A CULTURAL RESOURCE INVENTORY OF FARMERS, DEER, WHITE MILLER, EAST TIMOTHY, WATER LILY, FIVE POINT, DRIFT, BLUEBELL, AND SUPERIOR LAKES FOR THE SECTION 203 HIGH MOUNTAIN LAKES STABILIZATION PROJECT, DUCHESNE COUNTY, UTAH

by

Heather M. Weymouth
Senior Archaeologist

and

Sandy Chynoweth Pagano
Assistant Archaeologist

Prepared for:

Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Prepared by:

Sagebrush Consultants, L.L.C.
3670 Quincy Avenue, Suite 203
Ogden, Utah 84403

Utah State Antiquities Permit No. U-01-SJ-0697f

USFS Special Use Permit RST900401

Cultural Resource Report No. 1239

August 22, 2002

ABSTRACT

In June 2001, the Central Utah Water Conservancy District (CUWCD) requested that Sagebrush Consultants, L.L.C. (Sagebrush) conduct cultural resource inventories at nine high mountain 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 three 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/structures were constructed at each of these lakes in order to impound additional water from spring runoff for subsequent release during summer irrigation. Through stabilization, constant lake water levels will be maintained year-round and the resulting lake level will 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 run-off 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 Farmers, Deer, White Miller, East Timothy, Water Lily, Five Point, Drift, Bluebell, and Superior 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 nine known historic dam sites were to be recorded at an intensive level and their significance evaluated based upon their current state. All nine 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, Andrew M. Williamson, Sandy Chynoweth Pagano, and Benjamin A. Wood in August and September, 2001.

A total of five new prehistoric cultural resource sites (42Dc1411 through 42Dc1415) were identified, recorded, and evaluated for eligibility to the National Register of Historic Places (NRHP) as part of this project. In addition, nine historic dams/structures previously documented during a 1995 Historic American Engineering Record (HAER) survey (Fraser and Jurale 1985a-i; Fraser 1986) were revisited. These sites (HAER Numbers 42-UT-A, 42-UT-D, 42-UT-E, 42-UT-F, 42-UT-G, 42-UT-H, 42-UT-L, 42-UT-N, and 42-UT-O) were recorded on Utah Office of Preservation Historic Site (USHS) Forms and re-evaluated for eligibility to the NRHP. Two

isolated finds (ET-IF-1 and DR-IF-1) were also recorded during this inventory. Of the 14 cultural resource sites evaluated during this inventory a total of nine previously identified historic dams/structures (HAER Numbers 42-UT-A, 42-UT-D, 42-UT-E, 42-UT-F, 42-UT-G, 42-UT-H, 42-UT-L, 42-UT-N, and 42-UT-O) and two newly identified prehistoric sites (42Dc1411 and 42Dc1412) are recommended **ELIGIBLE** to the NRHP based upon age and integrity as well as upon selected criteria of the National Register.

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

In June 2001, the Central Utah Water Conservancy District (CUWCD) requested that Sagebrush Consultants, L.L.C. (Sagebrush) conduct cultural resource inventories at nine remaining high mountain 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. Stage one consisted of inventory of four high mountain lakes within the Lake Fork River Drainage. Stage two consisted of inventory of low elevation features associated with the project. Stage three consists of inventory of nine high mountain lakes within the Yellowstone River Drainage. Inventories for stages one and two were completed during the year 2000. This report presents results of cultural resource inventories associated with stage three of the Section 203 Project. Results of the stage one and two inventories are documented in Sagebrush Consultants Cultural Resource Reports No. 1163 (Sayers and Polk 2001) and 1178 (Weymouth and Christensen 2001).

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 from spring run-off for subsequent release during summer irrigation. Through stabilization, constant lake water levels will be maintained year-round. The resulting lake level will 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 run-off 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 areas surveyed include; five lakes located in Swift Creek Basin of the Yellowstone River Drainage including Farmers, Deer, White Miller, East Timothy and Water Lily, and four lakes located in Garfield Basin of the Yellowstone River Drainage, including Five Point, Drift, Bluebell and Superior. The purpose of this cultural resource inventory was to identify, record, and determine the extent and significance of all cultural resource sites located within the proposed project area. In addition, the nine known historic dam sites were to be recorded at the intensive level and their significance re-evaluated based upon their current state.

The current project areas are located in northwestern Duchesne County, Utah in [redacted] Garfield Basin (1996), Burnt Mill Spring (1996), and Mt. Emmons (1996), Utah (Figures 1-3). These areas lie on lands administered by the Ashley National Forest located within the High Uintas Wilderness Area. Initial fieldwork for the project was carried out in Swift Creek Basin by Heather M. Weymouth and Andrew M. Williamson between August 6 and 19, 2001. Additional fieldwork was completed in Garfield Basin by Heather M. Weymouth and Sandy Chynoweth Pagano between September 1 and 15, 2001. Inventory and recordation at Water Lily Lake was carried out by Heather M. Weymouth and Benjamin A. Wood on September 19 and 20, 2001. All fieldwork was conducted under authority of Utah State Antiquities Permit No. U-01-SJ-0697f 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. An additional file search was conducted by Michael R. Polk and Sandy Chynoweth Pagano on August 9, 2001 at the Offices of the Ashley National Forest, Vernal, Utah. Three cultural resource projects have been conducted within a one mile radius of the current project areas. In 1993, the United States Forest Service (USFS) conducted a reconnaissance of portions of Garfield Basin (Loosle 1996). Three sites, 42Dc966, 42Dc979, and 42Dc981, were identified within one mile of the current project areas during this inventory. Two of these sites consist of small lithic scatters (42Dc966 and 42Dc981), and the third site consists of a small scatter of historic trash. Sites 42Dc966 and 42Dc981 were recommended ELIGIBLE to the NRHP. In 1987, the USFS conducted an earlier reconnaissance of portions of Garfield Basin (Scott 1987). One cultural resource site, 42Dc576, was identified within one mile of the current project area during this inventory. This site consists of an historic salt storage structure and was recommended ELIGIBLE to the NRHP. 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-i; Fraser 1986). This documentation included the dams at Five Point (HAER UT-42-H), Superior (HAER UT-42-L), Drift (HAER UT-42-E), Bluebell (HAER UT-42-A), East Timothy (HAER UT-42-F), White Miller (HAER UT-42-O), Deer (HAER UT-42-D), and Water Lily (HAER UT-42-N) Lakes, and the Farmers Lake Tunnel (HAER UT-42-G). This documentation provided a brief regional irrigation context, short historic overviews, and brief dimensional descriptions of each dam. At that time Five Point, Superior, Drift, Bluebell, East Timothy, White Miller, and Deer Lake Dams were recommended NOT eligible to the NRHP. The Farmers Lake Tunnel and Water Lily Lake Dam 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.

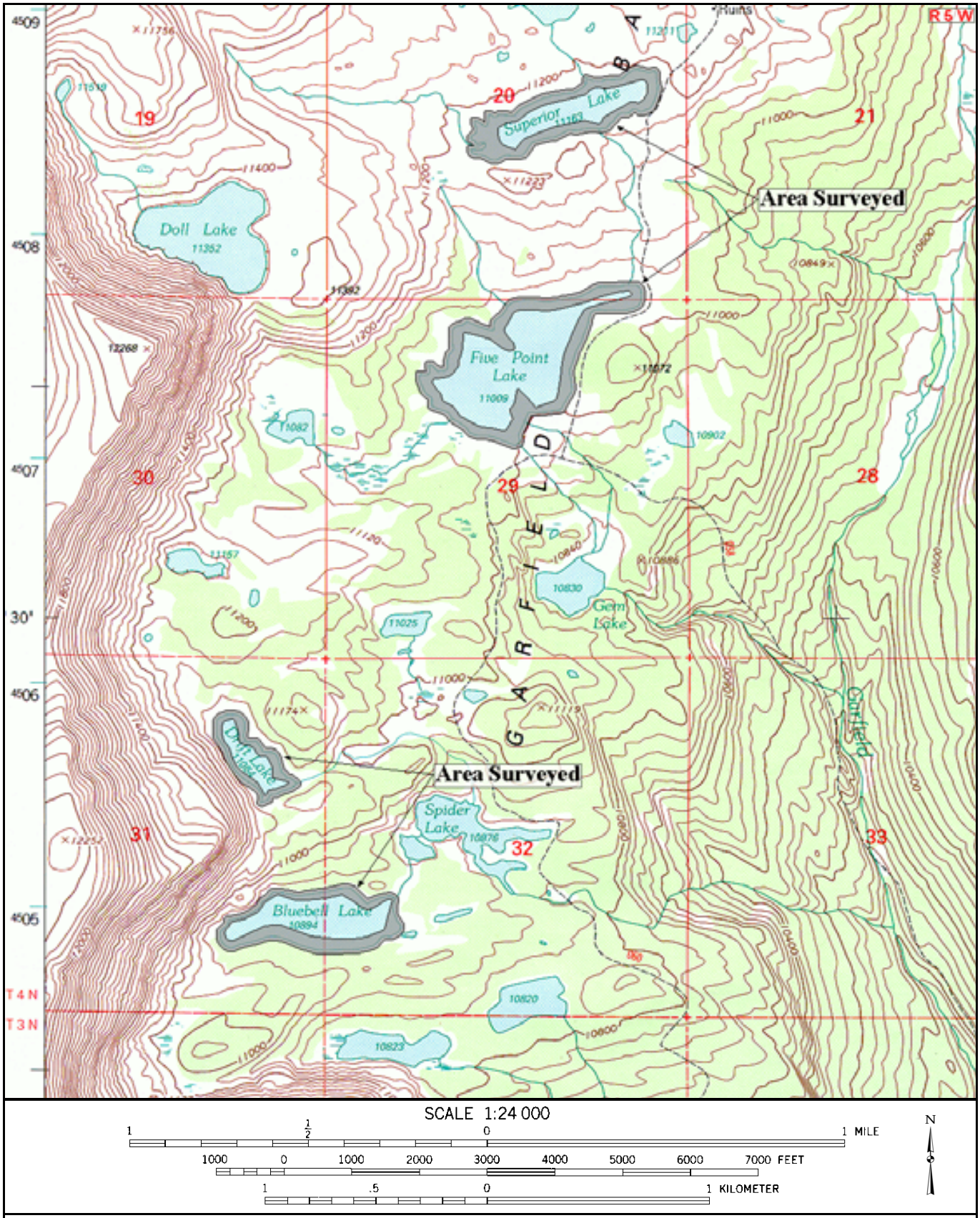


Figure 1. Location of the area surveyed for the Section 203, High Mountain Lakes Project. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).

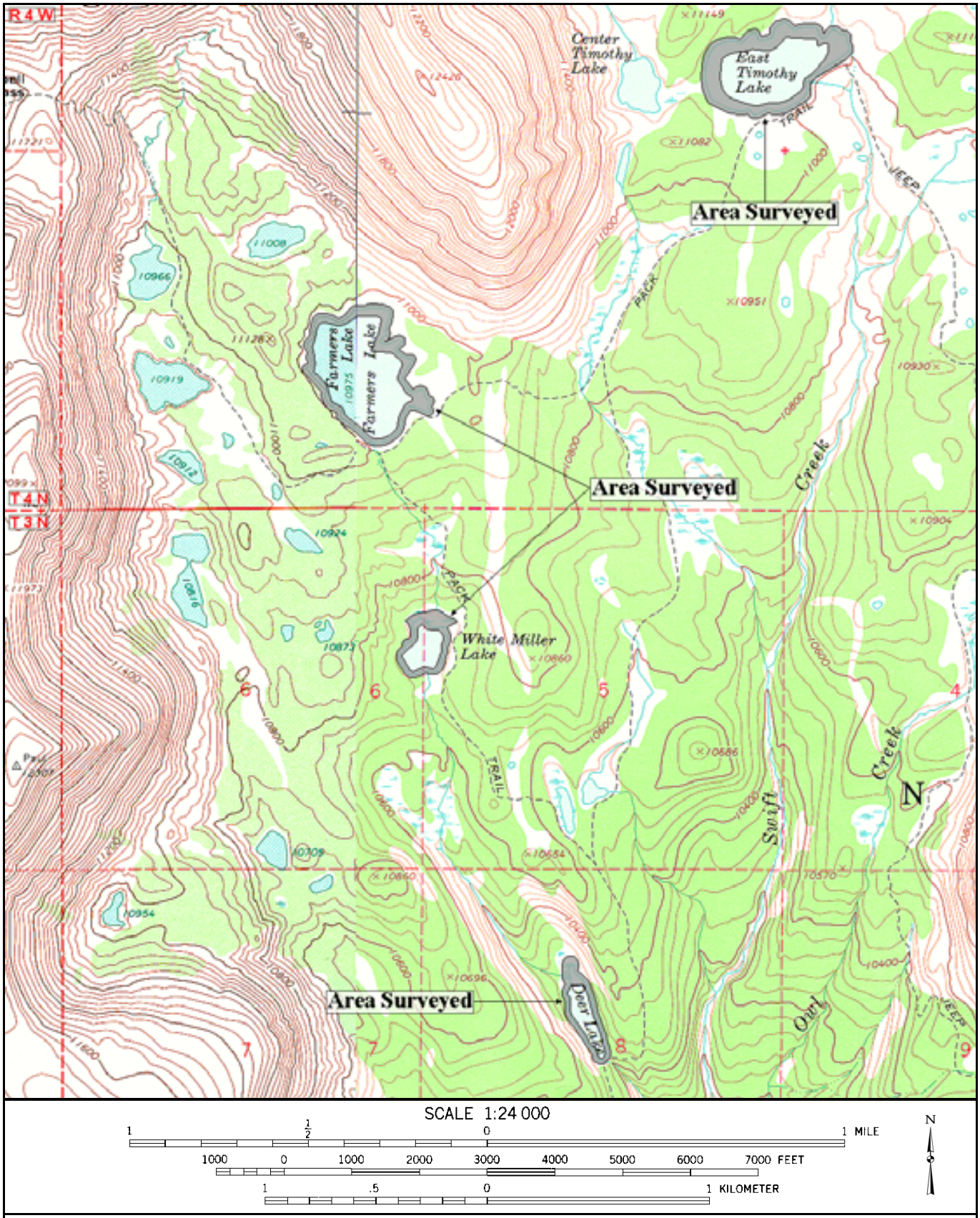


Figure 2. Location of the area surveyed for the Section 203, High Mountain Lakes Project. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

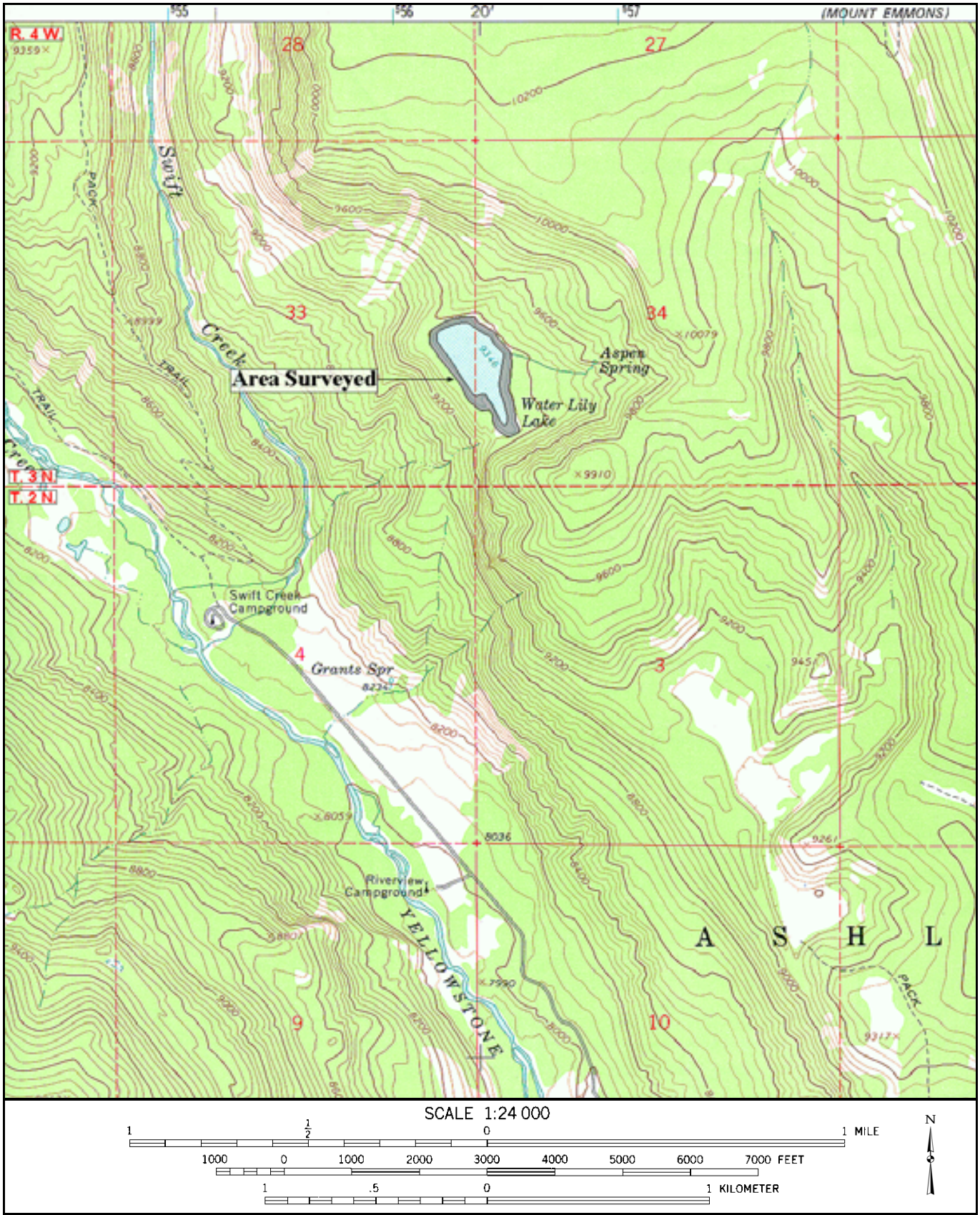


Figure 3. Location of the area surveyed for the Section 203, High Mountain Lakes Project. Taken from USGS 7.5' Quadrangle Burnt Mill Spring, Utah (1965).

ENVIRONMENT

The project area lies on the Yellowstone River Drainage in the Garfield Basin, Swift Creek Basin, and Water Lily Lake regions of the High Uintas Wilderness Area in Northwestern Duchesne County, Utah. The elevation of the areas surveyed are as follows: Garfield Basin ranging between 10,800 and 11,170 ft a.s.l.; Swift Creek Basin ranging between 10,680 and 11,040 ft a.s.l.; and Water Lily Lake 9,340 ft 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 region 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 nine lakes, located on the Yellowstone River Drainage, targeted as part of the High Mountain Lakes Stabilization Project. The areas surveyed consist of five lakes located in Swift Creek Basin of the Yellowstone River Drainage including Farmers, Deer, White Miller, East Timothy and Water Lily and four lakes located in Garfield Basin of the Yellowstone River Drainage including Five Point, Drift, Bluebell a nd Superior. The inventory conducted at these 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 2001 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 30 m (100 ft) to 152 m (500 ft). The corridors were inventoried in a series of parallel transects spaced no more than 15 m apart. The area surveyed at Farmers Lake totaled 9.0 ha. (22.3 ac). The area surveyed at Deer Lake totaled 2.5 ha. (6.2 ac). The area surveyed at White Miller Lake totaled 3.6 ha. (9.0 ac). The area surveyed at East Timothy Lake totaled 10.3 ha. (25.4 ac). The area surveyed at Water Lily Lake totaled 2.5 ha. (6.2 ac). The area surveyed at Five Points Lake totaled 15.1 ha. (37.3 ac). The area surveyed at Drift Lake totaled 4.6 ha. (11.3 ac). The area surveyed at Bluebell Lake totaled 9.7 ha. (24 ac). The area surveyed at Superior Lake totaled 8.9 ha. (22.1 ac). A total of 66.4 ha (163.8 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 Uinta Basin. 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. 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 1992:3). 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. 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 reopen 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 in the 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, 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 which 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, 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 devastation resulting from a statewide drought, the 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 FARMERS, DEER, WHITE MILLER, EAST TIMOTHY, FIVE POINT, DRIFT, BLUEBELL, SUPERIOR, AND WATER LILY 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 of settlement and agricultural development. These companies, whose sole purpose was to provide irrigation to the Uinta Basin, developed into corporations or cooperatives that traded stocks for labor. The companies included the Dry Gulch Irrigation Company (Dry Gulch) and the Farnsworth Canal and Reservoir Company (Farnsworth). Smaller companies in the region

included the Farmers Irrigation Company, the Swift Creek Reservoir Company, and the Lake Fork Irrigation Company. Several of the companies that played central roles in the historic development of these early irrigation systems are still in operation today. The longevity of these companies emphasizes their importance throughout the economic history of the region.

The Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes.

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users

Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

The dam at East Timothy Lake was initially constructed circa 1920 by Uinta Basin farmer, Brigham Timothy. This original structure measured 12 by 18 ft and consisted of stacked blocks of sod with a wood outlet gate across the lakes natural outlet channel (Fraser, Jurale, and Righter 1989:69). Timothy's water rights were eventually transferred to the Swift Creek Reservoir Company, which later became part of the Moon Lake Water Users Association (Fraser, Jurale, and Righter 1989:86-87, 90).

In 1951, the Moon Lake Water Users Association cut a primitive road from Jackson Park up to East Timothy Lake and began construction of the present East Timothy Dam utilizing heavy earth-moving equipment. Construction workers placed stone rip-rap on the face of the dam, which was an elongated S-shaped structure built across the natural outlet on the southeast corner of the lake. "Despite the fact that construction of the dam was carried out using motorized heavy equipment, the East Timothy Dam resembles the other dams built in the 1920s and 1930s, illustrating the relatively unsophisticated nature of earth-fill technology" (Fraser, Jurale, and Righter 1989:88). East Timothy Lake Dam is the largest dam in the Swift Creek Drainage.

In the 1960s, concerns stemming from the Wilderness Act of 1964 prompted the Bureau of Reclamation to adopt a policy which called for the stabilization of the high mountain lakes dammed during the first half of the 20th Century. This policy, combined with safety concerns regarding the condition of the dams made the dam at East Timothy Lake a major concern. The natural seal of the ground at East Timothy had been disturbed by the borrowing of earth from the upstream and downstream toes of the dam. This disturbance eventually led to a seepage problem (Fraser, Jurale, and Righter 1989:88-89) that if left unchecked could ultimately lead to structural failure. In order to prevent structural failure a series of breather/seep pipes were added to the downstream toe of the dam. These pipes provide an outlet for seepage in an effort to prevent structural failure of the vulnerable portion of the dam.

The dams of the Yellowstone Drainage system were relatively well maintained throughout their history. Modern outlet works 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.

Today, development of more efficient methods of irrigation, including pressurized systems, has reduced regional dependence upon water storage in the lakes of the High Uintas for irrigation use. 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

Cultural resource inventories were conducted at nine lakes within the greater Yellowstone River Drainage of the High Uintas Wilderness Area of the Ashley National Forest as part of the Section 203 EA for the High Mountain Lakes Stabilization Project. These lakes included five in Swift Creek Basin and four located in Garfield Basin of the Yellowstone River Drainage. A total of two isolated finds (DR-IF-1 and ET- IF-1), nine historic dams/structures (HAER Numbers 42-UT-A, 42-UT-D, 42-UT-E, 42-UT-F, 42-UT-G, 42-UT-H, 42-UT-L, 42-UT-N, and 42-UT-O) and five prehistoric lithic scatters (42Dc1411 through 42Dc1415) were identified during the survey (Figures 4-6).

Swift Creek Basin

Cultural resource inventories were conducted at five lakes within the Swift Creek Basin of the Yellowstone River Drainage including Farmers, Deer, White Miller, East Timothy and Water Lily Lakes (HAER 42-UT-G, HAER 42-UT-D, HAER 42-UT-O, HAER 42-UT-F, HAER 42-UT-N). A total of one isolated find (ET-IF-1), four historic dams, one tunnel, and five prehistoric lithic scatters (42Dc1411-42Dc1415) were identified and recorded at these lakes.

Isolated Find

One isolated find (ET-IF-1) was identified at East Timothy Lake during the Swift Creek portion of the inventory. No additional isolated finds were identified at any of the other four lakes during this portion of the inventory.

ET-IF-1

ET-IF-1, located on [redacted] East Timothy Lake [redacted], is projectile point midsection. It is composed of tan quartzite and measures 1.6 cm long by 1.2 cm wide by 0.2 cm thick. No other cultural materials were noted at this location.

Historic Dams/Structures

The structures located at Farmers Lake (HAER UT-42-G), Deer (HAER UT-42-D), White Miller (HAER UT-42-O), East Timothy (HAER UT-42-F), and Water Lily (HAER UT-42-N) Lakes were revisited during the current project for the purposes of providing updated documentation for each. Features and structures associated with the dams/structures were included as part of this documentation. Following are descriptions of each dam:

Figure 4. Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).

Figure 5. Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Figure 6. Location of site UT-42-N. Taken from USGS 7.5' Quadrangle Burnt Mill Spring, Utah (1965).

HAER Number UT-42-G: Farmers Lake Tunnel

The Farmer's Lake Tunnel, constructed in 1920 by the Farmers Irrigation Company (Farmers), is a rock-cut tunnel used to drain naturally stored water from Farmer's Lake. The tunnel is located at the southeast end of Farmers Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. Farmer's Lake holds approximately 1327 acre-feet of water in storage, the Farmers Lake Tunnel allows access to this water, dropping the levels of this natural lake 12½ vertical feet. The Farmers Lake Tunnel measures approximately 300 ft long and 3 ft wide. In association with this tunnel are upstream and downstream outlet channels, an access shaft, and two depressions.

The upstream outlet channel is 53 ft long, 18 ft wide at the lake edge, and 9½ ft wide where it meets the tunnel entry. The channel has been cut straight through the bedrock at the shoreline which rises quickly from the lake's surface. It has a depth which ranges from just a few inches at the lake's edge to 10½ ft at its termination. The sides of the channel attest to the amount of excavation done during construction, as the fill from this work has been piled up in the adjacent areas. A collapsed wooden structure lies at the end of the outlet channel. This structure represents the log grizzly that Fraser and Jurale (1985e) reported during their recordation. The badly deteriorated axe-hewn logs are fastened together with 6 in. nails. The grizzly acts as a trash rack, preventing floating debris from entering and blocking the tunnel. At the mouth of the upstream outlet, there is a gravel bar composed of small-to-medium sized angular gravels. Measuring 23½ ft wide, this gravel bar is dry and represents the current shoreline. Behind this, water is gathered in a pool which runs from the gravel bar through the channel to the end of the outlet at the tunnel entry. The channel is filled with remnants of the log grizzly structure, as well as large rocks which have begun to fall from above. Access to the tunnel on the upstream outlet is obscured by water, logs, and rocks. The condition of the tunnel entry could not be ascertained at the time of recording.

[redacted] there is an access shaft in which the gate control mechanism and headgate are located. The shaft is 4 ft long by 2½ ft wide and has a depth of 11 ft which represents the water line. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem which runs vertically down the shaft and connects to the gate. The gate lift mechanism was controlled by a handwheel located on top of the iron frame. The wheel itself is gone, with the exception of one spoke which still remains attached to the stem. More precise measurements and descriptions regarding this apparatus could not be conducted due to the inaccessible nature of the shaft. The remnants of a log cribbed structure exist atop the shaft, though portions have begun to collapse and fall into the hole. The existing structure measures 9½ ft long by 4½ ft wide and stands approximately 3 ft high. The crib is constructed of axe-hewn and notched logs, stacked four high on a side. The logs range from 5 to 10 in. in diameter and are held together with 6 in. iron nails. The structure was intended to prevent debris from entering the shaft.

The downstream outlet is located [redacted] south-southeast of the upstream outlet. The downstream outlet channel is approximately 205 ft long and 12 ft wide. The first 82 ft of the outlet channel consist of a sharp, narrow cut into the bedrock which ranges in depth from 3½ to 5½ ft. This section of the outlet channel continues south-southeast an additional 36 ft until it meets with a large pile of rock. It appears as though this is the fill from the construction of the cut, and was moved downslope in order to help divert water along a particular drainage. The pile is 80 ft long by 20 to 25 ft wide and diverts the water to the southeast. At the termination of the rock pile, the channel empties water into an existing natural drainage, which in turn leads to Swift Creek below. The tunnel from which water empties into the downstream outlet channel is protected by a large wooden trash rack composed of five axe-hewn logs that average 9 to 12 in. in diameter. They are roughly 21 to 23 ft in length and cover the tunnel at a 20° downward angle from the top of the cut. These logs are beginning to show signs of deterioration, but were in reasonable condition at the time of this recording. The purpose of such a structure was to protect the tunnel from blockage by debris. The tunnel itself is at the base of the cut for the outlet channel, and still has a small amount of water flowing through it. Access to the tunnel is prevented by the logs, but a visual estimate of its dimensions suggest a 3 ft by 1 to 2 ft measurement.

The HABS/HAER documentation for the Farmer's Lake Tunnel (Fraser and Jurale 1985e) made mention of an original tunnel which had collapsed and was later replaced by the current tunnel. A reconnaissance of the area failed to identify a clear path for this original tunnel, however, two depressions adjacent to the existing tunnel path may indicate the location of this original structure. The first is located [redacted] northeast of the cribbed wooden structure covering the access shaft. It is a 6 ft diameter depression around which a berm is found. The second depression is located [redacted] southeast of the access shaft. While it is adjacent to the path of the existing tunnel shaft, it is located far enough away to possibly indicate its use in accessing the original. This depression is 5½ by 4 ft, and is approximately 3 ft deep, with an earthen berm surrounding the depression. It may be that the inlet and outlet channels currently in use served both tunnels, and these in turn may have followed similar routes.
The Fraser and Jurale report (1985e) also notes that the existing tunnel shaft is straight. While exact information on this could not be gathered on the surface, one can surmise that a possible angle change exists due to the placement of the inlet channel, the outlet channel, and the access shaft.

HAER Number UT-42-D: Deer Lake Dam

The Deer Lake Dam, constructed in 1925 by Farmers, is a clay-cored structure ballasted by rolled earth and reinforced with stone rip-rap facing. The dam is located at the south end of Deer Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 249 acre-feet of water in storage, raising the natural lake level approximately 14 ft. An overflow spillway and a wooden measuring weir structure located on the downstream outlet channel are associated with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized

materials which range from 1 to 5 ft in diameter. The dam is 152 ft in length (northeast-southwest). It measures 30 to 85 ft wide at the base, stands 15 to 17 ft in height, and is 7 to 10 ft wide at the top.

The upstream outlet is a 3 ft diameter corrugated metal pipe that has been fitted into a 3 by 3 ft stone and concrete lined tunnel. The base of this tunnel is also constructed of concrete into which wire meshing has been set as reinforcement. Stream flow into the outlet pipe is controlled by a 32 in. Hardesty Manufacturing Company Model 110 Headgate. The gate lift mechanism consists of an iron gate on an angle iron frame, which is raised and lowered by a 2 in. diameter threaded stem encased in a 3 in. pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 29 in. diameter Hardesty Manufacturing Company Model 2003D handwheel. Presently, a padlocked chain secures the handwheel to the iron frame, thus locking the gate in an open position. The handwheel is set into a log crib and stone framework. It extends approximately 32 ft out from the face of the dam into the lake, and has a height of 17 ft. The log crib frame is constructed of axe-hewn and notched logs that average 8 to10 in. in diameter. The logs are fastened together by 6 in. nails, and the interior of the frame is filled with large angular rocks. The stem portion of this control feature has been modified, as indicated by photographs included in the 1985 HABS/HAER recordation by Fraser and Jurale (1985b). It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Modifications to the headgate appear to be limited to the angle change.

The downstream outlet is a 2 by 2 ft square opening constructed of coursed, dry-laid, tabular stone built into the downstream toe of the dam. The outlet releases water into a 2½ ft wide rocky streambed which flows through the remains of a log crib measuring weir approximately 50 ft downstream from the outlet.

The log crib weir is constructed with local timber that has been both sawn and axe-hewn, then planed by hand to create flat timbers for the walls and floors of the structure. This structure resembles the remnants of what was once used as a measuring weir. Water enters the structure through a log channel 6 ft wide and 18 ft in length. The channel has a wooden floor, but the wall height is unknown due to collapse and deterioration of the vertical timbers. After passing through this narrow channel, water flows into a rectangular 12 ft wide by 18 ft long log crib. The northern wall of the structure remains intact, held upright by vertical posts and trees, reaching a height of 5 ft. The southern wall of the structure has tipped inward and lies relatively intact at a 45° angle. Water currently flows beneath the structure. The remnant of a small wood plank footbridge was identified approximately 100 ft downstream from the crib structure.

An overflow spillway on the northeast end of the dam prevents high water from breaching the dam by discharging water downstream from its outlet. At its origin, the overflow spillway is 10 to 12 ft wide and drops 3 ft below the dam surface. It quickly widens and loses elevation, sending water downhill through a channel lined with large boulders. A log which has been

placed perpendicular to the overflow spillway is located near its beginning. It is believed that due to the main trail crossing the dam and spillway before heading up the other side of the valley, this log may be the remnants of a footbridge to carry traffic along the trail. Water released through the spillway flows southeasterly down a rocky stream channel which merges with the outlet creek 150 ft below the dam.

HAER Number UT-42-O: White Miller Lake Dam

White Miller Lake Dam, constructed in 1926 by Farmers, is a sod structure with stone facing. The dam is located on the south end of White Miller Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 77 acre-feet of water in storage, raising the natural lake level 2 ft. A wooden headgate, a log crib outlet weir, and a series of stone check-dams were noted in association with the dam. Both faces of the dam are reinforced by small-to-medium sized boulders of localized materials which range from 1 to 2 ft in diameter. The White Miller Lake Dam is 100 ft in length (east-west). It measures 10 to 20 ft wide at the base, stands 3 to 4 ft in height, and is approximately 3 to 10 ft wide at the top.

The upstream outlet consists of a narrow outlet channel leading to a wooden headgate. The outlet channel is a 12 ft long by 3½ to 4 ft wide by 3 ft deep rock lined cut in the dam bank through which water exits to the south. A wooden plank slide lift headgate controls the flow of water through the outlet channel and into the downstream outlet weir.

The downstream outlet channel consists of a narrow log crib outlet weir which discharges water into a cobble lined stream channel. The outlet channel is primarily a wooden cribbed weir with log flooring that measures 3½ ft wide by 10 ft long by 3 ft deep. The log flooring is 8 logs wide, with a maximum length of 8 ft, stopping 2 ft short of the crib's beginning. While the frame itself is still intact, the wooden plank slide-lift gate controlling water flow from the upstream outlet is no longer present, thus allowing water to exit the lake freely. Two logs/poles lie across the outlet channel on the dam's surface. These measure 10 ft and 12 ft long respectively, and average 6 in. in diameter. These logs may have been part of the weir or headgate mechanism at one time. Several large notched logs found along the shore of White Miller Lake indicate that the dam control gate was once supported by a wooden crib structure. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985i) show the crib structure to be intact at that time. Downstream on the outlet channel, three stone check-dams were placed in order to reduce the energy of the water flowing out of the lake. They are located [redacted] downstream from the south end of the weir structure.

No overflow spillway was noted in association with this dam. It should be noted that heavy vegetation obscures the entire dam, mostly consisting of well established pine trees and shrubs growing out of the dam itself. This dense vegetation made accurate and thorough measurements difficult.

HAER Number UT-42-F: East Timothy Lake Dam

East Timothy Lake Dam, constructed by Uinta Basin farmer, Brigham Timothy circa 1920, originally measured 12 by 18 ft and consisted of stacked blocks of sod with a wood outlet gate across the lakes natural outlet channel (Fraser, Jurale, and Righter 1989:69). In 1951, the Moon Lake Water Users Association cut a primitive road from Jackson Park up to East Timothy Lake and began construction of the present East Timothy Dam utilizing heavy earth-moving equipment. The current structure is an elongated, "S" shaped, earthen-filled structure reinforced with stone rip-rap facing. The dam is located on the east side of East Timothy Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 569 acre-feet of water in storage, raising the natural lake level 19 ft. Two main barrow areas, an overflow spillway, and 14 seepage pipes were noted in association with the East Timothy Dam. The upstream (west) face of the dam is reinforced by medium-to-large sized boulders of localized materials which range from 2 to 5 ft in diameter. The downstream (east) side of the dam is composed of earth and gravel fill materials and lacks any kind of stone reinforcement. The dam is 1450 ft in length (northeast-southwest). It measures 50 to 150 ft wide at the base, stands 34 ft in height, and varies from 18 to 25 ft wide at the top.

The upstream outlet was not visible at the time of recordation. The outlet was entirely beneath the waters of the lake, therefore, it is not known if metal grating or any other kind of structure is associated with this opening. A gate which controls the flow of water through the outlet pipe is accessed from the top of the dam through a 4 ft diameter vertical access culvert. The metal culvert entry extends 18 in. above the surface of the dam and descends to an unknown depth. More specific information regarding the control gate could not be obtained as the vertical access shaft is covered by a locked metal grating.

The downstream outlet pipe could not be examined at the time of recordation due to obstruction by vegetation and the high velocity of water entering the stream channel. Fragments of corrugated metal piping are found adjacent to the outlet, these may represent the remains of the original pipe installed during construction. The downstream outlet issues water at a high velocity, as a result the outlet channel has been reinforced with large boulder embankments on either side. From the pipe, water travels southeast down the outlet channel for a distance of 103 ft, where it meets with a check dam constructed to slow the water. From there, the stream turns and flows east for a short distance before changing direction at a stone-reinforced shoulder which diverts the channel southeast and downslope. Having made this last turn, the water flows across a flood plain in a series of braided streams for some distance before draining into Swift Creek far below. Located just above the downstream outlet is a rock wall which parallels the dam to the north for approximately 62 ft. Adjacent to the existing outlet channel is a linear depression which extends downslope (east) and straight into the current outlet channel. It appears that this may have been the original outlet channel, later replaced by the one currently used. A check dam located 68 ft downstream within the depression supports this assertion. It may be that the rock pile extending north from the current outlet channel represents an attempt to stabilize the channel and prevent it from washing out.

The Fraser and Jurale HABS/HAER Inventory Record (1985d) reported widespread seepage on the downslope toe of the East Timothy dam, as a result, the lake was maintained at maximum drawdown to prevent potential structural failure. There are several attributes which allude to the problem of seepage mentioned in that report and the subsequent repairs and preventative maintenance tasks which have occurred. A second rock wall measuring 60 ft long and 20 ft wide is located 25 ft upslope of the rock wall mentioned previously. It is composed of large boulders which appear to fill a depression which may have been eroded as a result of seepage. It may be that this depression is associated with events that lead to the abandonment of the original outlet channel, the creation of the new channel, and the addition of earthen embankments for additional stability.

There are several areas along the dams toe through which water is currently seeping. Efforts have recently (post-1985) been made to limit the effects of this seepage, the most notable of which is the installation of 14 breather/seepage pipes along the toe. Eleven of these are located south of the downstream outlet. There are two types of breather pipes installed. The first type is a 5 in. diameter heavy plastic pipe which extends vertically 24 in. above the ground surface at the toe of the dam. Connected to the base of each vertical member is a similar 5 in. diameter heavy plastic pipe which issues horizontally from the first, out of which water seeps. Eight of the 11 breather/seepage pipes on the south side of the downstream outlet are of this configuration. The other type consists of 5 in. metal piping which extends horizontally from the toe of the dam slope, and a "T" in the pipe which extends vertically for 5½ in. from the horizontal pipe. The vertical pipe is capped by a 6 in. by 5½ in. metal cap. It should be noted that all vertical pipes have such a cap. The first 3 of the 11 breather/seepage pipes on the south side of the outlet channel are of this latter configuration, and the 3 pipes north of the outlet channel are also. The 11 pipes on the south side of the outlet channel are spaced at 32 ft intervals, and follow the general curvature of the dam. The 3 pipes on the north side are not as evenly spaced, but also follow the dam's curvature.

The overflow spillway is located at the north end of the dam. It is a shallow channel 4 to 5 ft deep on average, with armorized siding to prevent flood-stage erosion. At its origin at the dam, the spillway is 100 ft wide, quickly narrowing to a width of 30 ft which is maintained for the remaining length of the spillway. It flows downslope in a southerly direction for 200 ft, then turns southwesterly and continues for another 175 ft. The channel then divides into a series of braided streams which merge with the braided network of the outlet channel 300 ft further downstream. The channel ultimately re-forms as Swift Creek some distance below. On the north end of the overflow spillway, a small barrow area exists. It appears to be composed of three separate scrapings, similar to a bulldozer pushing materials from a distance, which were used to push materials against the outer bank of the spillway. These three sets of scrapings come from three different directions and end at the earthen embankment located on the north side of the spillway. This gives the north side of the spillway great height and reinforcement, as it receives the most pressure in the event of a flood. The total area encompassed in this lesser barrow area is approximately 130 ft (northeast-southwest) by 110 ft (southeast-northwest).

