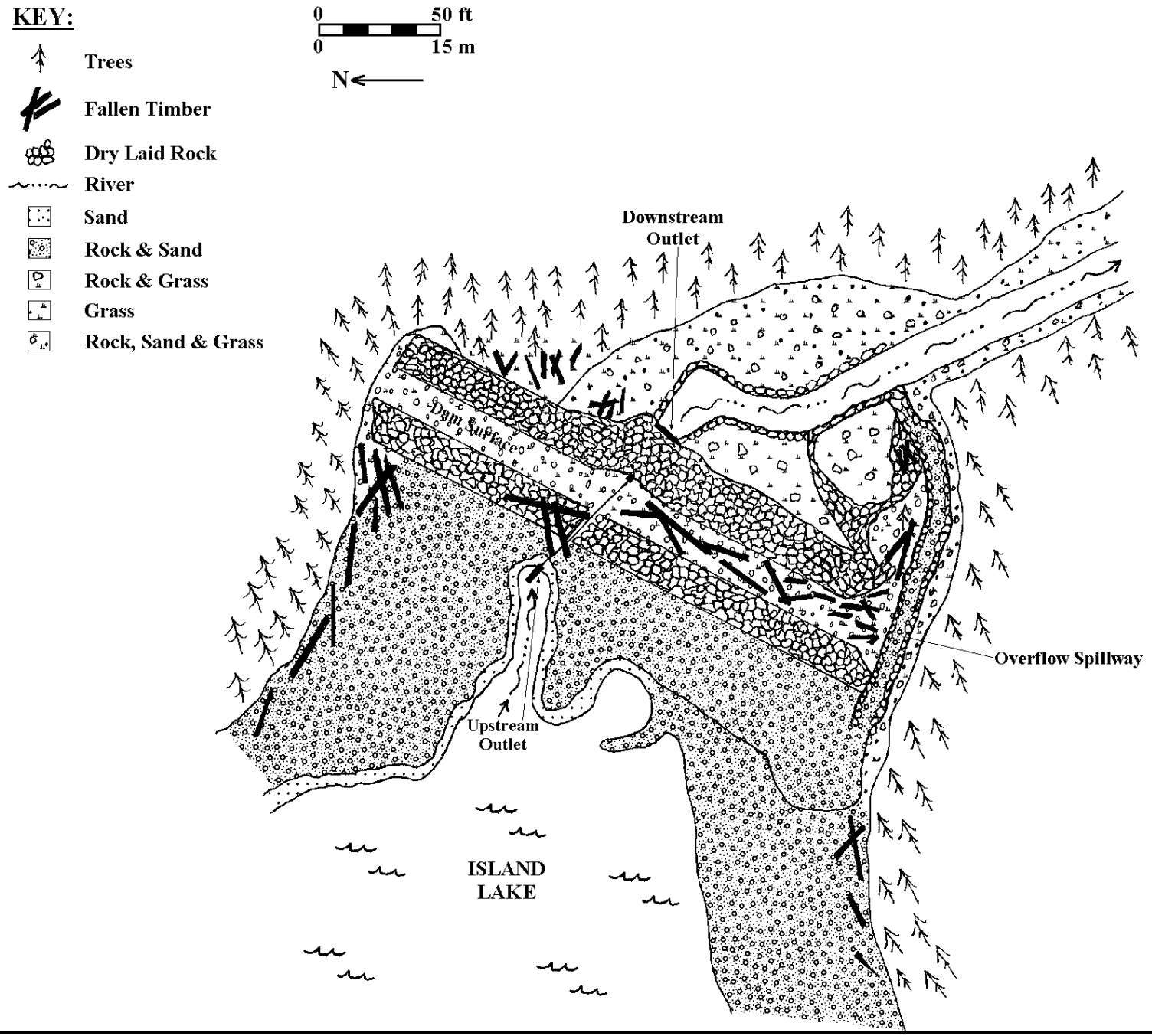
References Cited

Fraser, Clayton and James Jurale
1985 Island Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-I.

Fraser, Clayton B., James A. Jurale and Robert W. Righter
1989 Expanding the System. In *Beyond the Wasatch*, edited by G. D. Kendrick, pp. 61-99. U.S. Government Printing Office, Washington, D.C.

Pettengill, Tom
1996 Lakes of the High Uintas: Yellowstone, Lake Fork, and Swift Creek Drainages. *Utah Division of Wildlife Resources Publication No. 96-16/10M.* State of Utah Natural Resources Division of Wildlife Resources, Salt Lake City.

Location of sites 42Dc1339 through 42Dc1346, UT-42-B, UT-42-C, UT-42-I, UT-42-J, and isolated artifacts IF-1 through IF-22 identified during the survey. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).



HAER UT-42-I. Island Lake Dam.

HAER UT-42-I. Island Lake Dam. Downstream face of dam; view to the north-northwest.

HAER UT-42-I. Island Lake Dam. Overview of dam; view to the south-southeast.

HAER UT-42-I. Island Lake Dam. Upstream face of outlet works; view to the east.

HAER UT-42-I. Island Lake Dam. North face of canal gate handwheel pedestal; view to the south.

HAER UT-42-I. Island Lake Dam. Downstream face of outlet works; view to the west.

HAER UT-42-I. Island Lake Dam. Outlet spillway channel looking downstream; view to the south-southeast.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Kidney Lake Dam (HAER No.: UT-42-J)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 2N ***Range:*** 6W ***Section:*** 5

City, County: Hanna (vicinity), Duchesne County ***UTM:*** 532780 mE 4494680 mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Kidney Lake, UT (1967)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 2N., R. 6W., SW¼ NW¼ NE¼ NW¼, Sec. 6 (Approx. 2.5 acres, total)

2 STATUS/USE

Property Category:
__ ***building(s)***
X ***structure***
__ ***site***
__ ***object***

Evaluation:
X ***eligible/contributing***
__ ***ineligible/non-contributing***
__ ***out-of-period***

Use:
Original Use: Dam

Current Use: Dam

3 DOCUMENTATION

Photos: Dates:
__ ***slides:***
X ***prints:*** 1163/7:33-36a;8:2-9
__ ***historic:***

Drawings and Plans:
__ ***measured floor plans***
X ***site sketch map***
__ ***Historic American Bldg. Survey***
__ ***original plans available at:***
__ ***other:***

Research Sources ***(check all sources consulted, whether useful or not)***
__ ***abstract of title***
__ ***tax card & photo***
__ ***building permit***
__ ***sewer permit***
__ ***Sanborn Maps***
__ ***obituary index***
__ ***city directories/gazetteers***
__ ***census records***
__ ***biographical encyclopedias***
__ ***newspapers***
X ***city/county histories***
__ ***personal interviews***
X ***USHS Library***
X ***USHS Preservation Files***
__ ***USHS Architects Files***
__ ***LDS Family History Library***
__ ***local library:***
__ ***university library(ies):***

Bibliographical References: ***(books, articles, interviews, etc.)***
Attach copies of all research notes, title searches, obituaries, and so forth.

Researcher/Organization: Lynita Langley Ware and Heather M. Weymouth, Sagebrush Consultants, L.L.C. ***Date:*** 9-2-00

4 ARCHITECTURAL DESCRIPTION

Building Style/Type: Dam ***No. of Stories:*** N/A

Foundation Material: Clay ***Wall Material(s):*** Rolled Earth and Stone

Additions: X ***none*** __ ***minor*** __ ***major (describe below)*** ***Alterations:*** __ ***none*** X ***minor*** __ ***major(describe below)***

Number of associated outbuildings: 0 ***and/or structures:*** 0 .

Briefly describe the principal building, additions or alterations and their dates, and associated outbuildings and structures. Use continuation sheets as necessary.

The Kidney Lake Dam is a clay core structure ballasted by rolled earth and faced with stone (Fraser et al. 1989:66; Fraser and Jurale 1985). It is located on the northeast corner of Kidney Lake in the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 190 surface-acres of water in storage at Kidney Lake, raising the levels of this natural lake approximately 20 ft (Pettingill 1996:16). Three small check dams were identified downstream from the dam's outlet. No additional features, no structures, and no artifacts associated with the dam were identified in the immediate vicinity. (Continued)

see attached

5 HISTORY

Architect/Builder: Farnsworth Canal and Reservoir Company ***Date of Construction:*** 1916-1919

Historic Themes: Mark themes related to this property with "S" or "C" (S = Significant, C = Contributing). (see instructions for details)

S *Agriculture*	__ *Economics*	__ *Industry*	__ *Politics/ Government*
__ *Architecture*	__ *Education*	__ *Invention*	__ *Religion*
__ *Archaeology*	C *Engineering*	__ *Landscape Architecture*	__ *Science*
__ *Art*	__ *Entertainment/ Recreation*	__ *Law*	__ *Social History*
__ *Commerce*	__ *Ethnic Heritage*	__ *Literature*	__ *Transportation*
__ *Communications*	__ *Exploration/ Settlement*	__ *Maritime History*	__ *Other:*
__ *Community Planning & Development*	__ *Health/Medicine*	__ *Military*	
__ *Conservation*		__ *Performing Arts*	

Write a chronological history of the property, focusing primarily on the original or principal owners & significant events. Explain and justify and significant themes marked above. Use continuation sheets as necessary.

The Farnsworth Canal and Reservoir Company (Farnsworth), incorporated in 1908, is one of the earliest irrigation companies in the Uinta Basin. Farnsworth, following the lead of the larger Dry Gulch Irrigation Company, petitioned the Utah State Engineer's Office for irrigation water storage rights in the Lake Fork Drainage in 1915. The company proposed building dams to hold water on Brown Duck Lake, Kidney Lake, and Island Lake. The Dry Gulch Irrigation company had in 1905 laid claim to future water storage rights at Clements Lake, a large body of water located higher in the Lake Fork Drainage. The acquisition of rights at the lower lakes was important for the interests of Farnsworth.

By April 1916, Farnsworth was granted rights to store 324, 435, and 851.2 acre-feet of water at the three lakes with the understanding that all construction be completed by November 1, 1918 (Fraer et al. 1989:62). Upon demonstrating that Kidney Lake could provide more water than anticipated, Farnsworth resubmitted the...(continued)

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page #2)

Overall, the Kidney Lake Dam is 775 ft long (north-south). It measures 75 ft. thick at the base, stands 15 ft tall, and is 12 to 15 ft wide at its top. Its foundation is excavated to a depth of 10 ft below the natural high water level of the lake. The outlet pipe is a 3 ft diameter corrugated metal pipe. Flow into the outlet pipe is controlled by a 30 in. Red Top Waterman Model C20 Canal Gate. The existing canal gate slides over the outlet opening at a 45 degree slant on a frame (stem guide) of 2 in. angle iron bolted onto a concrete pad or base measuring 3 ft wide by 10 ft long. The canal gate is lifted by a 17 in. diameter Waterman handwheel located at the top of the dam. The handwheel is set on a concrete pedestal measuring 32½ in. tall by 18 in. wide by 20 in. thick at the base, and 17½ in. wide by 6½ in. thick at the top. A padlocked chain with links measuring 1½ in. each wraps around the pedestal and through the handwheel, effectively locking the canal gate in the open (up) position. Two 4 in. diameter pipes descend the western face of the dam from the concrete pedestal. The first cases a 2 in. diameter threaded bolt (stem) turned by the handwheel to lift the canal gate. The second drops into the dam's western face to provide an air vent for the outlet pipe. The upper vent hole is exposed on the eastern face of the concrete handwheel pedestal.

The downstream (eastern) end of the outlet pipe is set into a reinforced concrete headwall located on the eastern (downstream) toe of the dam. The headwall measures 10 ft long, 1 ft thick and stands 4 ft tall. It is constructed of board-formed concrete poured into forms constructed of 8 in. milled lumber and plywood. The inscription "10-4-77" was noted on the top edge of the headwall, suggesting that the original log outlet works were replaced on that date. Additional inscriptions, if present, were obscured by rock and debris fall from the dam's sloped eastern face. Water exits the pipe and enters Brown Duck Creek, a rocky stream that flows eastward. The banks of the creek are armorized with local, dry-coursed stone of cobble-to-boulder size for a distance of approximately 100 ft.

An infilled spillway is located on the southern end of the dam. This spillway was one of two installed at the dam in 1931 (Fraser et al. 1989:83). The second spillway was not identified during the current recordation of the Kidney Lake Dam.

A total of three small check dams were identified downstream from the dam's outlet. Each is comprised of small, dry laid local boulders aligned in a linear manner between the north and south banks of Brown Duck Creek. The first, located 40 ft downstream from the dam outlet, measures 12 ft wide, 1 ft thick and 1 ft tall. The second check dam, located 60 ft downstream from the dam outlet, measures 14 ft wide, 1 ft thick and 1 ft tall. The third check dam, located 150 ft downstream from the dam outlet, measures 15 ft wide, 2 ft thick and 2 ft tall.