Two main barrow areas were used during the construction of the dam on East Timothy Lake, one lying inside the dam/lake area, and one lying outside. The barrow area lying outside the dam is located on the south side near the west end of the dam, just off the first corner as one travels northward. The material extracted from this area consists of finely-sorted small-grained gravels. These have been extracted from large banks on the southeast and southwest edges of the barrow area. The northern end of the barrow area is defined by the toe of the dam, forming a triangular-shaped area. The center of this area is filled with a linear pile of large boulders that were not used in the construction. In association with the first barrow area are two roads which provide access to the dam. The first is a 200 ft long road which is found at the first corner of the dam (traveling easterly). This descends from the dam's surface into the barrow area along the toe of the dam. The second road is a fairly visible two-track which begins at the west end of the dam and travels south for a distance of 75 ft. It then turns to the east, descending into the barrow area some 175 ft later. Overall, this barrow area measures approximately 400 ft (northwest-southeast) by 150 ft northeast-southwest). It should be noted that this area forms a basin in which water from the seepage pipes has been collecting. This water drains out of the barrow pit by way of a cut in the southeast corner of the pit, and the water floods the grasslands below, eventually reaching the outlet channel.

A large boulder covered bench with two central depressions is located between the barrow pit and the access road which descends the face of the dam to the pit. The area measures 300 ft (east-west) by 80 ft (north-south). The origin and purpose of this feature are unclear, however, the area is clearly associated with construction or stabilization efforts at the dam.

The second large barrow area is located inside the dam/lake area, where it was reported that materials were pushed up to create the dam. Most of this barrow area remains underwater, but a portion of it can be seen at the north end of the dam in an area which empties into the overflow spillway. This particular area is a shallow basin out of which materials were extracted for the construction of the north end of the dam. It may be that this barrow area served a two-fold purpose in that it not only was utilized as an area for construction materials, but was also a means by which more surface area and water storage could be added to the lake.

HAER Number UT-42-N: Water Lily Lake Dam

Water Lily Lake Dam, constructed in 1920 by Farmers, is a rolled earth structure reinforced with stone rip-rap facing. It is located on the south end of Water Lily Lake in the Swift Creek Drainage of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 470 acre-feet of water in storage, raising the natural lake level 3 ft. A small overflow spillway and a downstream outlet channel are also associated with the dam. The upstream face of the dam is reinforced by large cobbles and small boulders of localized materials which range from 8 in. to 2 ft in diameter The downstream side of the dam is composed of earth and gravel fill materials with minimal stone reinforcement. Water Lily Lake Dam is 80 ft in length (northwest-southeast). It measures 15 to 24 ft wide at the base, stands 4 to 5 ft in height, and is 2 to 4 ft wide at the top.

The upstream outlet consists of a narrow outlet channel and the remaining portion of a gate lift mechanism. The upstream outlet channel is 20 ft long by 10 ft wide by 3 ft deep and ends at the remnant of the gate lift mechanism adjacent to the rock reinforced toe of the dam. The visible portion of the upstream outlet consists of an angle iron frame constructed of two, two-piece 2 in. angle iron vertical members with a single 4 in. angle iron cross member and a 2 in. diameter central pipe. The apparatus is embedded in and buried beneath grass and sediment. There is no apparent gate or handwheel associated with this structure. It is in a poor state of repair and appears to have been out of use for quite some time. The 1985 HABS/HAER recordation by Fraser and Jurale (1985h) reported the headgate as inoperable.

The downstream outlet consists of a deteriorated 2½ ft diameter corrugated metal pipe set into a coarse, pebbly, board-formed concrete headwall. The bottom of the outlet is partially buried by sediment. The exposed portion of the headwall measures 8 ft long by 2 ft wide by 3 ft high. Based upon the diameter of the outlet pipe the partially buried headwall is at least 5 ft high. The outlet channel is 8 ft wide and approximately 3 ft deep. The channel flows southerly dropping over 1000 ft in elevation, eventually joining Swift Creek.

The overflow spillway is a narrow shallow area that passes through a gap between the natural slope and a large rock mound at the east end of the dam. The constructed portion of the spillway consists of a low rock alignment at the southeast end of the dam which guides water approximately 50 ft southwest, where it then merges with the downstream outlet channel.

Prehistoric Sites

A total of five prehistoric lithic scatters were identified during the current inventory (42Dc1411 through 42Dc1415), all of which are located on the shoreline of East Timothy Lake. No additional archaeological sites were identified during this inventory. Following are descriptions of each site:

Site 42Dc1411

This site, located on [redacted] East Timothy Lake, is a medium-density prehistoric lithic scatter consisting of one unifacial tool and a variety of materials including chert, chalcedony, ignimbrite, quartzite, and other cryptocrystalline silicate material types. [redacted] All three stages of lithic manufacturing appear to be represented, including some shatter, with a majority of the flakes representing tertiary stage production. It appears that this site has been subjected to heavy wave erosion and has spread downslope from its original location as a result of this activity. Size sorting due to wave activity is evident, the larger flakes being limited to the upslope areas on the site and smaller, lighter flakes being distributed outward. One large unifacially flaked chert tool was observed at this

site. It measures 4.3 cm long by 3.4 cm wide by 0.9 cm thick. Several large flakes have been removed from one side of the tool, and the edges appear to have some retouch. No additional artifacts and no features were observed at this site.

Site 42Dc1412

This site, located [redacted] East Timothy Lake, consists of a moderate-to-high density lithic scatter exhibiting numerous material types with a centralized debitage concentration and three projectile point fragments (PP1-PP3). Lithic stage production represented at this site is limited to secondary and tertiary flakes, which suggests activities involving tool retouching. The concentrated area, [redacted] is filled with tertiary flakes representing all material types on the site. It is suggested that this concentration may have occurred as part of the size sorting activity which comes as a result of water and wave activity from the lake. This site is impacted by erosional activity as a result of water and wave action, the area is filled with large beach cobbles and gravels which form natural eddies in which flakes are gathered.

Three tool fragments were found at this site which include 2 projectile point bases (PP1, PP2) and one projectile point mid-section (PP3). PP1 is a red chert projectile point base with a concave base. It measures 1.0 cm long by 1.9 cm wide by 0.3 cm thick. The base concavity is 0.3 cm deep and indicates polishing through grinding. This projectile point appears to be most closely related in form to projectile point types 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). PP2 is a white chalcedony projectile point with a concave base. It measures 2.0 cm wide by 2.3 cm long by 0.3 cm thick. It has a basal concavity of 0.5 cm and shows no grinding or polishing action. This projectile point base appears to be most closely related in form to projectile point types 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). PP3 is a non-diagnostic gray chert projectile point mid-section composed of poor material. Distinct hinge fractures on the proximal and distal ends of the tool suggest breakage during production. It measures 1.2 cm long by 0.8 cm wide by 0.4 cm thick. No additional lithic tools and no features were observed at this site.

Site 42Dc1413

This site, located on [redacted] East Timothy Lake [redacted] is a prehistoric lithic scatter composed entirely of quartzite flakes. [redacted] The lithic assemblage at this site displays a maximum density of ten lithics per square meter and is dominated by secondary flakes, however, all stages of lithic reduction are represented. No diagnostic artifacts were observed at this site, but the large number of secondary flakes would suggest that these would be found elsewhere in completed forms. The site is filled with large beach cobbles and gravels, and is impacted by wave and water erosion activity, although no size sorting is apparent. No temporally diagnostic artifacts and no features were observed at this site.

Site 42Dc1414

This site, located on [redacted] East Timothy Lake, is a medium density lithic scatter comprised of approximately 20 flakes and one large, unifacial scraper. [redacted] The lithic assemblage includes quartzite, chalcedony, and chert and is dominated by secondary flakes, however, all stages of lithic reduction are represented. Flakes at this site are distributed over a wide area and do not appear to follow any size sorting patterning. One large unifacially flaked gray quartzite scraper was observed at this site. It measures 6.5 cm long by 4.7 cm wide by 1.2 cm thick. Several large flakes were removed from one side of the tool which exhibits no evidence of retouching. No temporally diagnostic artifacts and no features were observed at this site.

Site 42Dc1415

This site, located [redacted] on [redacted] East Timothy Lake, is comprised of three lithic tools (B1-B3) [redacted] No debitage, additional artifacts, or features were observed in association with this site. Lithic materials identified at this site include chalcedony, quartzite, and chert. The artifacts were found among large beach cobbles and gravels on a mud flat, making them easily visible. A spring enters the lake [redacted] east of the site. Although only three formed tools were identified at this location it was recorded as a site based upon its proximity to the spring and the manufacture of the tools from three distinct source materials.

B1 is a gray chert biface that measures 3.3 cm long by 2.1 cm wide by 0.6 cm thick. B2 is a squared, yellow chalcedony biface with a large hinge fracture on the ventral surface of the artifact. It measures 5.5 cm long by 3.4 cm wide by 0.4 cm thick. B3 is a tan quartzite biface with a defined point. The dorsal surface shows heavy flaking, but the ventral surface is only moderately retouched. It measures 3.4 cm long by 4.2 cm wide by 0.7 cm thick. No additional artifacts and no features were observed at this site.

Garfield Basin

Cultural resource inventories were conducted at four lakes within Garfield Basin of the Yellowstone River Drainage including Five Point, Drift, Bluebell, and Superior. A total of one isolated find (DR-IF-1) and four historic dams (HAER 42-UT-H, HAER 42-UT-L, HAER 42-UT-E, HAER 42-UT-A) were identified and recorded at these lakes.

Isolated Find

One isolated find (DR-IF-1) was identified at Drift Lake during the Garfield Basin portion of the inventory. No additional isolated finds were identified at any of the other three lakes during this portion of the inventory.

DR-IF-1

DR-IF-1, located [redacted] Drift Lake, is a white chalcedony projectile point fragment. It appears to be most closely related in form to the Elko Corner-notched projectile point type of the Elko-Bitterroot Series (10,000-500 B.P.) as defined for the Great Basin culture area (Drager and Ireland 1986:591). It measures 4.1 cm long by 2.7 cm wide by 0.3 cm thick with the distal (tip) end of the projectile point absent due to an apparent impact fracture. No other cultural materials were noted at this location.

Historic Dams

The dams located at Five Point (HAER UT-42-H), Drift (HAER UT-42-E), Bluebell (HAER UT-42-A), and Superior (HAER UT-42-L) 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 dam:

HAER Number UT-42-H: Five Point Lake Dam

Five Point Lake Dam, constructed in 1929 by Farmers, is an "L" shaped earthen-filled structure reinforced with stone rip-rap facing. It is located on the southeast end of Five Point Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 607 acre-feet of water in storage, raising the natural lake levels 11 ft. Four main barrow areas, a low concrete overflow spillway, a small concrete gauging station, and three pieces of abandoned construction equipment were noted in association with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 5 ft in diameter. The long side of the dam is 525 ft in length (east-west) and the short side of the dam is 375 ft in length (northeast-southwest). Over all, the Five Point Lake Dam is 900 ft long (north-south). It measures 30 to 65 ft wide at the base, stands 15 ft in height, and varies from 10 to 12 ft wide at the top.

The upstream outlet consists of a square conduit, covered by a grate constructed of welded rebar in the base of a board-formed, reinforced concrete headwall. The headwall is "U" shaped in plan view, measuring 5 ft long parallel to the dam with 4 ft long walls extending from each end of the headwall at 90°. It is approximately 3 ft 8 in. high and is reinforced with rebar. The actual gate is located within the body of the dam and is not visible to inspection. The gate lift mechanism consists of a 30 in. diameter Hardesty Hand-Wheel Pedestal Lift (Type C) which is supported by a board-formed concrete box on the top of the dam. The box measures 3 ft 7 in. (east-west) by 4 ft 2 in. (north-south) and is 2 ft 8 in. high on the upstream side of the dam and 3 ft 7 in. high on the downstream side of the dam. This box supports the hand-wheel pedestal and provides access and an air vent to the conduit, preventing damage created by vacuum pressure. The vent shaft which leads down to the headgate measures 2 ft 8 in. by 3 ft and is covered with a hinged steel mesh grate secured with a padlock. There are steel bars set into one corner (north)

of the shaft at an angle to create a ladder, descending at approximately 12 in. intervals to the gate below. The depth exceeds 8 ft to the control gate which is not visible through the locked grate. The concrete box exhibits several inscriptions in the concrete. The inscriptions read: (on the west face) “E. A. W,” “Cloyd Seeley,” “Sept. 15, 1940,” “DLG,” “Harry Smith,” “LloyD BooDrich 9/16/40,” “Heber Timothy,” and “Lynn Hansen,” (and on the south face) “ROY Birch 7/16/40.”

The downstream outlet consists of a corrugated metal pipe, approximately 24 in. in diameter, set into a reinforced concrete headwall located on the downstream toe of the dam. The headwall measures 17 ft 10 in. long by 1 ft thick, and is 4 ft 2 in. high. It is constructed of faced board-formed concrete and reinforced with rebar. Water exits the conduit and enters a tributary of Garfield Creek, a braided rocky stream that flows southeasterly into Gem Lake approximately 3000 ft downslope. The banks of the creek are armorized with local, dry-coursed cobble-to-boulder sized stones on both sides of the outlet to provide erosion control along the stream banks during high velocity run-off. This reinforcement starts at the outlet wall and continues downstream for 15 ft on the north side and 21 ft on the south side. The outlet stream is approximately 11 ft wide at the outlet, but narrows to 4 to 6 ft as it continues downstream.

The downstream outlet stream continues southeasterly for approximately 175 ft and flows through a concrete rating flume. This feature consists of two board-formed concrete walls on opposing sides of the stream, with a concrete floor between them and a flow gauging box on the north side of the structure. The rating flume measures 3 ft 6 in. (north-south) by 2 ft (east-west) with 6 in. thick walls. On the south wall of the box is a metal weir gauge, painted white with black numbers and increments. It reads from zero up to two feet of depth.

The overflow spillway prevents high water from breaching the dam by carrying overflow from the southwestern corner of the dam and discharging it into a series of braided streams which mingle with the braided streams of the outlet channel, which flow into Gem Lake. The spillway is a shallow channel averaging 1 to 2 ft deep with armorized banks to prevent flood-stage erosion. At its origin, approximately 80 ft south of the dam, the spillway is 110 ft wide before quickly narrowing to a width of 20 to 25 ft. The spillway consists of a linear board-formed vertical concrete slab curb in association with horizontally laid tabular sandstone slabs and boulders lining a natural saddle on the downstream side. The curb structure slows overflow waters and prevents erosion. The lake bed on the upstream side of the dam is covered by sand, cobbles, pebbles, and a few large boulders. The overflow channel is 110 ft wide where ten concrete slabs are placed upright in the sand, end to end, to create a low curb or wall. The slabs, measuring 5½ in. wide by 16 in. high, average 12 ft in length and are reinforced with rebar. The downstream side of the curb is supported by large sandstone slabs which are stacked 2 to 3 courses high against the concrete slabs to prevent them from being pushed over by the force of overflowing waters. The channel begins to narrow and is lined with very large boulders, some as big as 12 ft in diameter. A section approximately 100 ft downstream (southeast) from the concrete curb has wire netting placed over the rocks to prevent movement and erosion. Water flowing over the spillway flows southeasterly down the broad rocky stream channel which merges with the outlet creek some distance below the dam.

Construction equipment found at Five Point dam includes a stock-drawn earth roller with a log tongue and a large, stock-drawn earth scraper; both of which appear to have been assembled on site, in addition to a large stock-drawn shovel. The earth roller is a 2 ft 6 in. diameter by 5 ft long corrugated metal pipe which has been filled with concrete. A smaller iron pipe, measuring 2⅛ in. diameter, is centered in the concrete and supported on both ends by a 6½ in. diameter metal hub and a milled lumber cross. This pipe creates an axle by which the roller attaches to a wooden frame/harness mechanism. The frame is constructed of rough hewn lumber held together with large wire nails, wire, and metal hardware. The iron stock-drawn earth scraper is a large shovel measuring 4 ft ⅜ in. long by 2 ft 4 in. wide and 2 ft high with a five foot handle. It is assembled with ¾ in. square nuts on ½ in. diameter threaded bolts. The stock-drawn shovel is very large, it has brackets on its sides and a frame which likely attached to some type of supports. The shovel is 2 ft 7 in. wide by 5 ft 8 in. long, with a 1 ft 2 in. maximum depth.

Four main barrow areas were used for materials during the construction of the dam on Five Point Lake. The first barrow pit, located on the southwest side of the dam, measures 150 ft (north-south) by 100 ft (east-west). It has a small ramp extending from its northwest end a distance of approximately 65 ft up to the dam. The second barrow pit, located on the south side of the dam between the outlet channel and the original stream channel, measures 85 ft (north-south) by 130 ft (east-west). It has a gravel road running from its north end heading northwest toward the curve in the dam. It joins the dam there, providing a ramp for the movement of barrow material. The ramp measures approximately 175 ft long. The third barrow pit, located just south of the dam and east of the original channel, is the largest of the four. It measures 150 ft (north-south) by 115 ft (east-west) and has a short ramp leading 30 ft north to the dam. The fourth barrow pit is on the northeastern end of the dam. It measures 125 ft (north-south) by 100 ft (east-west). This barrow pit is higher than the others and access to the dam is level with its south end.

HAER Number UT-42-E: Drift Lake Dam

Drift Lake Dam, constructed in 1928 by Farmers, is an earthen-filled structure reinforced with stone rip-rap facing. The dam is located along the northeast side of Drift Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 197 acre-feet of water in storage, raising the natural lake level 9 ft. One main barrow area, an overflow spillway, and some abandoned construction materials were noted in association with the dam. The upstream face of the dam is reinforced by medium-to-large sized boulders of localized materials which range from 1 to 2 ft in diameter. The downstream face of the dam is constructed of hand placed rip-rap of tabular dry-coursed stones which average 1½ ft wide. The dam is 200 ft in length (north-south). It measures 20 to 48 ft wide at the base, stands 13 ft in height, and is 6 ft wide at the top.

The upstream outlet is a 26 in. diameter corrugated metal pipe, through which stream flow is controlled by a sliding Burnham Model 11 headgate supported on a frame constructed of 3 in. angle iron. The frame runs down the western face of the dam and measures approximately

12 ft in length. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem encased in a 3 in. diameter pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 30 in. diameter handwheel. Presently, a padlocked chain wraps around the framework and the handwheel, effectively locking the gate in the open position. Photographs included in the HABS/HAER inventory completed in 1985 (Fraser and Jurale 1985c) suggest that modifications have been made to the original headgate since that recording. It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Modifications to the headgate appear to be limited to the angle of the concrete supports and outlet pipe. The outlet pipe, measuring 2 ft in diameter, is braced by boulders and free-poured concrete. The framework for the headgate is bolted directly to the concrete. There were no apparent modifications to the dam, spillway, or downstream outlet observed during this recordation. Debris associated with modification of the gate lift mechanism included cut logs with nails, concrete debris, angle iron, and metal pipe fragments.

The downstream outlet is a 2 ft diameter corrugated metal pipe protruding from the eastern downstream toe of the dam. The pipe releases water into a 7 ft wide rocky streambed which intersects the overflow spillway 130 ft downstream. The outlet channel flows north-easterly into Spider Lake approximately 3500 ft below.

The overflow spillway is located at the north end of the dam and consists of a narrow primarily bedrock stream channel. The south side of the spillway entry is marked by a wall 50 ft long by 12 ft wide. The base of this wall is lined with large, vertical slabs of rock up to 3 ft thick by 4 ft wide by 6 ft long. The north side of the spillway consists of the natural slope and is very rocky and covered with small patches of grass. The spillway channel averages 5 to 10 ft wide and the floor is primarily bedrock. Water released through the spillway flows eastward down a rocky stream channel which merges with the dam outlet creek approximately 200 ft below the dam.

A barrow pit was observed on the southeast end of the dam. It measures approximately 185 ft (northwest-southeast) by 35 to 40 ft (northeast-southwest). The north end of this barrow area narrows into a ramp which leads directly onto the surface of the dam.

HAER Number UT-42-E: Bluebell Lake Dam

Bluebell Lake Dam, constructed in 1930 by Farmers, consists of two separate earthen-filled structures reinforced with stone rip-rap facing. Dams 1 and 2 are located at the east end of Bluebell Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 258 acre-feet of water in storage, raising the natural lake level 6 ft. Associated with Dam 1, the northern structure, were one main barrow area and an overflow spillway. Both faces of Dam 1 are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 3 ft in diameter. Dam 1 is 220 ft in length (northwest-southeast). It measures 25 to 35 ft wide at the base, stands 8 ft in height, and is 5 ft wide at the

top. Associated with Dam 2, the southern structure, were one main barrow area and an overflow spillway. Both faces of Dam 2 are reinforced by small-to-medium sized boulders of localized materials which range from 1 to 2 ft in diameter. Dam 2 is 255 in length (northwest-southeast). It measures 12 ft wide at the base, stands 4 ft in height, and is 4 ft wide at the top.

The upstream outlet of Dam 1 is a 32 in. diameter corrugated metal pipe, through which stream flow is controlled by a sliding Burnham Model 11X headgate supported on a frame constructed of 3 in. angle iron. The frame runs down the western face of the dam and measures approximately 12 ft 4 in. in length. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem encased in a 3½ in. pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 36 in. diameter handwheel. Presently, a padlocked chain wraps around the framework and the handwheel, effectively locking the gate in the open position. There are two concrete blocks, measuring 4 ft by 2 ft 6 in, with one rounded corner showing they once encased a corrugated metal pipe located on either side of the gate. They appear to have been abandoned as the dam was improved, and most likely represent a portion of the original outlet which has been replaced. Several large notched logs, which once created a framework for the original headgate, were found throughout the area. It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985a) show a log access structure at the outlet gate which was no longer intact at the time of this recordation.