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued from Page #2)

...proposal in January, 1917 and added an additional 1500 acre-feet of storage. The following year, Farnsworth reapplied for an additional 1700 acre-feet of water, thereby essentially granting the irrigation company an extension past the November 1, 1918 deadline (Fraser et al. 1989:63). Although Farnsworth filed their petition for water rights to the upper Lake Fork Drainage after Dry Gulch Irrigation's initial petition, Farnsworth would still have water in storage on the drainage seven years before their larger competitors.

Despite twice amending the permit applications, the Farnsworth crew had begun horse packing of supplies up freshly blazed trails in 1916 (Fraser et al. 1989:65). Actual construction was initiated in 1917 (Fraser et al. 1989:66, 68). Blasting of the rocky moraine deposits required many caps and sticks of dynamite. Barrow pits were excavated, and linear trenches were dug approximately 10 feet below the natural lake levels for the placement of the clay foundations at each dam. Concrete mix, corrugated metal pipe, canal gates, excavation equipment, tools, rebar, food and supplies all had to be brought in by pack horses and men. Steep terrain complicated the transport of heavy, bulky or explosive hardware. Much of the importation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser et al. 1989:67, 71).

By November, 1919, small earthen dams were in place at the outlets of the three lakes (Fraser et al. 1989:62). The dams were completed at the tail end of a two-year drought that threatened over 50,000 acres of agricultural fields. Still, the capacity of the Lake Fork Drainage was viewed as insufficient for the growing number of acres cultivated in the valleys below. The call for more water was made by the farmers of the region. This call was met by further irrigation water storage projects along adjacent drainage systems. Nevertheless, the impoundment of water at Brown Duck Lake, Kidney Lake, and Island Lake by Farnsworth were pioneering efforts in high mountain water storage in Northeastern Utah.

A log crib served as the original Kidney Lake Dam outlet works (Fraser et al. 1989:83). Flow through the outlet was regulated by a vertical stem lift gate. A log access structure was built in 1920 in order to reach the controls on the vertical stem. Also in 1920, two spillways were implemented to regulate overflow (Fraser et al. 1989:83). Evidence of one of these spillways has been obliterated. The southern spillway was identified during the current documentation. In 1977, board-formed concrete outlet works were installed to replace the original log outlet works (Fraser et al. 1989:83). Evidence of the original log outlet works is present in the form of notched logs lying on and around the dam.

HISTORIC SITE FORM

(CONTINUATION SHEET)

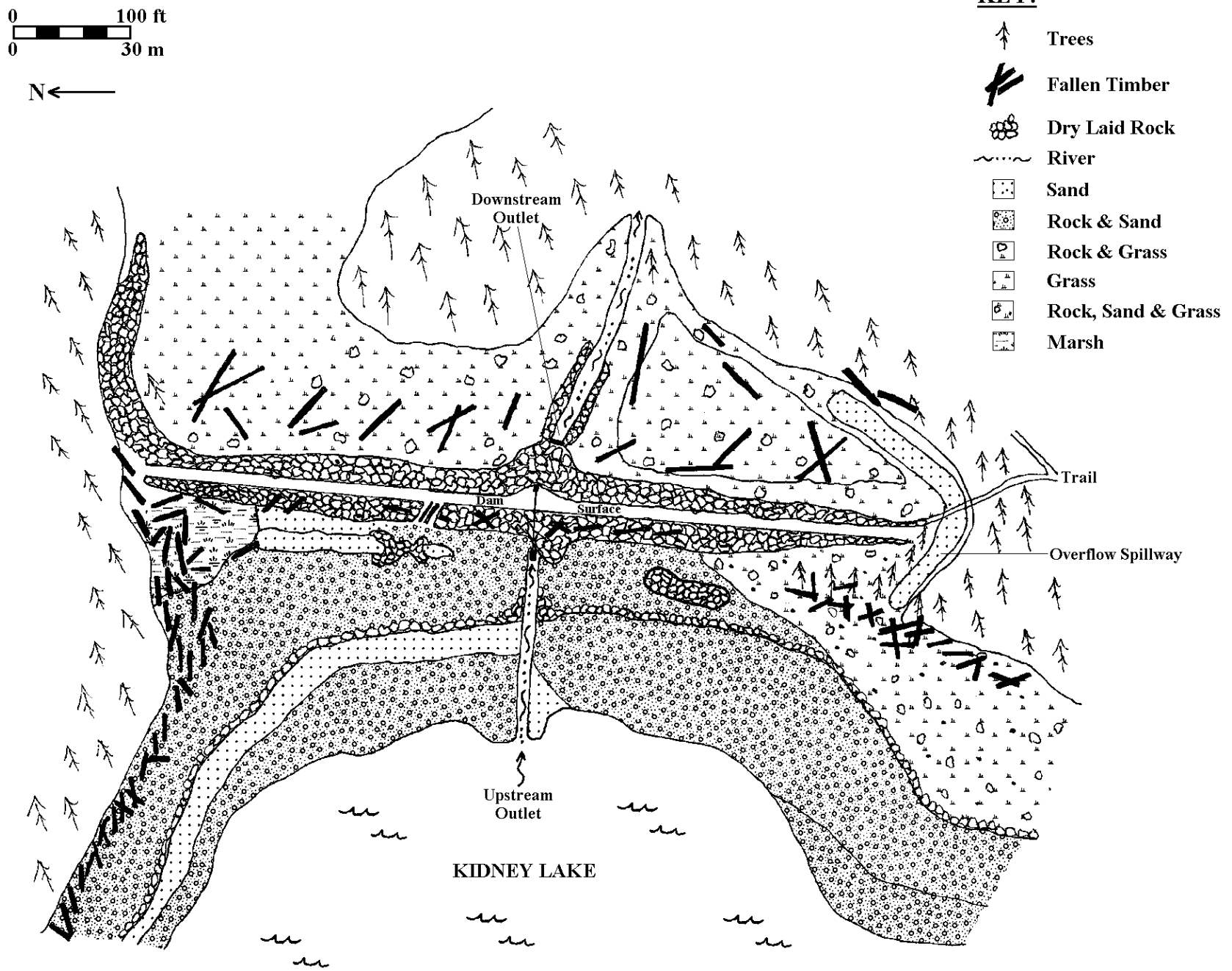
References Cited

Fraser, Clayton and James Jurale
1985 Kidney Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-J.

Fraser, Clayton B., James A. Jurale and Robert W. Righter
1989 Expanding the System. In *Beyond the Wasatch*, edited by G. D. Kendrick, pp. 61-99. U.S. Government Printing Office, Washington, D.C.

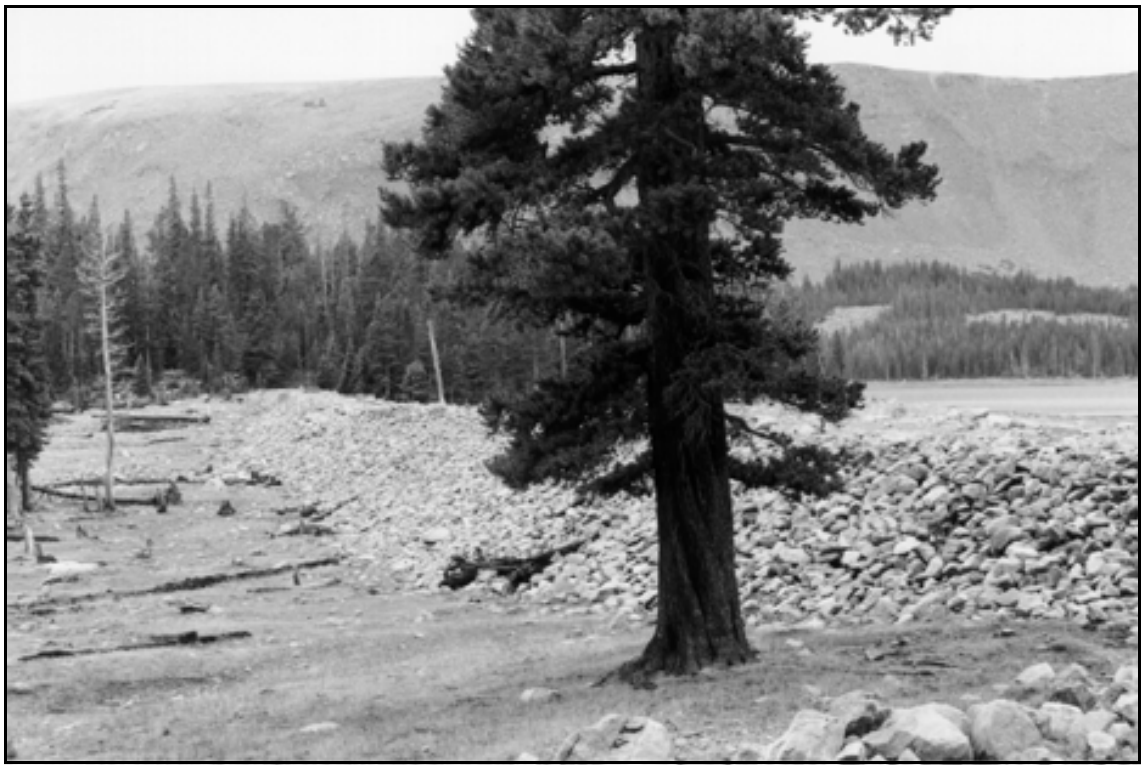
Pettengill, Tom
1996 Lakes of the High Uintas: Yellowstone, Lake Fork, and Swift Creek Drainages. *Utah Division of Wildlife Resources Publication No. 96-16/10M.* State of Utah Natural Resources Division of Wildlife Resources, Salt Lake City.

Location of sites 42Dc1339 through 42Dc1346, UT-42-B, UT-42-C, UT-42-I, UT-42-J, and isolated artifacts IF-1 through IF-22 identified during the survey. Taken from USGS 7.5' Quadrangle Kidney Lake, Utah (1967) and Oweep Creek, Utah (1967).



HAER UT-42-J. Kidney Lake Dam.

HAER UT-42-J. Kidney Lake Dam. Overview of Kidney Lake from west face of dam; view to the west.

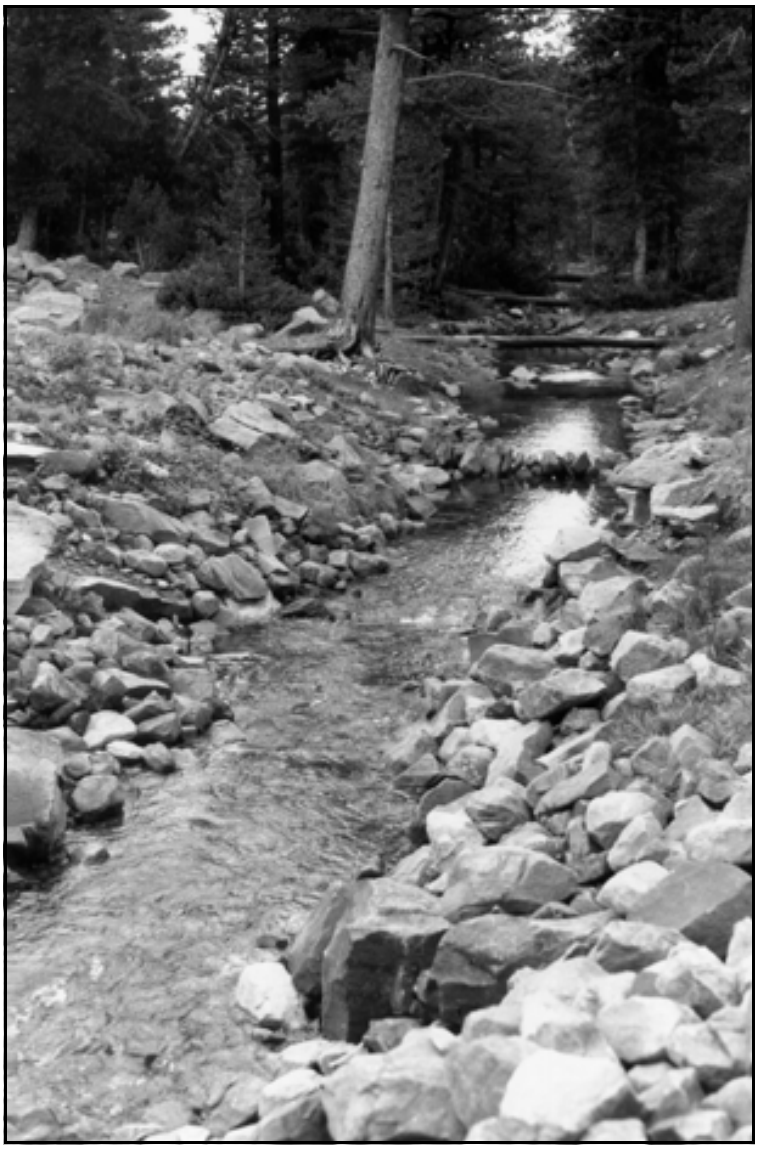


HAER UT-42-J. Kidney Lake Dam. Overview of dam; view to the southeast.

HAER UT-42-J. Kidney Lake Dam. Upstream face of outlet works; view to the east.