The downstream outlet of Dam 1 consists of a 32 in. diameter corrugated metal pipe set into a board-formed concrete headwall. The headwall measures 7 ft 4 in. wide by 1 ft 3 in. thick by 3 ft deep. There are four letters inscribed in the top of the wall which read “D R G B.” The concrete is slightly deteriorated and has a crack centered above the outlet pipe. The outlet releases water into a 5 ft wide rocky streambed. The outlet channel flows northerly into Spider Lake.

The overflow spillway of Dam 1 is located on the north side of the dam and consists of a rock lined stream channel. The channel, which averages 2 ft in width, flows in a northeasterly direction for approximately 75 ft. Overflow water then flows through a wet meadow and joins with the dam outlet creek 150 ft below the dam.

A barrow area associated with Dam 1 is located immediately south of the dam on a small hill separating Dam 1 and Dam 2. It measures 80 ft (north-south) by 30 ft (east-west). The north end of the barrow area narrows into a ramp which leads directly onto the dam.

Dam 2, which is a low earth and rock wall located 450 ft south of Dam 1, acts similarly to an overflow spillway. The dam is used only at high water, preventing large amounts of water from flowing into a smaller unnamed lake located to the east. An overflow spillway, approximately 20 ft long, is located in this secondary dam. It consists of an area which averages 1 ft lower than the rest of the dam, and appears to consist of bedrock. High water levels would

release water at this location rather than breaching the top of the dam. A barrow pit which provided materials to create this secondary dam is located 75 ft southwest of the south end of the dam. It measures 100 ft (north-south) by 150 ft (east-west) and is completely inundated by Bluebell Lake at high water. Two earthen ramps lead from the vicinity of the barrow area to the dam. These low ramps were likely used for the transportation of barrow materials during construction of the dam.

HAER Number UT-42-L: Superior Lake Dam

Superior Lake Dam, constructed in 1930 by Farmers, is an earthen-filled structure reinforced with stone rip-rap facing. The dam is located along the northeast side of Superior Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 359 acre-feet of water in storage, raising the natural lake level 16 ft. One main barrow area, an overflow spillway and one piece of abandoned construction equipment was noted in association with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 3 ft in diameter. The dam is 235 ft in length (east-west). It measures 25 to 55 ft wide at the base, stands 15 ft in height, and varies from 5 to 8 ft wide at the top.

The upstream outlet is an 18 in. diameter corrugated metal pipe through which stream flow is controlled by a sliding square headgate of unknown manufacture. The gate lift mechanism consists of a steel plate on an angle iron frame, which is raised or lowered by a 1½ in. diameter threaded stem encased in a 3 in. diameter pipe, which runs down the face of the dam and connects to the gate. The gate lift mechanism control is located on top of the dam in a metal box which measures 2 ft high by 2 ft 2 in. wide. The pipe casing passes through the control box and protrudes 2 ft 10 in. from the opposite side. No manufacturing information was found on the gate or the box, however, "PIONEER ½ NPTF111" was stamped into a small steel valve located on the upper portion of the pipe casing. The interior of the control box was not accessible. Two notched logs protruding horizontally from the face of the dam on either side of the gate stem indicate, along with numerous large notched logs found along the spillway and shores of Superior Lake, that the dam control gate was once supported by a wooden crib structure. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985g) show the crib structure to be intact at that time. Abandoned fragments of angle iron, pipe, and sheet metal also exist in the vicinity of the currently used headgate, indicating modifications have been made to the gate lift mechanism and its housing.

The downstream outlet consists of a 7 ft wide by 2 ft 6 in. high concrete headwall resting on a concrete footing which extends 10 in. from the base of the headwall. The vertical face of this platform, which is underwater at an unknown depth, is constructed of board-formed concrete which appears to have a plywood facing. The outlet releases water into a 7 ft wide channel cut directly through the bedrock for a distance of 55 ft creating vertical rock walls approximately 5 ft high. The channel then changes to a rock and cobble streambed and continues downslope through thick brush and intersects with the overflow spillway 150 ft downstream.

The overflow spillway is located directly adjacent to the northeast end of the dam. It is constructed of concrete and dry-coursed stone stacked in rectangular cribs fashioned from galvanized wire. It is 7 ft 5 in. wide at the high water line at the dam. The cutbank is 2 ft 6 in. deep by 20 ft long and has been lined on both sides with a series of stone filled wire cribs. There is a thin, felt-like liner beneath the cribbing, likely to help prevent erosion. At the south end of this channel is a concrete ledge measuring 2 ft 7 in. wide by 5 ft 6 in. long by 3 in. thick. An engraving reading "- AN WIntERTON" is located on the surface of the east side. At the ledge, the spillway drops approximately 4 ft in depth to a concrete pad below. Directly below the concrete ledge the rock cribbing is stacked three courses high, the side walls are stacked four courses high, and all are capped by the concrete ledge. A single 2 by 4 is hanging from the concrete on the west side of the upper concrete shelf. The rock cribbing side walls measure 8 ft 1 in. high on the west side, and 7 ft 10 in. high on the east side. The cribbing is stacked at an angle, forming a "V" shape which is approximately 4 ft wide at the bottom. The lower concrete pad measures 4 ft 5 in. long by 2 ft wide by 5 in. thick, and it appears that there is a felt-like liner under both the cribbing and the concrete pad. This pad breaks the fall of the water preventing erosion of the channel. The area then gives way to a section of bedrock and boulders with a deep (>6 ft) cutbank on both sides for approximately 14 ft downstream (south), before turning into a rocky streambed which merges with the dam outlet creek approximately 150 ft below the dam.

The barrow area is located on the southwest side of the dam and measures 118 ft (north-south) by 100 ft (east-west). Its location on the west side of the dam provides easy access for the movement of materials from the barrow pit for construction of the dam.

A large stock-drawn shovel, identical to the one found at Five Point Lake Dam (HABS/HAER UT-42-H), was found near the downstream end of the spillway. The stock-drawn shovel is very large, it has brackets on its sides and a frame which likely attached to some type of supports. The shovel is 2 ft 7 in. wide by 5 ft 8 in. long with a 1 ft 2 in. maximum depth.

RECOMMENDATIONS

A cultural resource inventory was carried out at Farmers, Deer, White Miller, East Timothy, Water Lily, Five Point, Drift, Bluebell, and Superior Lakes for the Section 203 EA. A total of five new prehistoric cultural resource sites (42Dc1411 through 42Dc1415) were identified, recorded, and evaluated for eligibility to the NRHP as part of this project. In addition, nine historic dams/structures previously documented during a 1995 HAER survey (Fraser and Jurale 1985a-i; Fraser 1986) were revisited. These dam sites (HAER Numbers 42-UT-A, 42-UT-D, 42-UT-E, 42-UT-F, 42-UT-G, 42-UT-H, 42-UT-L, 42-UT-N, and 42-UT-O) were recorded on Utah Office of Preservation Historic Site (USHS) Forms and re-evaluated for eligibility to the NRHP. Two isolated finds (ET-IF-1 and DR-IF-1) 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 significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> (A) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (B) that are associated with the lives of persons significant in our past; or
>
> (C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) that have yielded, or may be likely to yield, information important in prehistory or history.

Of the 14 cultural resource sites evaluated during this inventory a total of nine previously identified historic dams/structures (HAER Numbers 42-UT-A, 42-UT-D, 42-UT-E, 42-UT-F, 42-UT-G, 42-UT-H, 42-UT-L, 42-UT-N, and 42-UT-O) and two newly identified prehistoric sites (42Dc1411 and 42Dc1412) are recommended **ELIGIBLE** to the NRHP. Following are individual site recommendations based upon the criteria provided above:

The historic dams/structures at Farmers (HAER UT-42-G), Deer (HAER UT-42-D), White Miller (HAER UT-42-O), East Timothy (HAER UT-42-F), Water Lily (HAER UT-42-N) Five Point (HAER UT-42-H), Drift (HAER UT-42-E), Bluebell (HAER UT-42-A), and Superior (HAER UT-42-L) Lakes must be evaluated both as significant individual resources and as components of a much larger irrigation network. These dams/structures 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 Farmers Irrigation Company and the continuing efforts of the Moon Lake Water Users Association 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/structures. The dams/structures 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/structures at Farmers (HAER UT-42-G), Deer (HAER UT-42-D), White Miller (HAER UT-42-O), East Timothy (HAER UT-42-F), Water Lily (HAER UT-42-N) Five Point (HAER UT-42-H), Drift (HAER UT-42-E), Bluebell (HAER UT-42-A), and Superior (HAER UT-42-L) Lakes are each recommended **ELIGIBLE** to the NRHP under criteria A and C.

Sites 42Dc1411 and 42Dc1412 possess the potential to yield further information important to the understanding of aboriginal occupation of mountain lake margins in the High Uintas. Site 42Dc1412 possesses temporally diagnostic artifacts. Based upon the nature of the sediments both 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 42Dc1411 and 42Dc1412 are recommended **ELIGIBLE** to the NRHP under criterion D.

Sites 42Dc1413, 42Dc1414, and 42Dc1415 represent surface scatters or small, localized densities of lithic debitage. Erosion of sediments at these sites has been exacerbated, in part, due to their seasonal innundation by East Timothy Lake. 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 42Dc1413, 42Dc1414, and 42Dc1415 are recommended **NOT** eligible to the NRHP.

Seasonal innundation of lake shore margins at East Timothy Lake 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 localities, 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/structures at Farmers, Deer, White Miller, East Timothy, Water Lily, Five Point, Drift, Bluebell, and Superior 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 Yellowstone River 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.

REFERENCES CITED

Aikens, M. C., and D. B. Madsen
1986 Prehistory of the Eastern Area. In *Great Basin,* edited by Warren L. D'Azevedo, pp. 149-160. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Alexander, T., and L. Arrington
1964 The Utah Military Frontier, 1872-1912 Forts Cameron, Thornburgh, and Duchesne. *Utah Historical Quarterly* 32:330-54.

Bender, H.
n.d. *Uintah Railway: The Gilsonite Route*. Howell-North Books, Berkeley, California.

Callaway, D., J. Janetski, and O. Stewart
1986 Ute. In *Great Basin,* edited by Warren L. D'Azevedo, pp. 336-367. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Central Utah Water Conservancy District
1996 *Draft Environmental Impact Statement on the Upalco Unit, Uinta Basin Replacement Project*. Central Utah Water Conservancy District and U.S. Department of the Interior.

Clemmer, R., and O. Stewart
1986 Treaties, Reservations, and Claims. In *Great Basin,* edited by Warren L. D'Azevedo, pp. 525-557. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Daughters of Utah Pioneers
1948 *Early History of Duchesne County*. Art City Publishing Company, Springville, Utah.

Department of Natural Resources
1993 Starvation State Park. Brochure produced by the State of Utah Natural Resources, Division of Parks and Recreation, Salt Lake City, Utah.

Department of Public Instruction
1933 Utah–Resources and Activities. Supplement to the Utah State Courses of Study for Elementary and Secondary Schools, Department of Public Instruction, Salt Lake City.

Drager, Dwight L. and Arthur K. Ireland (editors)
1986 *The Seedskadee Project: Remote Sensing in Non-site Archeology*. United States

Department of the Interior, National Park Service, Southwestern Region, Southwest Cultural Resources Center, Division of Cultural Research, Branch of Remote Sensing, Albuquerque, New Mexico and Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah, Interagency Agreement No. 2-07-40-S3351. Copies Available from Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah.

Elliott, R.
1987 [1973] *History of Nevada.* 2nd ed. University of Nebraska Press, Lincoln.

Fraser, Clayton B.
1986 Determination of Eligibility to the National Register of Historic Places Inventory for the High Mountain Dams and Tunnel in the Upalco Unit of the Central Utah Project. Fraserdesign, Loveland, Colorado.

Fraser, Clayton and James Jurale
1985a Bluebell Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-A.
1985b Deer Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-D.
1985c Drift Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-E.
1985d East Timothy Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-F.
1985e Farmers Lake Tunnel, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-G.
1985f Five Point Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-H.
1985g Superior Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-L.
1985h Water Lily Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-N.
1985i White Miller 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.

Fuller, C.
1978 History of the Uinta Basin. In *Survey and Evaluation of Archaeological and Historical Resources Central Utah Project, 1977*, edited by E. B. Sisson. University of Utah Archaeological Center, Salt Lake City.

Heizer, R., and M. A. Baumhoff
1970 *Big Game Hunters in the Great Basin: A Critical Review of the Evidence*. Contributions of the University of California Archaeological Research Facility 7, Berkeley, California.

Jennings, Jesse D.
1986 Prehistory: Introduction. In *Great Basin,* edited by Warren L. D'Azevedo, pp. 113-119. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.
1978 Prehistory of Utah and the Eastern Great Basin. *University of Utah Anthropological Papers* 98. University of Utah Press, Salt Lake City:

Jones K., and K. MacKay
1980 Cultural Resources Existing Data Inventory Vernal District, Utah. Reports of Investigations 80-18. University of Utah Archaeological Center, Salt Lake City.

Knowlton, E.
n.d. *History of Highway Development in Utah.* Utah State Department of Highways, Salt Lake City:

Larsen, G.
1965 *Outline History of Territorial Utah*. Brigham Young University Press, Provo.

Lindsay, L. W.
1976 Unusual or Enigmatic Stone Artifacts: Post, Pipes, Points, and Pendants from Utah. *Antiquities Section Selected Papers* 2(8). Utah State Historic Preservation Office, Salt Lake City:

Loosle, Byron
1995 Letter to Sagebrush Archaeological Consultants, Ogden, Utah.
1996 *Garfield Basin Reconnaissance, Duschene County, Utah*. Utah State Project No. U-93-FS-0857f. United States Forest Service, Ashley National Forest, Vernal, Utah.

Madsen, David B.
1982 Get it Where the Gettin's Good: A Variable Model of Great Basin Subsistence and Settlement Based on Data from the Eastern Great Basin. In *Man and Environment in the Great Basin*, edited by D. B. Madsen and J. F. O'Connell. Society for American Archaeology Paper 2, Washington, D.C.

Marwitt, J. P.
1986 Fremont Cultures. In *Great Basin,* edited by Warren L. D'Azevedo, pp. 161-172. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Morgan, D. L.
1964 *Jedediah Smith and the Opening of the West*. Lincoln: University of Nebraska. Originally published in 1953 by Dale L. Morgan.
1948 Historic trails map of Utah. Utah Department of Publicity and Industrial Development, Salt Lake City.
1947 *The Great Salt Lake*. Albuquerque: University of New Mexico Press.

O'Neil, F.
1968 An Anguished Odyssey: The Flight of the Utes, 1905-1908. *Utah Historical Quarterly* 36(4):315-327.

Polk, Michael R.
1992 *Cultural Resources Overview of the Uinta Basin Replacement Project, Uinta Basin, Utah.* Sagebrush Archaeological Consultants Report No. 510, Ogden, Utah.

Roylance, W. J.
1982 *Utah: A Guide to the State*. Utah Arts Council, A Guide to the State Foundation, Salt Lake City:

Richards, Stuart H., Lynn H. Davis, and Richard E. Griffen
1966 *Irrigation and Canal Companies of Utah*. Utah State University, Logan, Utah.

Sayers, Daniel O. and Michael R. Polk
2001 *A Cultural Resources Survey of the Big Sand Wash Reservoir and Other Ancillary Features of the Section 203 Uinta Basin Replacement Project, Duchesne County, Utah.* Sagebrush Consultants Report No. 1163, Ogden, Utah.

Schroedl, Allan
1976 The Archaic of the Northern Colorado Plateau. Ph.D. Dissertation, University of Utah.

Scott, Thomas
1987 *Garfield Basin CRM Reconnaissance, Duschene County, Utah*. Utah State Project No. U-87-FS-0648f. United States Forest Service, Ashley National Forest, Vernal, Utah.

Stalheim, D. B., J. Jurale, and C. W. Fuller
1983 National Register of Historic Places inventory form for irrigation canals in the Uinta Basin, Utah. HAER No. 30, Utah State No. UT-84-0021. National Park Service, Rocky Mountain Regional Office, Denver.

Steward, J.
1938 Basin-Plateau Aboriginal Sociopolitical Groups. *Bureau of American Ethnology Bulletin 120*. Smithsonian Institution, Washington D.C.

Strahorn, A. T.
1924 *Soil Survey of the Ashley Valley, Utah*. U.S. Department of Agriculture, Bureau of Soils. Government Printing Office, Washington D.C.

U.S. Department of Agriculture (USDA).
n.d. Map–Ashley National Forest. United States Forest Service, Intermountain Region, Ogden, Utah.
1989 Map–High Uintas Wilderness. United States Forest Service, Intermountain Region, Ogden, Utah.

Utah State Historical Society (USHS)
1988 Utah's Counties. Beehive History No. 14, Salt Lake City.

Van Cott, J. W.
1990 *Utah Place Names*. University of Utah Press, Salt Lake City:

Zier, Chris
1984 A *Class II Cultural Resources Inventory of the U.S. Army Dugway Proving Ground, West-Central, Utah*. Metcalf-Zier Archaeologist, Inc., Eagle, Colorado.

APPENDIX A
USHS Site Forms

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Bluebell Lake Dam (HAER No.: UT-42-A)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 5W ***Section:*** 31

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 543800mE 4505060mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Garfield Basin, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 5W., SE¼ NW¼ SW¼ S. 31 (Approx. acres: Dam #1 - 0.8 ac., Dam #2 - 2.06 ac., 2.86 ac 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:*** 1239/7:1-25
_ ***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 Sandy Chynoweth Pagano ***Date:*** 09-8-01
Sagebrush Consultants, L.L.C.

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.

Bluebell Lake Dam consists of two separate earthen-filled structures reinforced with stone rip-rap facing. Dams 1 and 2 are located at the east end of Bluebell Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 258 acre-feet of water in storage, raising the natural lake level 6 ft. Associated with Dam 1, the northern structure, were one main barrow area and an overflow spillway. Both faces of Dam 1 are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 3 ft in diameter. Dam 1 is 220 ft in length (northwest-southeast). It measures 25 to 35 ft wide at the base, stands 8 ft in height, and is 5 ft wide at the top. Associated with Dam 2, the southern structure, were one main barrow area and an overflow spillway. Both faces of Dam 2 are reinforced by small-to-medium sized boulders of localized materials which range from 1 to 2 ft in diameter. Dam 2 is 255 in length (northwest-southeast). It measures 12 ft wide at the base, stands 4 ft in height, and is 4 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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***		__ ***Military***	
__ ***Conservation***	__ ***Health/Medicine***	__ ***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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet of Dam 1 is a 32 in. diameter corrugated metal pipe, through which stream flow is controlled by a sliding Burnham Model 11X headgate supported on a frame constructed of 3 in. angle iron. The frame runs down the western face of the dam and measures approximately 12 ft 4 in. in length. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem encased in a 3½ in. pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 36 in. diameter handwheel. Presently, a padlocked chain wraps around the framework and the handwheel, effectively locking the gate in the open position. There are two concrete blocks, measuring 4 ft by 2 ft 6 in, with one rounded corner showing they once encased a corrugated metal pipe located on either side of the gate. They appear to have been abandoned as the dam was improved, and most likely represent a portion of the original outlet which has been replaced. Several large notched logs, which once created a framework for the original headgate, were found throughout the area. It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985) show a log access structure at the outlet gate which was no longer intact at the time of this recordation.

The downstream outlet of Dam 1 consists of a 32 in. diameter corrugated metal pipe set into a board-formed concrete headwall. The headwall measures 7 ft 4 in. wide by 1 ft 3 in. thick by 3 ft deep. There are four letters inscribed in the top of the wall which read "D R G B." The concrete is slightly deteriorated and has a crack centered above the outlet pipe. The outlet releases water into a 5 ft wide rocky streambed. The outlet channel flows northerly into Spider Lake.

The overflow spillway of Dam 1 is located on the north side of the dam and consists of a rock lined stream channel. The channel, which averages 2 ft in width, flows in a northeasterly direction for approximately 75 ft. Overflow water then flows through a wet meadow and joins with the dam outlet creek 150 ft below the dam.

A barrow area associated with Dam 1 is located immediately south of the dam on a small hill separating Dam 1 and Dam 2. It measures 80 ft (north-south) by 30 ft (east-west). The north end of the barrow area narrows into a ramp which leads directly onto the dam.