HAER UT-42-J. Kidney Lake Dam. Western face of canal gate handwheel pedestal; view to the east.

HAER UT-42-J. Kidney Lake Dam. Downstream face of outlet works; view to the west.



HAER UT-42-J. Kidney Lake Dam. Outlet spillway channel looking downstream; view to the east.

APPENDIX B
IMACS Site Forms

NOT FOR PUBLIC RELEASE

Site 42Dc1339. Site overview; view to the northwest.

Site 42Dc1339. Overview of Island Lake from site; view to the east.

Site 42Dc1339. Representative lithics; close-up view.

Site 42Dc1339. Lithic concentration; close-up view.

NOT FOR PUBLIC RELEASE

Site 42Dc1340. Site overview; view to the south.

Site 42Dc1340. Projectile point (P-1), Bifaces (B-1 and B-2), and Core (C-1); close-up view.

Site 42Dc1341. Site overview; view to the north.

Site 42Dc1341. Site overview; view to the east.

Site 42Dc1341. Representative lithics; close-up view.

Site 42Dc1341. Lithic concentration (LC-1); close-up view.

Site 42Dc1341. Core (C-1); close-up view.

Site 42Dc1341. Projectile points (P-1 through P-4) and obsidian sample; close-up view.

Site 42Dc1342. Site overview; view to the north-northeast.

Site 42Dc1342. Site overview; view to the southeast.

Site 42Dc1342. Cores (C-1 and C-2), Projectile point (P-1), Bifaces (B-1 and B-2), and Uniface (U-1); close-up view.

Site 42Dc1343. Site overview; view to the southwest.

Site 42Dc1343. Site overview; view to the northeast.

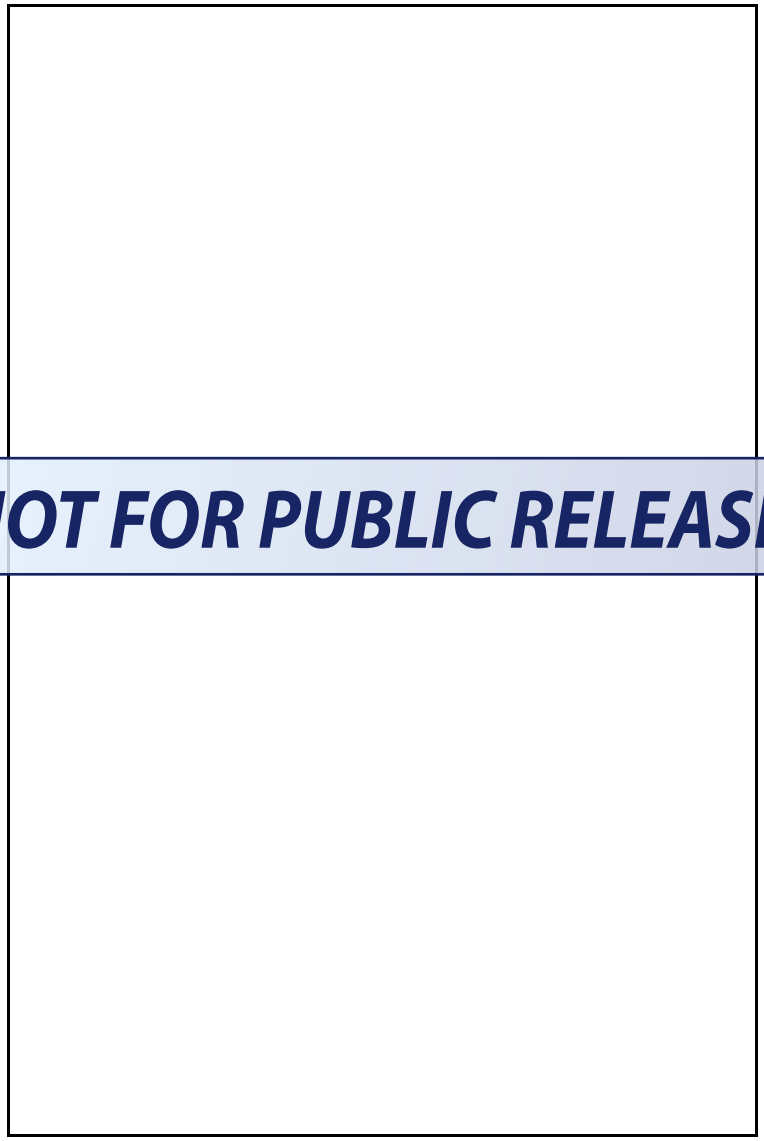
Site 42Dc1343. Representative lithics; close-up view.

Site 42Dc1343. Projectile point (P-1); close-up view.

NOT FOR PUBLIC RELEASE

Site 42Dc1344. Site overview; view to the south.

Site 42Dc1344. Representative lithics; close-up view.



Site 42Dc1345. Site overview; view to the south.

Site 42Dc1345. Representative lithics; close-up view.

NOT FOR PUBLIC RELEASE

Site 42Dc1346. Site overview; view to the east-southeast.

Site 42Dc1346. Representative lithics; close-up view.

APPENDIX C
Isolated Artifact Forms

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-1 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 8-29-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-1, located on [redacted] Island Lake, is a light brown quartzite secondary flake. The artifact was identified [redacted] above the visible high water line of Island Lake. The flake measures 3.8 cm long by 1.7 cm wide by 0.4 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-2 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 8-29-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