Dam 2, which is a low earth and rock wall located 450 ft south of Dam 1, acts similarly to an overflow spillway. The dam is used only at high water, preventing large amounts of water from flowing into a smaller unnamed lake located to the east. An overflow spillway, approximately 20 ft long, is located in this secondary dam. It consists of an area which averages 1 ft lower than the rest of the dam, and appears to consist of bedrock. High water levels would release water at this location rather than breaching the top of the dam. A barrow pit which provided materials to create this secondary dam is located 75 ft southwest of the south end of the dam. It measures 100 ft (north-south) by 150 ft (east-west) and is completely inundated by Bluebell Lake at high water. Two earthen ramps lead from the vicinity of the barrow area to the dam. These low ramps were likely used for the transportation of barrow materials during construction of the dam.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

5. HISTORY (Continued)

HISTORIC SITE FORM

(CONTINUATION SHEET)

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

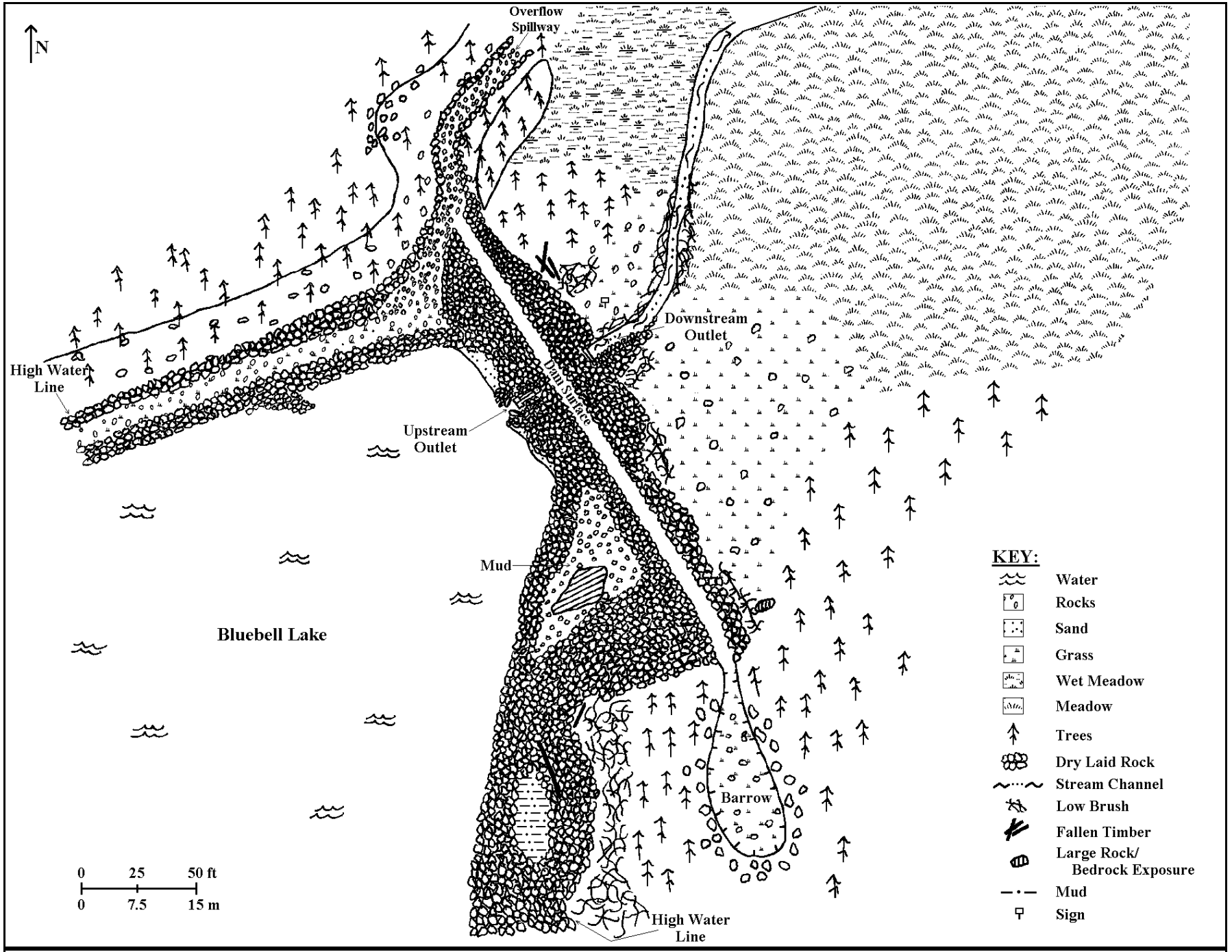
The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

References Cited

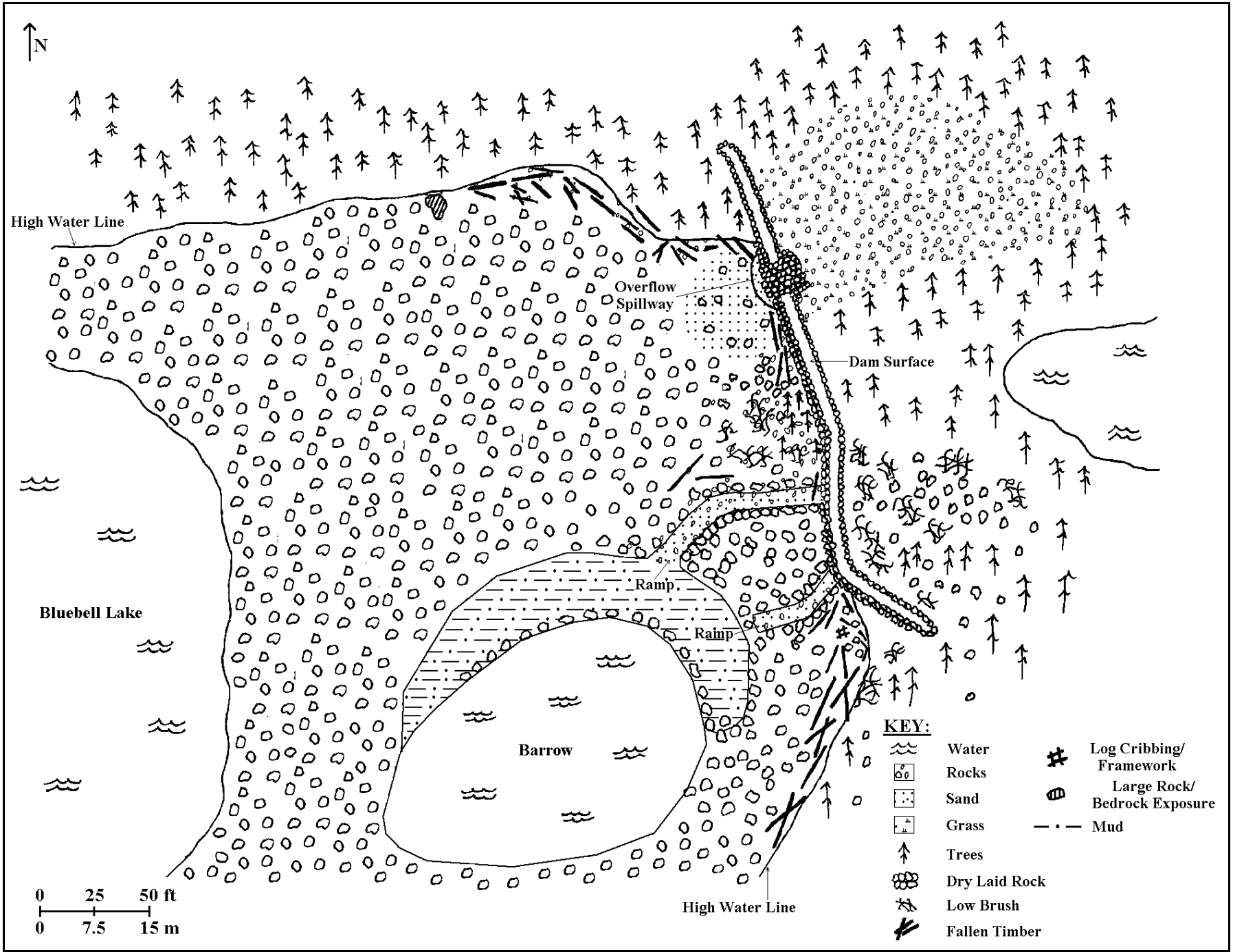
Fraser, Clayton and James Jurale
1985 Bluebell Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-A.

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.

Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).



HAER UT-42-A. Bluebell Lake Dam #1



HAER UT-42-A. Bluebell Lake Dam #2

HAER UT-42-A. Bluebell Lake Dam. Overview of overflow spillway at Dam #2; view to the east-northeast.

HAER UT-42-A. Bluebell Lake Dam. Overview of overflow spillway at Dam #2; view to the west-southwest.

HAER UT-42-A. Bluebell Lake Dam. Overview of dam surface at south end of Dam #2; view to the south-southeast.

HAER UT-42-A. Bluebell Lake Dam. Overview of dam surface at north end of Dam #2; view to the north-northwest.

HAER UT-42-A. Bluebell Lake Dam. Overview of dam Ramp #1 from barrow area to Dam #2; view to the west-southwest.

HAER UT-42-A. Bluebell Lake Dam. Overview of Ramp #2 from barrow area to Dam #2; view to the northeast.

HAER UT-42-A. Bluebell Lake Dam. Overview of west face of Dam #2; view to the east-northeast.

HAER UT-42-A. Bluebell Lake Dam. Detail of wooden framework with nails near south end of Dam #2; close-up view.

HAER UT-42-A. Bluebell Lake Dam. Overview of lake; view to the northwest.

HAER UT-42-A. Bluebell Lake Dam. Overview of lake; view to the south.

HAER UT-42-A. Bluebell Lake Dam. Overview of gate lift mechanism on upstream outlet at Dam #1; view to the northeast.

HAER UT-42-A. Bluebell Lake Dam. Headgate at Dam #1; close-up view.

HAER UT-42-A. Bluebell Lake Dam. Overview of overflow spillway at Dam #1; view to the north-northeast.

HAER UT-42-A. Bluebell Lake Dam. Notched log remnants in spillway at Dam #1; close-up view.

HAER UT-42-A. Bluebell Lake Dam. Overview of barrow area in south end of Dam #1; view to the south.

HAER UT-42-A. Bluebell Lake Dam. Overview of upstream side of Dam #1; view to the north.

HAER UT-42-A. Bluebell Lake Dam. Overview of dam surface at Dam #1; view to the northwest.

HAER UT-42-A. Bluebell Lake Dam. Overview of Dam #1 upstream outlet and west side of dam; view to the southeast.

HAER UT-42-A. Bluebell Lake Dam. Overview of Dam #1; view to the south-southeast.

HAER UT-42-A. Bluebell Lake Dam. Overview of downstream outlet at Dam #1; close-up view.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Deer Lake Dam (HAER No.: UT-42-D)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 3N ***Range:*** 4W ***Section:*** 8

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 553925mE 4502160mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Mount Emmons, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

Legal Description (include acreage): T. 3N., R. 4W., NW¼ NW¼ SE¼ S. 8
T. 3N., R. 4W., NE¼ NE¼ SW¼ S. 8 (Approx. acres, 0.92 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:*** 1239/3:1-14
_ ***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 Andrew Williamson, Sagebrush Consultants, L.L.C. ***Date:*** 08-15-01

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 Deer Lake Dam is a clay-cored structure ballasted by rolled earth and reinforced with stone rip-rap facing. The dam is located at the south end of Deer Lake in the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 249 acre-feet of water in storage, raising the natural lake level approximately 14 ft. An overflow spillway and a wooden measuring weir structure located on the downstream outlet channel are associated with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 5 ft in diameter. The dam is 152 ft in length (northeast-southwest). It measures 30 to 85 ft wide at the base, stands 15 to 17 ft in height, and is 7 to 10 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet is a 3 ft diameter corrugated metal pipe that has been fitted into a 3 by 3 ft stone and concrete lined tunnel. The base of this tunnel is also constructed of concrete into which wire meshing has been set as reinforcement. Stream flow into the outlet pipe is controlled by a 32 in. Hardesty Manufacturing Company Model 110 Headgate. The gate lift mechanism consists of an iron gate on an angle iron frame, which is raised and lowered by a 2 in. diameter threaded stem encased in a 3 in. pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 29 in. diameter Hardesty Manufacturing Company Model 2003D handwheel. Presently, a padlocked chain secures the handwheel to the iron frame, thus locking the gate in an open position. The handwheel is set into a log crib and stone framework. It extends approximately 32 ft out from the face of the dam into the lake, and has a height of 17 ft. The log crib frame is constructed of axe-hewn and notched logs that average 8 to10 in. in diameter. The logs are fastened together by 6 in. nails, and the interior of the frame is filled with large angular rocks. The stem portion of this control feature has been modified, as indicated by photographs included in the 1985 HABS/HAER recordation by Fraser and Jurale. It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Modifications to the headgate appear to be limited to the angle change.

The downstream outlet is a 2 by 2 ft square opening constructed of coursed, dry-laid, tabular stone built into the downstream toe of the dam. The outlet releases water into a 2½ ft wide rocky streambed which flows through the remains of a log crib measuring weir approximately 50 ft downstream from the outlet.

The weir is constructed with local timber that has been both sawn and axe-hewn, then planed by hand to create flat timbers for the walls and floors of the structure. This structure resembles the remnants of what was once used as a measuring weir. Water enters the structure through a log channel 6 ft wide and 18 ft in length. The channel has a wooden floor, but the wall height is unknown due to collapse and deterioration of the vertical timbers. After passing through this narrow channel, water flows into a rectangular 12 ft wide by 18 ft long log crib. The northern wall of the structure remains intact, held upright by vertical posts and trees, reaching a height of 5 ft. The southern wall of the structure has tipped inward and lies relatively intact at a 45° angle. Water currently flows beneath the structure. The remnant of a small wood plank footbridge was identified approximately 100 ft downstream from the crib structure.

An overflow spillway on the northeast end of the dam prevents high water from breaching the dam by discharging water downstream from its outlet. At its origin, the overflow spillway is 10 to 12 ft wide and drops 3 ft below the dam surface. It quickly widens and loses elevation, sending water downhill through a channel lined with large boulders. A log which has been placed perpendicular to the overflow spillway is located near its beginning. It is believed that due to the main trail crossing the dam and spillway before heading up the other side of the valley, this log may be the remnants of a footbridge to carry traffic along the trail. Water released through the spillway flows southeasterly down a rocky stream channel which merges with the outlet creek 150 ft below the dam.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80)

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued)

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter 1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter 1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

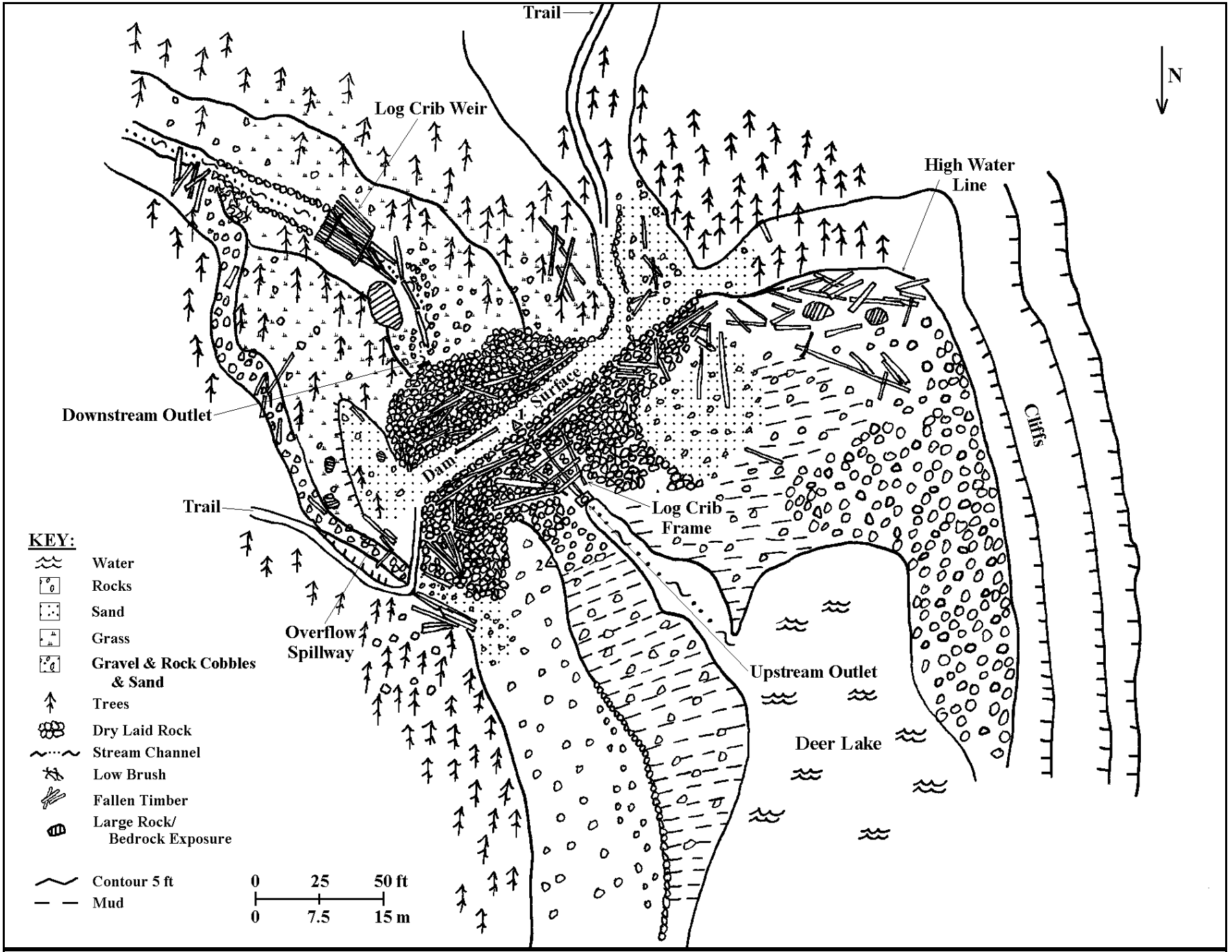
The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

References Cited

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

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.

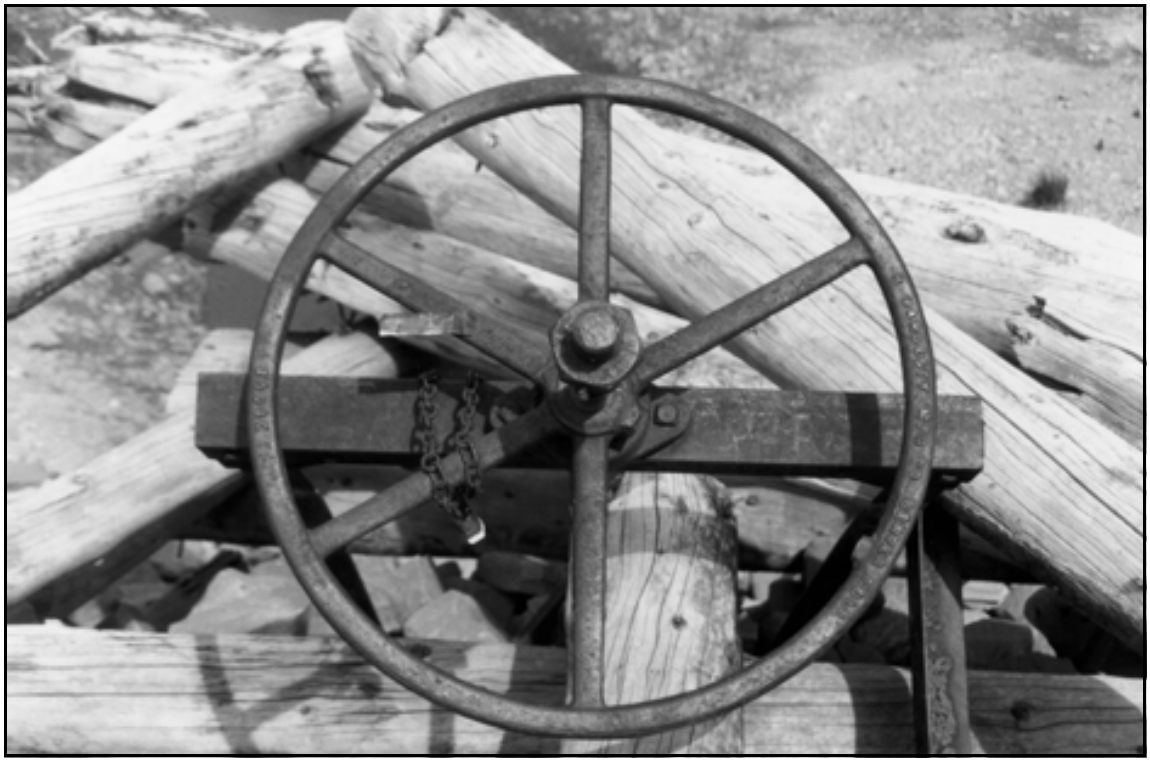
Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).



HAER UT-42-D. Deer Lake Dam.