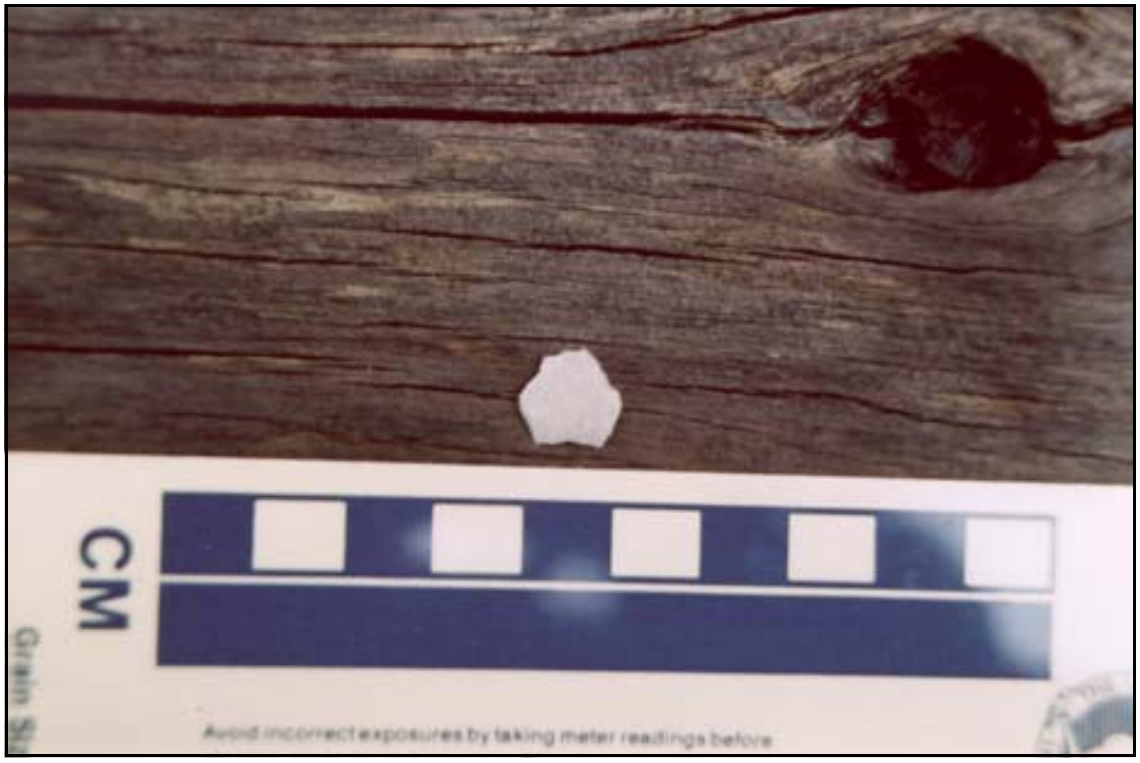
10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-2, located on [redacted] Island Lake, is a cream colored chert secondary flake with brown streaks. The artifact was identified [redacted] below the visible high water line of Island Lake. The flake measures 2.8 cm long by 1.8 cm wide by 0.4 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-3 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 8-29-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo



10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-3, located on [redacted] Island Lake, is a white quartzite secondary flake. The artifact was identified [redacted] above the visible high water line of Island Lake. The flake measures 1.3 cm long by 1.1 cm wide by 0.03 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-4 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 8-30-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-4, located [redacted] Island Lake, is a diagnostic basal fragment of a rectangular amethyst glass bottle. The artifact was identified [redacted] above the visible high water line of Island Lake. The bottle fragment possesses a maker's mark consisting of an "I" set over an "8", centered within a diamond. The number "3" is set to the left and slightly above the diamond. This mark appears to be a derivation of Illinois Glass Company maker's marks used between 1900 and 1929 (Julian Harrison Toulouse 1972, *Bottle Makers and Their Marks*, Thomas Nelson, NY:264-268). Amethyst glass potentially dates the site prior to 1917 when manganese was generally eliminated from glass making (IMACS 1992:472[10]). No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-5 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?: [ ] NO [X] YES** **Repository**: USFS, Ashley National Forest
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 8-29-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-5, located on [redacted] Island Lake, is an obsidian projectile point midsection fragment. The artifact was identified [redacted] of Island Lake. The projectile point fragment measures 2.17 cm long by 1.80 cm wide by 0.53 cm thick and possesses evidence of extensive reworking prior to its fracture. This projectile point midsection is too heavily fragmented for use as an accurate temporal indicator. It was, however, collected for use by the Ashley National Forest for potential sourcing or hydration analysis. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-6 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-6, located on [redacted] Kidney Lake, consists of one chalcedony projectile point, two white chert secondary flakes and one chalcedony secondary flake. The artifacts were identified [redacted] below the seasonal high water line of Kidney Lake. The projectile point measures 2.5 cm long by 1.1 cm wide by 0.5 cm thick and appears to have been reworked. It appears to be most closely related in form to projectile points associated with the Rose Springs Series of the Desert Complex (4000 to 250 B.P.) as defined for the Great Basin Culture Area (D.L. Drager and A.K. Ireland 1983, *The Seedskadee Project: Remote Sensing in Non-site Archeology*, NPS, Salt Lake City:594). The surface area of each of the three flakes measures approximately 1 cm². No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-7 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-7, located on [redacted] Kidney Lake, is a tannish-grey chert projectile point basal fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 1.9 cm long (broken) by 1.95 cm wide by 0.48 cm thick, and is heavily ground along its basal margin. It appears to be most closely related in form to projectile points associated with the Black Rock-Humboldt Series (5000 to 3000 B.P.) as defined for the Great Basin Culture Area (D.L. Drager and A.K. Ireland 1983, *The Seedskadee Project: Remote Sensing in Non-site Archeology*, NPS, Salt Lake City:593). No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-8 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-8, located on [redacted] Kidney Lake, is a white chert projectile point basal fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 0.8 cm long (broken) by 2.0 cm wide by 0.3 cm thick. It appears to be most closely related in form to projectile points associated with the Black Rock-Humboldt Series (5000 to 3000 B.P.) as defined for the Great Basin Culture Area (D.L. Drager and A.K. Ireland 1983, *The Seedskadee Project: Remote Sensing in Non-site Archeology*, NPS, Salt Lake City:593). No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-9 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-9, located on [redacted] Kidney Lake, is a white chert primary/decortication flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 4.2 cm long by 2.9 cm wide by 1.3 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-10 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-10, located on [redacted] Kidney Lake, is large tan quartzite knife fragment.. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 8.3 cm long (broken) by 3.5 cm wide by 0.6 cm thick. One edge is curved, and the other is straight. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-11 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-11, located on [redacted] Kidney Lake, is a historic quarter section marker. The artifact was identified at [redacted] Kidney Lake. It consists of a single rock with the inscription "W¼C" pecked into its face. Stone cadastral markers were replaced by metal posts in 1910 under the District Survey System (Bureau of Land Management 1986, *Your Public Lands:Cadastral Survey 200th Anniversary Issue*, U.S. Government Printing Office, Washington, D.C.:3). No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-12 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-12, located on [redacted] Kidney Lake, is a fragment of chalcedony core shatter. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 2.6 cm by 2.3 cm by 0.6 cm. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-13 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-13, located on [redacted] Kidney Lake, consists of three purple quartzite secondary flakes. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-14 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-14, located on [redacted] Kidney Lake, is a greyish-tan side-notched projectile point basal fragment that was recycled for use as a graver. The artifact was identified [redacted] ft) below the visible high water line of Kidney Lake. It measures 4.2 cm long by 2.9 cm wide by 1.3 cm thick. It appears to be most closely related in form to projectile points identified as the Elko-Side-notched type of the Elko-Bitterroot Series (10,000-500 B.P.) as defined for the Great Basin Culture Area (D.L. Drager and A.K. Ireland 1983, *The Seedskadee Project: Remote Sensing in Non-site Archeology*, NPS, Salt Lake City:591). No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-15 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-15, located on [redacted] Kidney Lake, consists of one primary and two secondary flakes of white chert, one piece of white chert shatter and one white quartzite tertiary flake. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

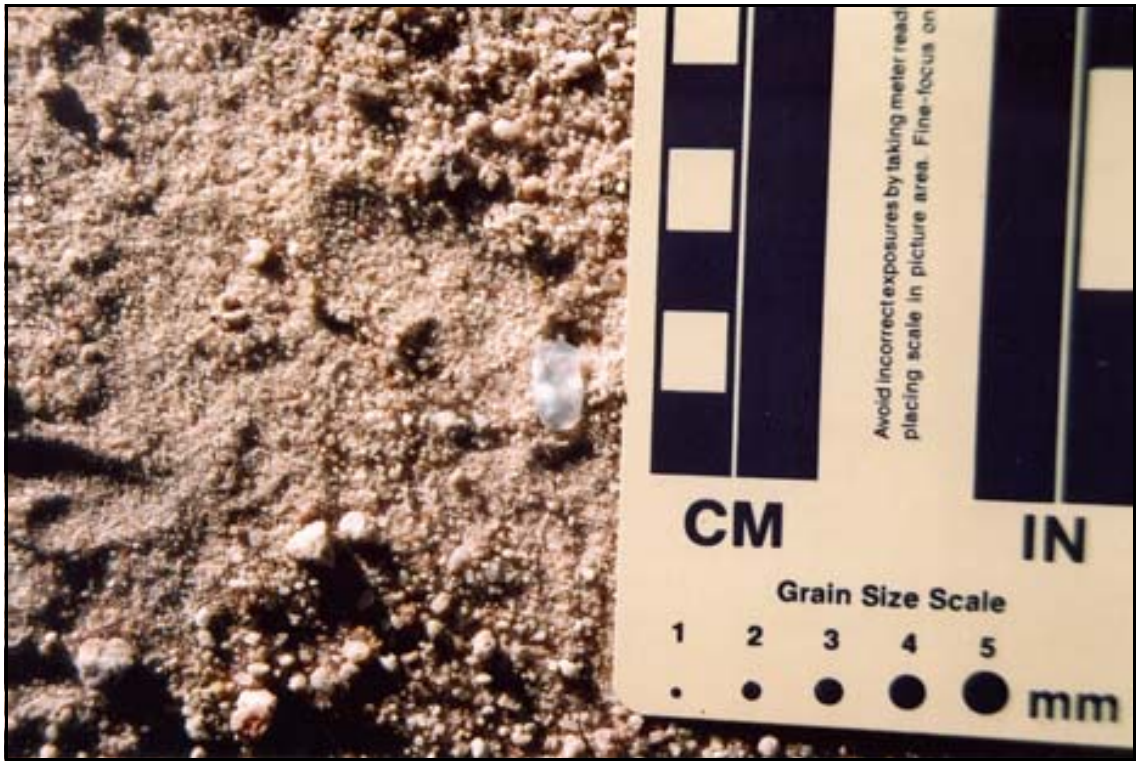
ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-16 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-16, located on [redacted] Kidney Lake, is a cream colored chert projectile point fragment. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 3.0 cm long (broken) by 2.0 cm wide by 0.6 cm thick, and possesses some evidence of hafting polish. It appears most closely related in form to projectile points identified as belonging to the Pinto Square-shoulder type of the Pinto Basin Series (6000 to 3000 B.P.) as identified for the Great Basin Culture Area (D.L. Drager and A.K. Ireland 1983, *The Seedskadee Project: Remote Sensing in Non-site Archeology*, NPS, Salt Lake City:592). No other cultural materials were noted at this location.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.
12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-17 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo



10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-17, located on [redacted] Kidney Lake, is a chalcedony tertiary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures 0.5 cm long by 0.2 cm wide by 0.05 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-18 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-18, located on [redacted] Kidney Lake, consists of one chalcedony primary/decortication flake and one chalcedony tertiary flake. The artifacts were identified [redacted] below the visible high water line of Kidney Lake. The primary flake measures approximately 6 cm long by 2.3 cm wide by 0.7 cm thick. The tertiary flake measures approximately 1 cm long by 0.5 cm wide by 0.3 cm thick. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-19 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-19, located on [redacted] Kidney Lake, is a grey chert secondary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. It measures approximately 1.5 cm². No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-20 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

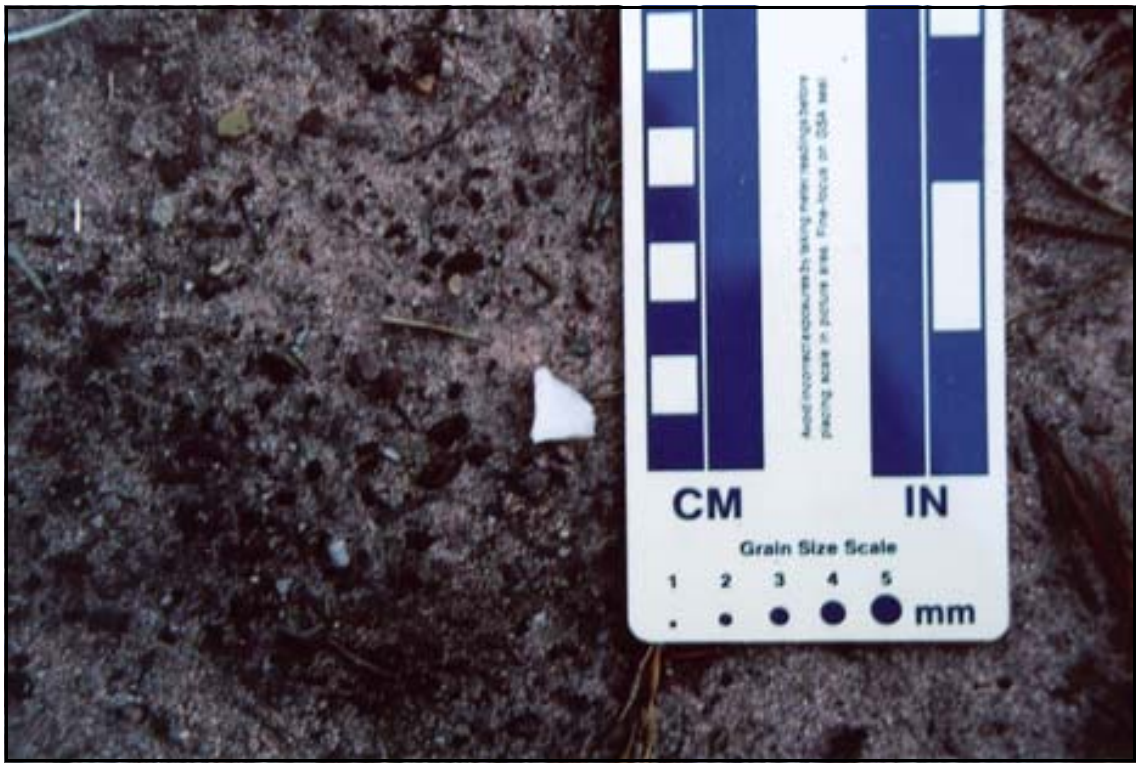
10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-20, located on [redacted] Kidney Lake, consists of two grey quartzite and three white and grey chert primary flakes, one white chert secondary flake and one chalcedony tertiary flake. The artifact was identified [redacted] below the visible high water line of Kidney Lake. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-21 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]
6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A
7. **Collected?:** [X] **NO** [ ] **YES** **Repository**: N/A
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo



10. **Artifact Description (Dimensions, materials, use/function, time period)**:
    IF-21, located on [redacted]Brown Duck Lake, is a white quartzite secondary flake. The artifact was identified in the trees [redacted]above the visible high water line of Brown Duck Lake. It measures approximately 1.5 cm². No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
    The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**

ISOLATED ARTIFACT RECORD

1. **Field Number:** IF-22 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** [redacted]

6. **Artifact Owner (Landowner):** USFS **Federal Agency/District:** Ashley National Forest
   State Agency/District: N/A **Private/Name and Address:** N/A

7. **Collected?: [X] NO [ ] YES** **Repository**: N/A

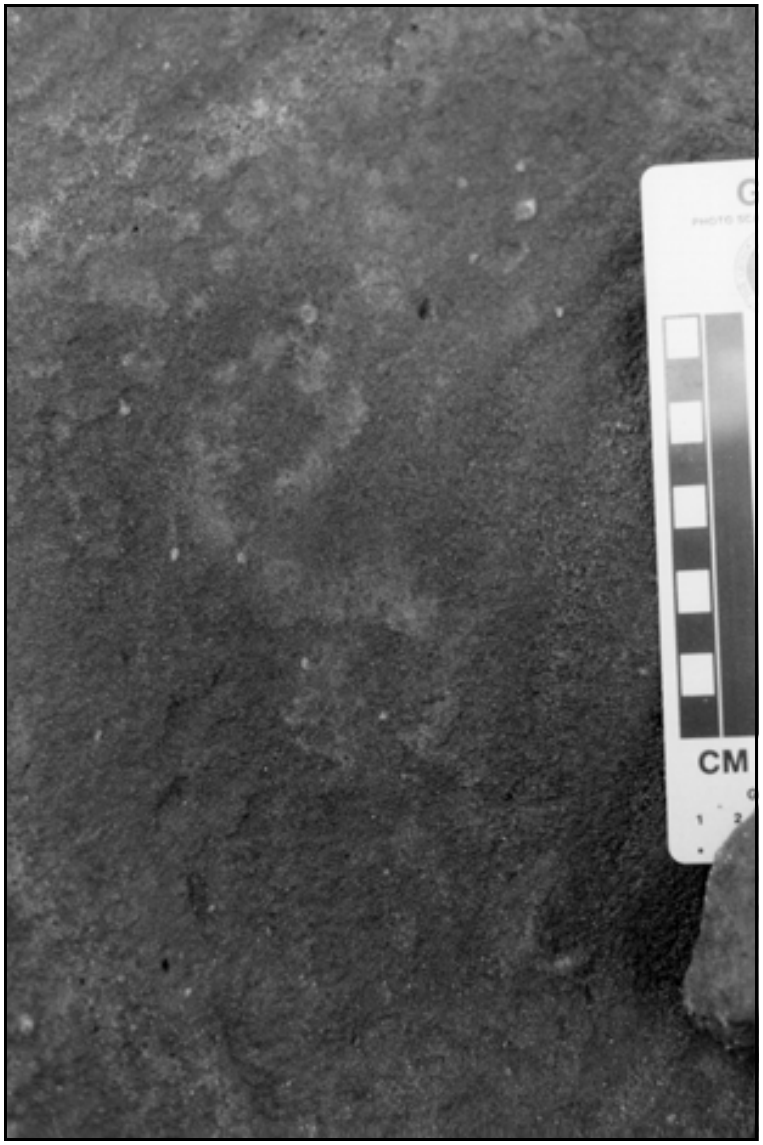
8. **Name of Recorder:** H. Weymouth, L. Langley Ware, J. Christensen **Date:** 9-2-2000
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1183)

9. **Sketch or Photo (Circle One):** **Scale:** See Photo (attached)

10. **Artifact Description (Dimensions, materials, use/function, time period)**:
IF-22, located on [redacted] Brown Duck Lake, is a single anthropomorphic rock art figure on a large slab boulder. The glyph was identified [redacted] below the visible high water line of Brown Duck Lake. The glyph measures approximately 16 cm tall by 6 cm wide and consists of a figure in side-profile facing east. It is faint due to heavy repatination. The character in the glyph is hunched slightly, with multiple rays extending back from its head. It has two well-defined legs that are gently bent, and has a single arm pointing downward in front of its body. It appears to be related in form to kokopelli (flute player) figures that have been identified at other sites in the Great Basin Culture Area. No other cultural materials were noted at this location.

11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):**
The project area lies in the Lake Fork Drainage in the Brown Duck Basin of the Uinta Mountains of the High Uintas Subsection of Northeastern Utah. The elevation of the areas surveyed ranges from 10,180 and 10,440 feet a.s.l. The sediments of the area consist generally of light tan sands. These sediments range from pure sands to coarse, rocky deposits of glacial debris or bedrock exposures. Vegetation is very dense in areas not affected by lake innundation. In those areas that have been inundated, vegetation is virtually nonexistent. Species observed in and around the project area include douglas fir, aspen, service berry, Oregon grape, Canadian thistle, smooth scouringrush, raspberries and assorted grasses. The flow of seasonal runoff is augmented by numerous springs that contribute to the year-around flow of water through the survey area. Natural disturbance in the area consists of wind and water erosion. Cultural disturbances in the area include dam building and the innundation of lake shore margins, trail construction, camping and tree cutting.

12. **Attach a USGS Map Showing Artifact Location.**



IF-22.