HAER UT-42-D. Deer Lake Dam. Overview showing profile of dam from the low water mark; view to the southeast.

HAER UT-42-D. Deer Lake Dam. Overview of headgate, cribbing, and platform on upstream face of dam; view to the south.



HAER UT-42-D. Deer Lake Dam. Handwheel; close-up view.

HAER UT-42-D. Deer Lake Dam. Headgate; close-up view.

HAER UT-42-D. Deer Lake Dam. Downstream outlet looking toward the dam showing wire-reinforced concrete flooring and stone walls of outlet tunnel; view to the north.

HAER UT-42-D. Deer Lake Dam. Overview of downstream face of dam showing outlet channel; view to the north.

HAER UT-42-D. Deer Lake Dam. Overview looking downstream at overflow spillway from the north end of the dam. Swift Creek Trail is visible in left side of frame and remnants of possible footbridge in foreground; view to the southeast.

HAER UT-42-D. Deer Lake Dam. Overview of possible measuring weir downstream from dam; view looking upstream to the northwest.

HAER UT-42-D. Deer Lake Dam. View from the dam at the cribbed wooden structure in the outlet channel; view to the southeast.

HAER UT-42-D. Deer Lake Dam. Collapsed wooden footbridge across downstream outlet channel; close-up view to the east.

HAER UT-42-D. Deer Lake Dam. View of western shoreline during low water; view to the west.

HAER UT-42-D. Deer Lake Dam. View showing profile of the dam from the low water mark; view to the south.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Drift Lake Dam (HAER No.: UT-42-E)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 5W ***Section:*** 31

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 543380mE 4505690mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Garfield Basin, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 5W., NE¼ SE¼ NE¼ S. 31 (Approx. acres, 1.72 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:*** 1239/5:1-19
__ ***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 Sandy Chynoweth Pagano ***Date:*** 09-9-01
Sagebrush Consultants, L.L.C.

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.

Drift Lake Dam is an earthen-filled structure reinforced with stone rip-rap facing. The dam is located along the northeast side of Drift Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 197 acre-feet of water in storage, raising the natural lake level 9 ft. One main barrow area, an overflow spillway, and some abandoned construction materials were noted in association with the dam. The upstream face of the dam is reinforced by medium-to-large sized boulders of localized materials which range from 1 to 2 ft in diameter. The downstream face of the dam is constructed of hand placed rip-rap of tabular dry-coursed stones which average 1½ ft wide. The dam is 200 ft in length (north-south). It measures 20 to 48 ft wide at the base, stands 13 ft in height, and is 6 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet is a 26 in. diameter corrugated metal pipe, through which stream flow is controlled by a sliding Burnham Model 11 headgate supported on a frame constructed of 3 in. angle iron. The frame runs down the western face of the dam and measures approximately 12 ft in length. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem encased in a 3 in. diameter pipe which runs down the face of the dam and connects to the gate. The gate lift mechanism is controlled by a 30 in. diameter handwheel. Presently, a padlocked chain wraps around the framework and the handwheel, effectively locking the gate in the open position. Photographs included in the HABS/HAER inventory completed in 1985 (Fraser and Jurale 1985) suggest that modifications have been made to the original headgate since that recording. It appears that the framework once stood in an upright/vertical position above the gate, however, during this recordation it was noted that the gate is set at an angle parallel to the slope of the dam. Modifications to the headgate appear to be limited to the angle of the concrete supports and outlet pipe. The outlet pipe, measuring 2 ft in diameter, is braced by boulders and free-poured concrete. The framework for the headgate is bolted directly to the concrete. There were no apparent modifications to the dam, spillway, or downstream outlet observed during this recordation. Debris associated with modification of the gate lift mechanism included cut logs with nails, concrete debris, angle iron, and metal pipe fragments.

The downstream outlet is a 2 ft diameter corrugated metal pipe protruding from the eastern downstream toe of the dam. The pipe releases water into a 7 ft wide rocky streambed which intersects the overflow spillway 130 ft downstream. The outlet channel flows north-easterly into Spider Lake approximately 3500 ft below.

The overflow spillway is located at the north end of the dam and consists of a narrow primarily bedrock stream channel. The south side of the spillway entry is marked by a wall 50 ft long by 12 ft wide. The base of this wall is lined with large, vertical slabs of rock up to 3 ft thick by 4 ft wide by 6 ft long. The north side of the spillway consists of the natural slope and is very rocky and covered with small patches of grass. The spillway channel averages 5 to 10 ft wide and the floor is primarily bedrock. Water released through the spillway flows eastward down a rocky stream channel which merges with the dam outlet creek approximately 200 ft below the dam.

A barrow pit was observed on the southeast end of the dam. It measures approximately 185 ft (northwest-southeast) by 35 to 40 ft (northeast-southwest). The north end of this barrow area narrows into a ramp which leads directly onto the surface of the dam.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued)

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

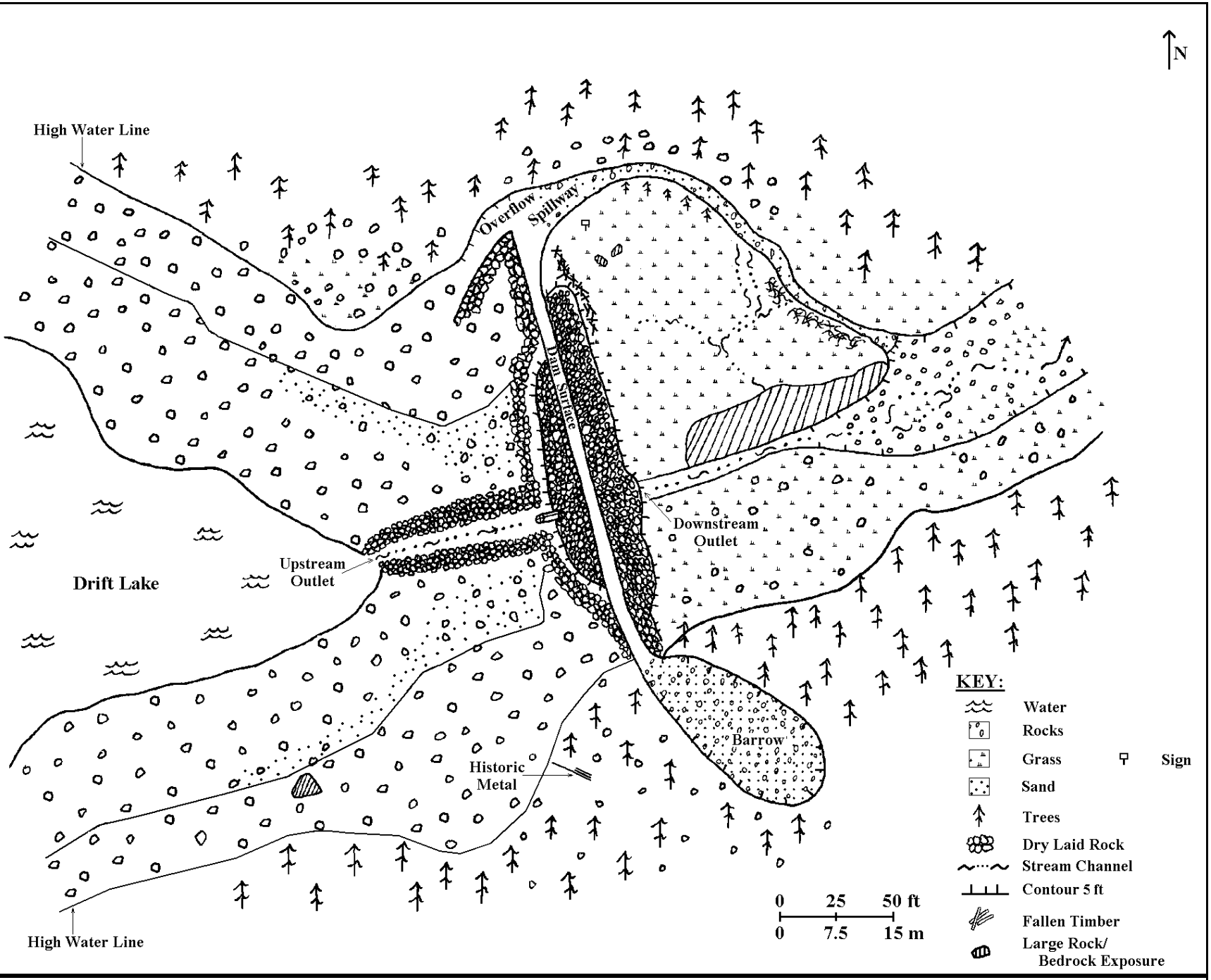
The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

References Cited

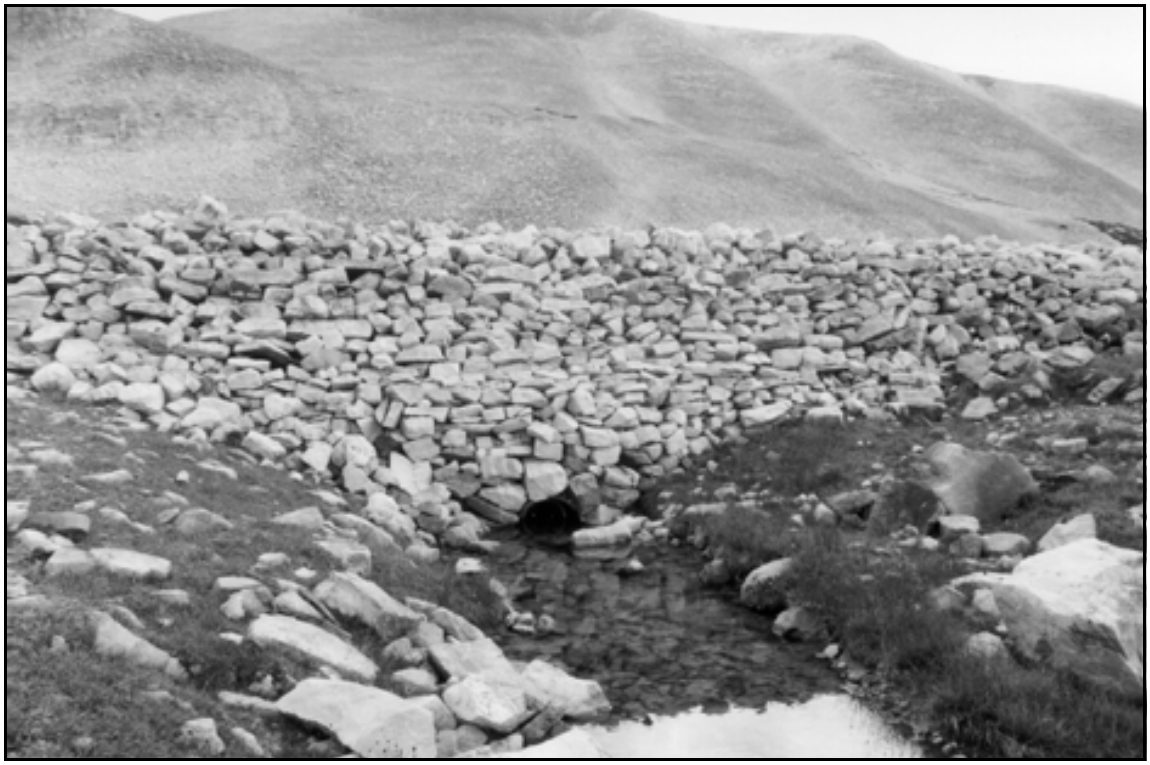
Fraser, Clayton and James Jurale
1985 Drift Lake Dam, Duchesne County, Utah: Photographs, Written Historical and Descriptive Data. Historic American Engineering Record, National Park Service, HAER. No. UT-42-E.

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.

Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).



HAER UT-42-E. Drift Lake Dam.



HAER UT-42-E. Drift Lake Dam. Overview of downstream outlet of dam; view to the west-southwest.

HAER UT-42-E. Drift Lake Dam. Overview of downstream outlet and east side of dam; view to the northwest.

HAER UT-42-E. Drift Lake Dam. Overview of spillway channel; view to the south.

HAER UT-42-E. Drift Lake Dam. Overview of spillway at north end of dam; view to the northeast.

HAER UT-42-E. Drift Lake Dam. Overview of lake from north end of dam; view to the southwest.

HAER UT-42-E. Drift Lake Dam. Overview of lake from south end of dam; view to the northwest.

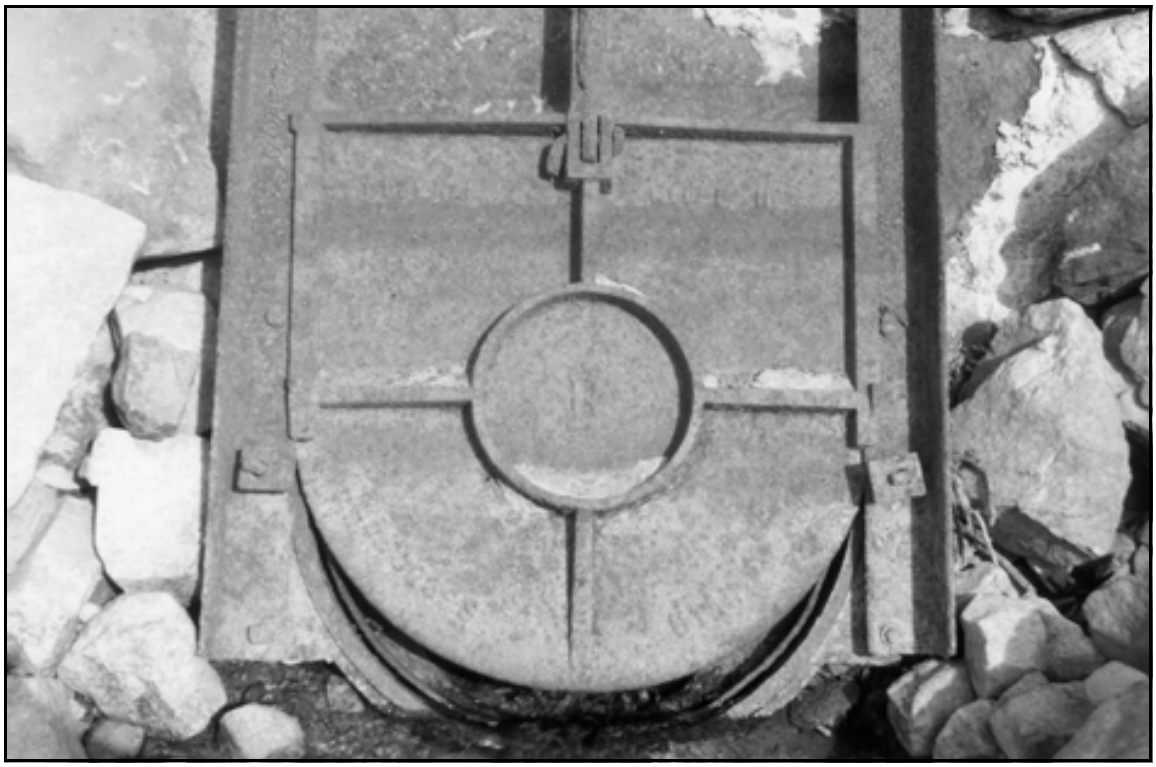
HAER UT-42-E. Drift Lake Dam. Overview of dam surface; view to the south-southeast.

HAER UT-42-E. Drift Lake Dam. Overview of west face of dam; view to the southeast.

HAER UT-42-E. Drift Lake Dam. Overview of barrow area at south end of dam; view to the southeast.

HAER UT-42-E. Drift Lake Dam. Overview of spillway channel at dam; view to the northeast.

HAER UT-42-E. Drift Lake Dam. Overview of gate lift mechanism and handwheel; view to the east-northeast.



HAER UT-42-E. Drift Lake Dam. Sliding gate; close-up view.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: East Timothy Lake Dam (HAER No.: UT-42-F)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 4W ***Section:*** 28,29

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 554780mE 4506300mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Mount Emmons, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R.4W., NW¼ SW¼ SW¼ S. 28
T. 4N., R.4W., SE¼ SE¼ SE¼ S. 29 (Approx. acres, 18.94 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:*** 1239/1:1-23
__ ***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 Andrew Williamson, Sagebrush Consultants, L.L.C. ***Date:*** 08-15-01

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.

East Timothy Lake Dam originally measured 12 by 18 ft and consisted of stacked blocks of sod with a wood outlet gate across the lakes natural outlet channel (Fraser, Jurale, and Righter 1989:69). In 1951, the Moon Lake Water Users Association cut a primitive road from Jackson Park up to East Timothy Lake and began construction of the present East Timothy Dam utilizing heavy earth-moving equipment. The current structure is an elongated, "S" shaped, earthen-filled structure reinforced with stone rip-rap facing. The dam is located on the east side of East Timothy Lake in the Swift Creek drainage of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 569 acre-feet of water in storage, raising the natural lake level 19 ft. Two main barrow areas, an overflow spillway, and 14 seepage pipes were noted in association with the East Timothy Dam. The upstream (west) face of the dam is reinforced by medium-to-large sized boulders of localized materials which range from 2 to 5 ft in diameter. The downstream (east) side of the dam is composed of earth and gravel fill materials and lacks any kind of stone reinforcement. The dam is 1450 ft in length (northeast-southwest). It measures 50 to 150 ft wide at the base, stands 34 ft in height, and varies from 18 to 25 ft wide at the top.

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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***
__ ***Community Planning & Development***	__ ***Exploration/ Settlement***	__ ***Maritime History***	__ ***Other:***
__ ***Conservation***	__ ***Health/Medicine***	__ ***Military***	
		__ ***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 dam at East Timothy Lake was initially constructed circa 1920 by Uinta Basin farmer, Brigham Timothy. This original structure measured 12 by 18 ft and consisted of stacked blocks of sod with a wood outlet gate across the lakes natural outlet channel (Fraser, Jurale, and Righter 1989:69). Timothy's water rights were eventually transferred to the Swift Creek Reservoir Company, which later became part of the Moon Lake Water Users Association (Fraser, Jurale, and Righter 1989:86-87, 90).

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet was not visible at the time of recordation. The outlet was entirely beneath the waters of the lake, therefore, it is not known if metal grating or any other kind of structure is associated with this opening. A gate which controls the flow of water through the outlet pipe is accessed from the top of the dam through a 4 ft diameter vertical access culvert. The metal culvert entry extends 18 in. above the surface of the dam and descends to an unknown depth. More specific information regarding the control gate could not be obtained as the vertical access shaft is covered by a locked metal grating.

The downstream outlet pipe could not be examined at the time of recordation due to obstruction by vegetation and the high velocity of water entering the stream channel. Fragments of corrugated metal piping are found adjacent to the outlet, these may represent the remains of the original pipe installed during construction. The downstream outlet issues water at a high velocity, as a result the outlet channel has been reinforced with large boulder embankments on either side. From the pipe, water travels southeast down the outlet channel for a distance of 103 ft, where it meets with a check dam constructed to slow the water. From there, the stream turns and flows east for a short distance before changing direction at a stone-reinforced shoulder which diverts the channel southeast and downslope. Having made this last turn, the water flows across a flood plain in a series of braided streams for some distance before draining into Swift Creek far below. Located just above the downstream outlet is a rock wall which parallels the dam to the north for approximately 62 ft. Adjacent to the existing outlet channel is a linear depression which extends downslope (east) and straight into the current outlet channel. It appears that this may have been the original outlet channel, later replaced by the one currently used. A check dam located 68 ft downstream within the depression supports this assertion. It may be that the rock pile extending north from the current outlet channel represents an attempt to stabilize the channel and prevent it from washing out.

The Fraser and Jurale HABS/HAER Inventory Record (1985) reported widespread seepage on the downslope toe of the East Timothy dam, as a result, the lake was maintained at maximum drawdown to prevent potential structural failure. There are several attributes which allude to the problem of seepage mentioned in that report and the subsequent repairs and preventative maintenance tasks which have occurred. A second rock wall measuring 60 ft long and 20 ft wide is located 25 ft upslope of the rock wall mentioned previously. It is composed of large boulders which appear to fill a depression which may have been eroded as a result of seepage. It may be that this depression is associated with events that lead to the abandonment of the original outlet channel, the creation of the new channel, and the addition of earthen embankments for additional stability.

There are several areas along the dams toe through which water is currently seeping. Efforts have recently (post-1985) been made to limit the effects of this seepage, the most notable of which is the installation of 14 breather/seepage pipes along the toe. Eleven of these are located south of the downstream outlet. There are two types of breather pipes installed. The first type is a 5 in. diameter heavy plastic pipe which extends vertically 24 in. above the ground surface at the toe of the dam. Connected to the base of each vertical member is a similar 5 in. diameter heavy plastic pipe which issues horizontally from the first, out of which water seeps. Eight of the 11 breather/seepage pipes on the south side of the downstream outlet are of this configuration. The other type consists of 5 in. metal piping which extends horizontally from the toe of the dam slope, and a “T” in the pipe which extends vertically for 5½ in. from the horizontal pipe. The vertical pipe is capped by a 6 in. by 5½ in. metal cap. It should be noted that all vertical pipes have such a cap. The first 3 of the 11 breather/seepage pipes on the south side of the outlet channel are of this latter configuration, and the 3 pipes north of the outlet channel are also. The 11 pipes on the south side of the outlet channel are spaced at 32 ft intervals, and follow the general curvature of the dam. The 3 pipes on the north side are not as evenly spaced, but also follow the dam’s curvature.

The overflow spillway is located at the north end of the dam. It is a shallow channel 4 to 5 ft deep on average, with armorized siding to prevent flood-stage erosion. At its origin at the dam, the spillway is 100 ft wide, quickly narrowing to a width of 30 ft which is maintained for the remaining length of the spillway. It flows downslope in a southerly direction for 200 ft, then turns southwesterly and continues for another 175 ft. The channel then divides into a series of braided streams which merge with the braided network of the outlet channel 300 ft further

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued) . . . downstream. The channel ultimately re-forms as Swift Creek some distance below. On the north end of the overflow spillway, a small barrow area exists. It appears to be composed of three separate scrapings, similar to a bulldozer pushing materials from a distance, which were used to push materials against the outer bank of the spillway. These three sets of scrapings come from three different directions and end at the earthen embankment located on the north side of the spillway. This gives the north side of the spillway great height and reinforcement, as it receives the most pressure in the event of a flood. The total area encompassed in this lesser barrow area is approximately 130 ft (northeast-southwest) by 110 ft (southeast-northwest).

Two main barrow areas were used during the construction of the dam on East Timothy Lake, one lying inside the dam/lake area, and one lying outside. The barrow area lying outside the dam is located on the south side near the west end of the dam, just off the first corner as one travels northward. The material extracted from this area consists of finely-sorted small-grained gravels. These have been extracted from large banks on the southeast and southwest edges of the barrow area. The northern end of the barrow area is defined by the toe of the dam, forming a triangular-shaped area. The center of this area is filled with a linear pile of large boulders that were not used in the construction. In association with the first barrow area are two roads which provide access to the dam. The first is a 200 ft long road which is found at the first corner of the dam (traveling easterly). This descends from the dam's surface into the barrow area along the toe of the dam. The second road is a fairly visible two-track which begins at the west end of the dam and travels south for a distance of 75 ft. It then turns to the east, descending into the barrow area some 175 ft later. Overall, this barrow area measures approximately 400 ft (northwest-southeast) by 150 ft northeast-southwest). It should be noted that this area forms a basin in which water from the seepage pipes has been collecting. This water drains out of the barrow pit by way of a cut in the northeast corner of the pit, and the water floods the grasslands below, eventually reaching the outlet channel.

A large boulder covered bench with two central depressions is located between the barrow pit and the access road which descends the face of the dam to the pit. The area measures 300 ft (east-west) by 80 ft (north-south). The origin and purpose of this feature are unclear, however, the area is clearly associated with construction or stabilization efforts at the dam.

The second large barrow area is located inside the dam/lake area, where it was reported that materials were pushed up to create the dam. Most of this barrow area remains underwater, but a portion of it can be seen at the north end of the dam in an area which empties into the overflow spillway. This particular area is a shallow basin out of which materials were extracted for the construction of the north end of the dam. It may be that this barrow area served a two-fold purpose in that it not only was utilized as an area for construction materials, but was also a means by which more surface area and water storage could be added to the lake.

5. HISTORY (Continued from Page 2)

In 1951, the Moon Lake Water Users Association cut a primitive road from Jackson Park up to East Timothy Lake and began construction of the present East Timothy Dam utilizing heavy earth-moving equipment. Construction workers placed stone rip-rap on the face of the dam, which was an elongated S-shaped structure built across the natural outlet on the southeast corner of the lake. "Despite the fact that construction of the dam was carried out using motorized heavy equipment, the East Timothy Dam resembles the other dams built in the 1920s and 1930s, illustrating the relatively unsophisticated nature of earth-fill technology" (Fraser, Jurale, and Righter 1989:88). East Timothy Lake Dam is the largest dam in the Swift Creek Drainage.

In the 1960s, concerns stemming from the Wilderness Act of 1964 prompted the Bureau of Reclamation to adopt a policy which called for the stabilization of the high mountain lakes dammed during the first half of the 20th Century. This policy, combined with safety concerns regarding the condition of the dams made the dam at East Timothy Lake a major concern. The natural seal of the ground at East Timothy had been disturbed by the borrowing

5. HISTORY (Continued) . . . of earth from the upstream and downstream toes of the dam. This disturbance

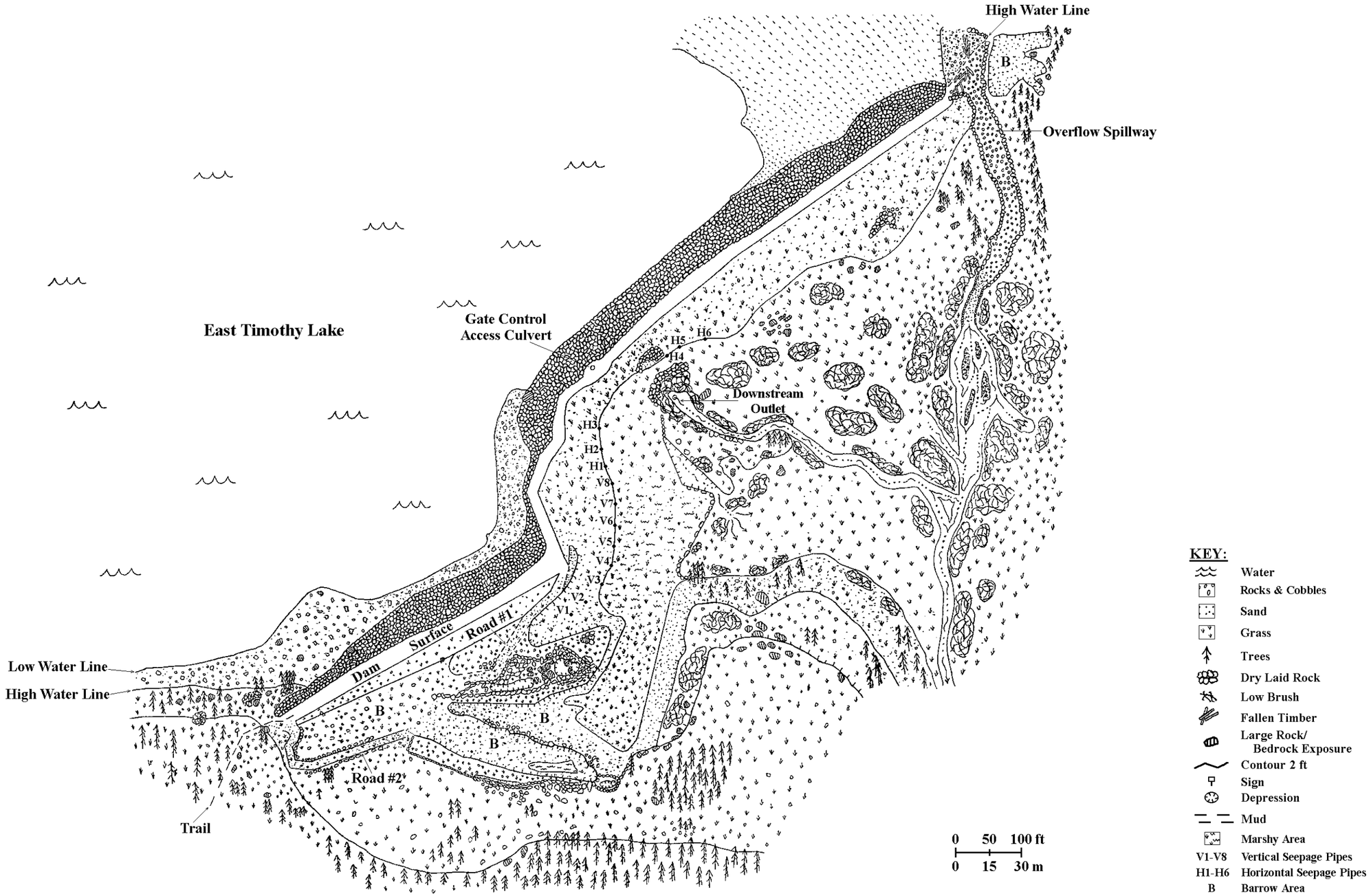
eventually led to a seepage problem (Fraser, Jurale, and Righter 1989:88-89) that if left unchecked could ultimately lead to structural failure. In order to prevent structural failure a series of breather/seep pipes were added to the downstream toe of the dam. These pipes provide an outlet for seepage in an effort to prevent structural failure of the vulnerable portion of the dam.

References Cited

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

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.

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).



HAER UT-42-F. East Timothy Lake Dam.

HAER UT-42-F. East Timothy Lake Dam. Lake overview; view to the north.

HAER UT-42-F. East Timothy Lake Dam. Lake overview from spillway; view to the west.

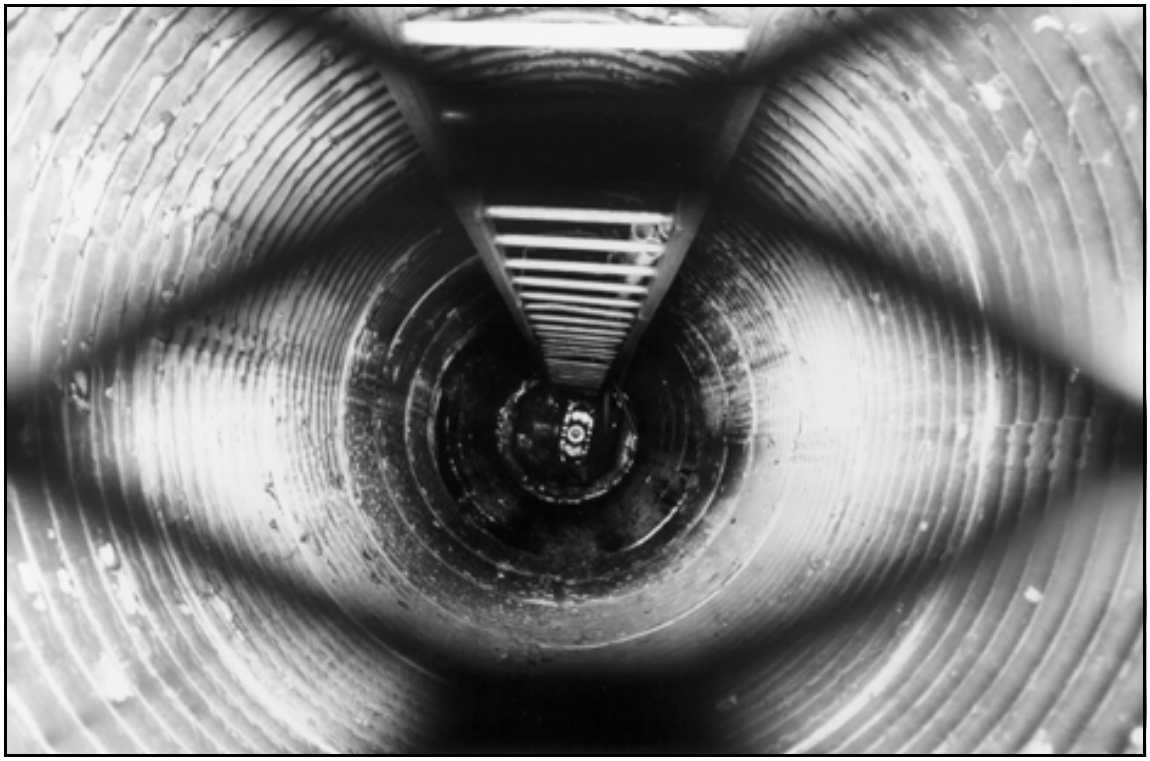
HAER UT-42-F. East Timothy Lake Dam. Dam overview from the east end; view to the west-southwest.

HAER UT-42-F. East Timothy Lake Dam. Dam overview from the west end; view to the northeast.

HAER UT-42-F. East Timothy Lake Dam. Dam overview with spillway in foreground; view to the southwest.

HAER UT-42-F. East Timothy Lake Dam. Spillway overview; view to the southeast.

HAER UT-42-F. East Timothy Lake Dam. Overview of top of dam showing culvert shaft with outlet channel in background; view to the southeast.



HAER UT-42-F. East Timothy Lake Dam. Looking down culvert shaft toward control gate; close-up view.

HAER UT-42-F. East Timothy Lake Dam. Overview from dam showing outlet channel; view to the southeast.

HAER UT-42-F. East Timothy Lake Dam. Overview of barrow area from west end of dam; view to the northeast.

HAER UT-42-F. East Timothy Lake Dam. Overview from the dam across the outlet channel; view to the south.

HAER UT-42-F. East Timothy Lake Dam. Overview of the southwest portion of the dam looking across culvert; view to the southwest.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Farmers Lake Tunnel (HAER No.: UT-42-G)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 4W ***Section:*** 31

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 552880mE 4504880mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Mount Emmons, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 4W., NW¼ SE¼ SE¼ S. 31 (Approx. acres, 0.5 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: Tunnel

Current Use: Tunnel

3 DOCUMENTATION

Photos: Dates:
__ *slides:*
X *prints:* 1239/1:29-35; 3:20-24
__ *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 Andrew Williamson, Sagebrush Consultants, L.L.C. ***Date:*** 08-10-01

4 ARCHITECTURAL DESCRIPTION

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

Foundation Material: Rock ***Wall Material(s):*** Blasted 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 Farmer's Lake Tunnel, constructed in 1920 by the Farmers Irrigation Company (Farmers), is a rock-cut tunnel used to drain naturally stored water from Farmer's Lake. The tunnel is located at the southeast end of Farmers Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. Farmer's Lake holds approximately 1327 acre-feet of water in storage, the Farmers Lake Tunnel allows access to this water, dropping the levels of this natural lake 12½ vertical feet. The Farmers Lake Tunnel measures approximately 300 ft long and 3 ft wide. In association with this tunnel are upstream and downstream outlet channels, an access shaft, and two depressions. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet channel is 53 ft long, 18 ft wide at the lake edge, and 9½ ft wide where it meets the tunnel entry. The channel has been cut straight through the bedrock at the shoreline which rises quickly from the lake's surface. It has a depth which ranges from just a few inches at the lake's edge to 10½ ft at its termination. The sides of the channel attest to the amount of excavation done during construction, as the fill from this work has been piled up in the adjacent areas. A collapsed wooden structure lies at the end of the outlet channel. This structure represents the log grizzly that Fraser and Jurale (1985) reported during their recordation. The badly deteriorated axe-hewn logs are fastened together with 6 in. nails. The grizzly acts as a trash rack, preventing floating debris from entering and blocking the tunnel. At the mouth of the upstream outlet, there is a gravel bar composed of small-to-medium sized angular gravels. Measuring 23½ ft wide, this gravel bar is dry and represents the current shoreline. Behind this, water is gathered in a pool which runs from the gravel bar through the channel to the end of the outlet at the tunnel entry. The channel is filled with remnants of the log grizzly structure, as well as large rocks which have begun to fall from above. Access to the tunnel on the upstream outlet is obscured by water, logs, and rocks. The condition of the tunnel entry could not be ascertained at the time of recording.

Twenty-two ft to the south-southeast of the upstream outlet there is an access shaft in which the gate control mechanism and headgate are located. The shaft is 4 ft long by 2½ ft wide and has a depth of 11 ft which represents the water line. The gate lift mechanism consists of a steel gate on an angle iron frame, which is raised or lowered by a ¼ in. diameter threaded stem which runs vertically down the shaft and connects to the gate. The gate lift mechanism was controlled by a handwheel located on top of the iron frame. The wheel itself is gone, with the exception of one spoke which still remains attached to the stem. More precise measurements and descriptions regarding this apparatus could not be conducted due to the inaccessible nature of the shaft. The remnants of a log cribbed structure exist atop the shaft, though portions have begun to collapse and fall into the hole. The existing structure measures 9½ ft long by 4½ ft wide and stands approximately 3 ft high. The crib is constructed of axe-hewn and notched logs, stacked four high on a side. The logs range from 5 to 10 in. in diameter and are held together with 6 in. iron nails. The structure was intended to prevent debris from entering the shaft.

The downstream outlet is located 190 ft south-southeast of the upstream outlet. The downstream outlet channel is approximately 205 ft long and 12 ft wide. The first 82 ft of the outlet channel consist of a sharp, narrow cut into the bedrock which ranges in depth from 3½ to 5½ ft. This section of the outlet channel continues south-southeast an additional 36 ft until it meets with a large pile of rock. It appears as though this is the fill from the construction of the cut, and was moved downslope in order to help divert water along a particular drainage. The pile is 80 ft long by 20 to 25 ft wide and diverts the water to the southeast. At the termination of the rock pile, the channel empties water into an existing natural drainage, which in turn leads to Swift Creek below. The tunnel from which water empties into the downstream outlet channel is protected by a large wooden trash rack composed of five axe-hewn logs that average 9 to 12 in. in diameter. They are roughly 21 to 23 ft in length and cover the tunnel at a 20° downward angle from the top of the cut. These logs are beginning to show signs of deterioration, but were in reasonable condition at the time of this recording. The purpose of such a structure was to protect the tunnel from blockage by debris. The tunnel itself is at the base of the cut for the outlet channel, and still has a small amount of water flowing through it. Access to the tunnel is prevented by the logs, but a visual estimate of its dimensions suggest a 3 ft by 1 to 2 ft measurement.

The HABS/HAER documentation for the Farmer's Lake Tunnel (Fraser and Jurale 1985) made mention of an original tunnel which had collapsed and was later replaced by the current tunnel. A reconnaissance of the area failed to identify a clear path for this original tunnel, however, two depressions adjacent to the existing tunnel path may indicate the location of this original structure. The first is located 24 ft to the northeast of the cribbed wooden structure covering the access shaft. It is a 6 ft diameter depression around which a berm is found. The second depression is located 82 ft southeast of the access shaft. While it is adjacent to the path of the existing tunnel shaft, it is located far enough away to possibly indicate its use in accessing the original. This depression is 5½ by 4 ft, and is **4. ARCHITECTURAL DESCRIPTION** (Continued) . . approximately 3 ft deep, with an earthen berm

surrounding the depression. It may be that the inlet and outlet channels currently in use served both tunnels, and these in turn may have followed similar routes.

The Fraser and Jurale report (1985) also notes that the existing tunnel shaft is straight. While exact information on this could not be gathered on the surface, one can surmise that a possible angle change exists due to the placement of the inlet channel, the outlet channel, and the access shaft.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

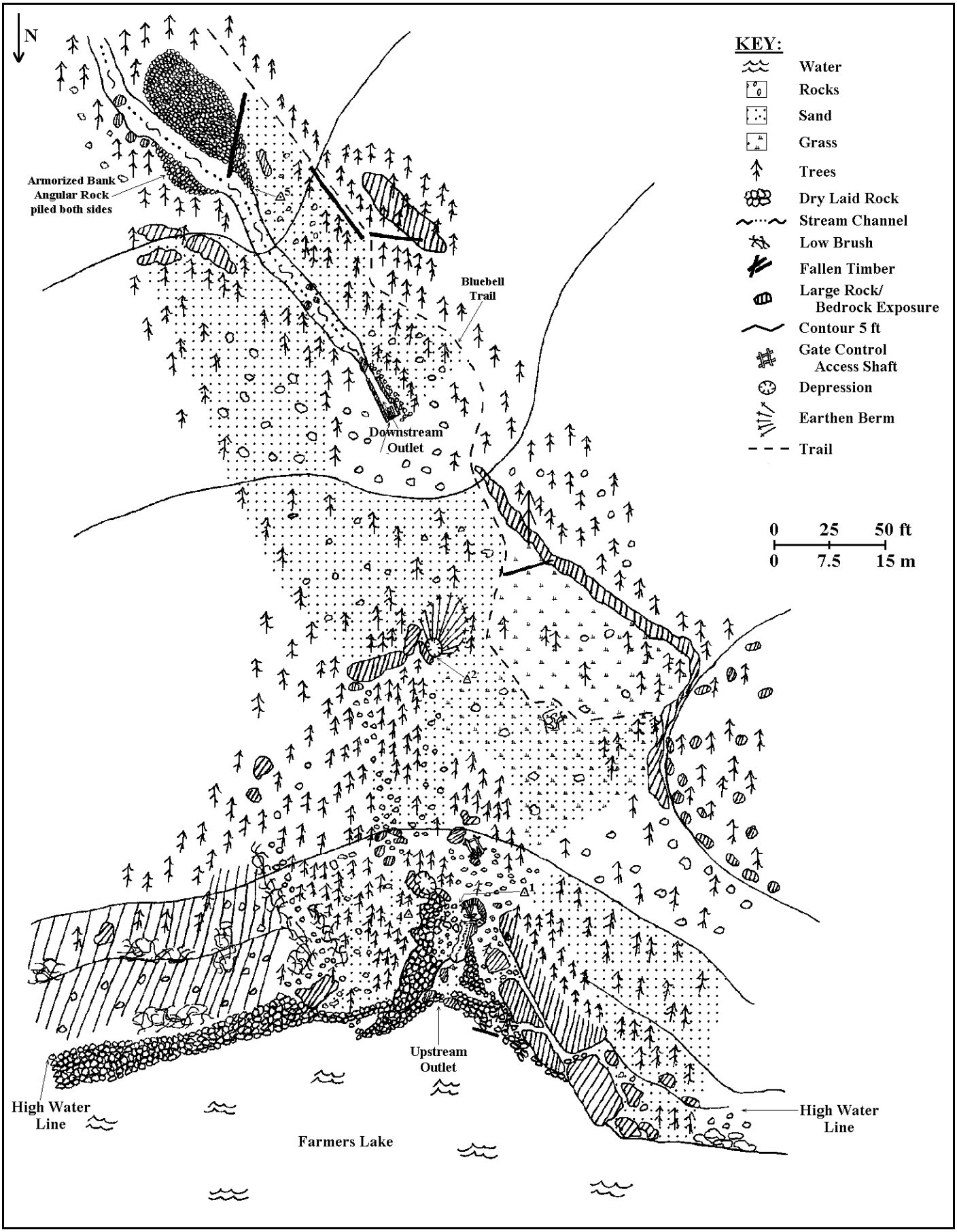
The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

References Cited

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

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.

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).


N
KEY:
Water
Rocks
Sand
Grass
Trees
Dry Laid Rock
Stream Channel
Low Brush
Fallen Timber
Large Rock/ Bedrock Exposure
Contour 5 ft
Gate Control Access Shaft
Depression
Earthen Berm
Trail
0 25 50 ft
0 7.5 15 m
Armorized Bank
Angular Rock
piled both sides
Bluebell Trail
Downstream Outlet
Upstream Outlet
High Water Line
High Water Line
Farmers Lake

HAER UT-42-G. Farmers Lake Tunnel. View from atop the tunnel inlet showing upstream outlet channel and lake overview; view to the north.

HAER UT-42-G. Farmers Lake Tunnel. Collapsed tunnel shaft; close-up view to the northwest.

HAER 42-UT-G. Farmers Lake Tunnel. Overview of wooden grate trash rack and downstream outlet of tunnel; view to the northwest.

HAER UT-42-G. Farmers Lake Tunnel. Overview of depression east of the tunnel upstream outlet; close-up view.

HAER UT-42-G. Farmers Lake Tunnel. Overview of lake; view to the west.

HAER UT-42-G. Farmers Lake Tunnel. Overview of lake; view to the northeast.

HAER UT-42-G. Farmers Lake Tunnel. View of tunnel inlet showing remains of log grizzly; view to the south.

HAER UT-42-G. Farmers Lake Tunnel. View of the beginning of the tunnel inlet from above, showing remains of log grizzly; view to the southeast.

HAER UT-42-G. Farmers Lake Tunnel. View of cribbed gate control shaft looking down shaft at control device; close-up view.

HAER UT-42-G. Farmers Lake Tunnel. View of cribbing over gate control shaft; view to the southwest.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Five Point Lake Dam (HAER No.: UT-42-H)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 5W ***Section:*** 29

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 544370mE 4507185mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Garfield Basin, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 5W., NW¼ SW¼ NE¼ S. 29 (Approx. acres, 17.7 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:*** 1239/5:20-25; 6:0-24
__ ***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 Sandy Chynoweth Pagano ***Date:*** 09-02-01
Sagebrush Consultants, L.L.C.

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.

Five Point Lake Dam is an "L" shaped earthen-filled structure reinforced with stone rip-rap facing. It is located on the southeast end of Five Point Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 607 acre-feet of water in storage, raising the natural lake levels 11 ft. Four main barrow areas, a low concrete overflow spillway, a small concrete gauging station, and three pieces of abandoned construction equipment were noted in association with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 5 ft in diameter. The long side of the dam is 525 ft in length (east-west) and the short side of the dam is 375 ft in length (northeast-southwest). Over all, the Five Point Lake Dam is 900 ft long (north-south). It measures 30 to 65 ft wide at the base, stands 15 ft in height, and varies from 10 to 12 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet consists of a square conduit, covered by a grate constructed of welded rebar in the base of a board-formed, reinforced concrete headwall. The headwall is "U" shaped in plan view, measuring 5 ft long parallel to the dam with 4 ft long walls extending from each end of the headwall at 90°. It is approximately 3 ft 8 in. high and is reinforced with rebar. The actual gate is located within the body of the dam and is not visible to inspection. The gate lift mechanism consists of a 30 in. diameter Hardesty Hand-Wheel Pedestal Lift (Type C) which is supported by a board-formed concrete box on the top of the dam. The box measures 3 ft 7 in. (east-west) by 4 ft 2 in. (north-south) and is 2 ft 8 in. high on the upstream side of the dam and 3 ft 7 in. high on the downstream side of the dam. This box supports the hand-wheel pedestal and provides access and an air vent to the conduit, preventing damage created by vacuum pressure. The vent shaft which leads down to the headgate measures 2 ft 8 in. by 3 ft and is covered with a hinged steel mesh grate secured with a padlock. There are steel bars set into one corner (north) of the shaft at an angle to create a ladder, descending at approximately 12 in. intervals to the gate below. The depth exceeds 8 ft to the control gate which is not visible through the locked grate. The concrete box exhibits several inscriptions in the concrete. The inscriptions read: (on the west face) "E. A. W," "Cloyd Seeley," "Sept. 15, 1940," "DLG," "Harry Smith," "LloyD BooDrich 9/16/40," "Heber Timothy," and "Lynn Hansen," (and on the south face) "ROY Birch 7/16/40."

The downstream outlet consists of a corrugated metal pipe, approximately 24 in. in diameter, set into a reinforced concrete headwall located on the downstream toe of the dam. The headwall measures 17 ft 10 in. long by 1 ft thick, and is 4 ft 2 in. high. It is constructed of faced board-formed concrete and reinforced with rebar. Water exits the conduit and enters a tributary of Garfield Creek, a braided rocky stream that flows southeasterly into Gem Lake approximately 3000 ft downslope. The banks of the creek are armorized with local, dry-coursed cobble-to-boulder sized stones on both sides of the outlet to provide erosion control along the stream banks during high velocity run-off. This reinforcement starts at the outlet wall and continues downstream for 15 ft on the north side and 21 ft on the south side. The outlet stream is approximately 11 ft wide at the outlet, but narrows to 4 to 6 ft as it continues downstream.

The downstream outlet stream continues southeasterly for approximately 175 ft and flows through a concrete rating flume. This feature consists of two board-formed concrete walls on opposing sides of the stream, with a concrete floor between them and a flow gauging box on the north side of the structure. The rating flume measures 3 ft 6 in. (north-south) by 2 ft (east-west) with 6 in. thick walls. On the south wall of the box is a metal weir gauge, painted white with black numbers and increments. It reads from zero up to two feet of depth.

The overflow spillway prevents high water from breaching the dam by carrying overflow from the southwestern corner of the dam and discharging it into a series of braided streams which mingle with the braided streams of the outlet channel, which flow into Gem Lake. The spillway is a shallow channel averaging 1 to 2 ft deep with armorized banks to prevent flood-stage erosion. At its origin, approximately 80 ft south of the dam, the spillway is 110 ft wide before quickly narrowing to a width of 20 to 25 ft. The spillway consists of a linear board-formed vertical concrete slab curb in association with horizontally laid tabular sandstone slabs and boulders lining a natural saddle on the downstream side. The curb structure slows overflow waters and prevents erosion. The lake bed on the upstream side of the dam is covered by sand, cobbles, pebbles, and a few large boulders. The overflow channel is 110 ft wide where ten concrete slabs are placed upright in the sand, end to end, to create a low curb or wall. The slabs, measuring 5½ in. wide by 16 in. high, average 12 ft in length and are reinforced with rebar. The downstream side of the curb is supported by large sandstone slabs which are stacked 2 to 3 courses high against the concrete slabs to prevent them from being pushed over by the force of overflowing waters. The channel begins to narrow and is lined with very large boulders, some as big as 12 ft in diameter. A section approximately 100 ft downstream (southeast) from the concrete curb has wire netting placed over the rocks to prevent movement and erosion. Water flowing over the spillway flows southeasterly down the broad rocky stream channel which merges with the outlet creek some distance below the dam.

4. ARCHITECTURAL DESCRIPTION (Continued)

HISTORIC SITE FORM

(CONTINUATION SHEET)

Construction equipment found at Five Point dam includes a stock-drawn earth roller with a log tongue and a large, stock-drawn earth scraper; both of which appear to have been assembled on site, in addition to a large stock-drawn shovel. The earth roller is a 2 ft 6 in. diameter by 5 ft long corrugated metal pipe which has been filled with concrete. A smaller iron pipe, measuring 2⅛ in. diameter, is centered in the concrete and supported on both ends by a 6½ in. diameter metal hub and a milled lumber cross. This pipe creates an axle by which the roller attaches to a wooden frame/harness mechanism. The frame is constructed of rough hewn lumber held together with large wire nails, wire, and metal hardware. The iron stock-drawn earth scraper is a large shovel measuring 4 ft ⅜ in. long by 2 ft 4 in. wide and 2 ft high with a five foot handle. It is assembled with ¾ in. square nuts on ½ in. diameter threaded bolts. The stock-drawn shovel is very large, it has brackets on its sides and a frame which likely attached to some type of supports. The shovel is 2 ft 7 in. wide by 5 ft 8 in. long, with a 1 ft 2 in. maximum depth.

Four main barrow areas were used for materials during the construction of the dam on Five Point Lake. The first barrow pit, located on the southwest side of the dam, measures 150 ft (north-south) by 100 ft (east-west). It has a small ramp extending from its northwest end a distance of approximately 65 ft up to the dam. The second barrow pit, located on the south side of the dam between the outlet channel and the original stream channel, measures 85 ft (north-south) by 130 ft (east-west). It has a gravel road running from its north end heading northwest toward the curve in the dam. It joins the dam there, providing a ramp for the movement of barrow material. The ramp measures approximately 175 ft long. The third barrow pit, located just south of the dam and east of the original channel, is the largest of the four. It measures 150 ft (north-south) by 115 ft (east-west) and has a short ramp leading 30 ft north to the dam. The fourth barrow pit is on the northeastern end of the dam. It measures 125 ft (north-south) by 100 ft (east-west). This barrow pit is higher than the others and access to the dam is level with its south end.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter 1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter 1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

The dams constructed by the Farmers Irrigation Company were small-scale and marginal in comparison to the high mountain dams built by other irrigation companies, and in reality did little to increase the amount of irrigated farmland in the Uinta Basin (Fraser, Jurale, and Righter 1989:90). The Farmers Irrigation Company was ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by the joining of four irrigation companies in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

HISTORIC SITE FORM

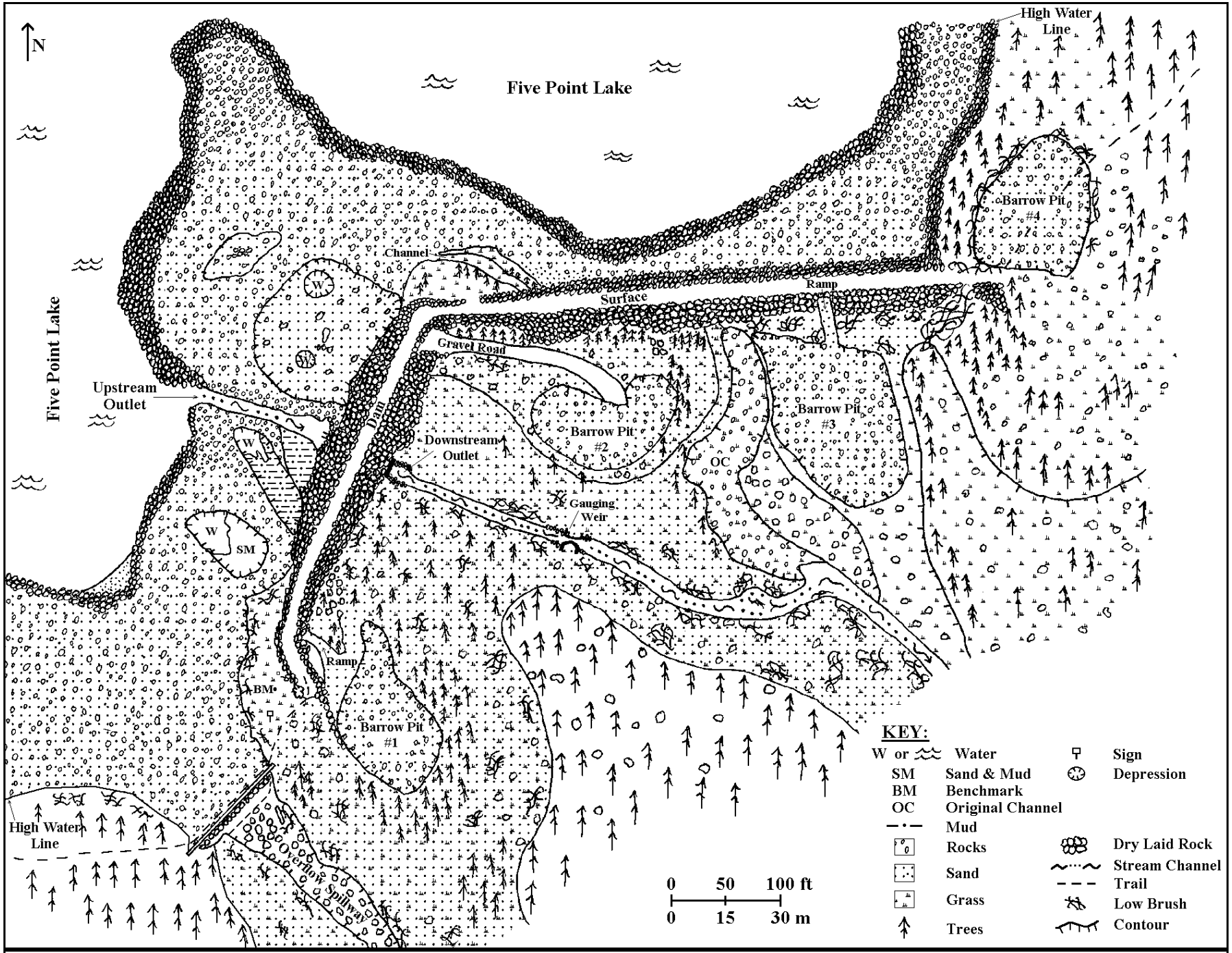
(CONTINUATION SHEET)

References Cited

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

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.

Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).



HAER UT-42-H. Five Point Lake Dam.

HAER UT-42-H. Five Point Lake Dam. Dam overview, showing ramp from barrow area; view to the northeast.

HAER UT-42-H. Five Point Lake Dam. Dam overview; view to the southwest.

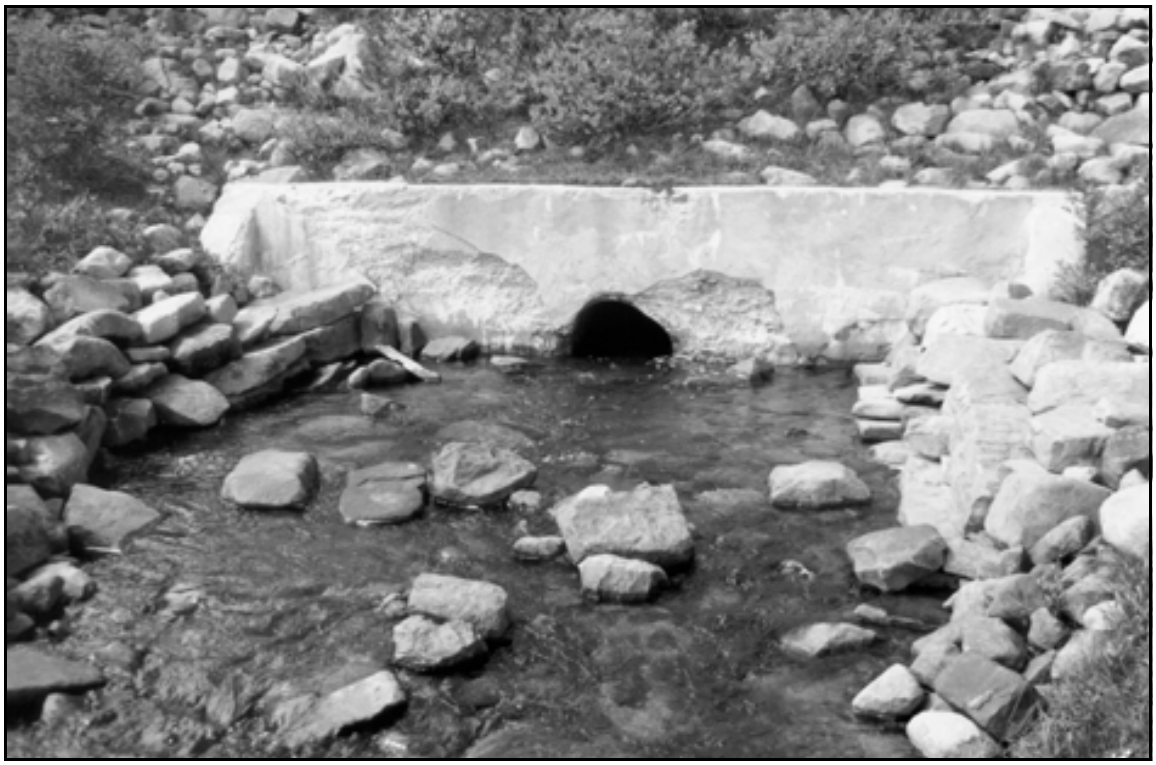
HAER UT-42-H. Five Point Lake Dam. Overview of northeast barrow area showing Garfield Creek trail; view to the north.

HAER UT-42-H. Five Point Lake Dam. Dam overview from barrow pit; view to the north.

HAER UT-42-H. Five Point Lake Dam. Overview of dam control box, upstream outlet channel and lake in background; view to the west-northwest.

HAER UT-42-H. Five Point Lake Dam. Overview of dam showing upstream outlet and control box; view from reservoir to the east.

HAER UT-42-H. Five Point Lake Dam. Overview of downstream outlet, control box, and east face of dam; view to the west.



HAER UT-42-H. Five Point Lake Dam. Close-up view of downstream outlet; view to the west.

HAER UT-42-H. Five Point Lake Dam. Overview showing gauging box, check dam, looking upstream toward downstream outlet, dam, and control box; view to the west.

HAER UT-42-H. Five Point Lake Dam. Overview of check dam/gauging box and downstream outlet channel; view to the east-southeast.

HAER UT-42-H. Five Point Lake Dam. Overview showing upstream view of curb and overflow spillway, lake in background; view to the northwest.

HAER UT-42-H. Five Point Lake Dam. Overview of overflow spillway concrete curb; view to the north-northeast.

HAER UT-42-H. Five Point Lake Dam. Overview of overflow spillway downstream channel from concrete curb; view to the southeast.

HAER UT-42-H. Five Point Lake Dam. Rebar reinforcement exposed in damaged section of curb along overflow spillway; close-up view.

HAER UT-42-H. Five Point Lake Dam. Detail of reinforced area of spillway; view to the south.

HAER UT-42-H. Five Point Lake Dam. Detail of reinforced area of spillway; view to the south-southeast.

HAER UT-42-H. Five Point Lake Dam. Detail of south face of control box showing inscriptions; close-up view.

HAER UT-42-H. Five Point Lake Dam. Detail of west face of control box showing inscriptions; close-up view.

HAER UT-42-H. Five Point Lake Dam. Overview of stock-drawn earth scraper and stock-drawn shovel; close-up view.

HAER UT-42-H. Five Point Lake Dam. Detail of stock-drawn earth roller with a log tongue; close-up view.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Superior Lake Dam (HAER No.: UT-42-L)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 5W ***Section:*** 20

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 544690mE 4508480mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Garfield Basin, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 5W., NW¼ NE¼ SE¼ S. 20 (Approx. acres, 1.84 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:*** 1239/4:1-25
__ ***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 Sandy Chynoweth Pagano ***Date:*** 09-02-01
Sagebrush Consultants, L.L.C.

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.

Superior Lake Dam is an earthen-filled structure reinforced with stone rip-rap facing. The dam is located along the northeast side of Superior Lake in Garfield Basin of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 359 acre-feet of water in storage, raising the natural lake level 16 ft. One main barrow area, an overflow spillway and one piece of abandoned construction equipment was noted in association with the dam. Both the downstream and upstream faces of the dam are reinforced by medium-to-large sized boulders of localized materials which range from 1 to 3 ft in diameter. The dam is 235 ft in length (east-west). It measures 25 to 55 ft wide at the base, stands 15 ft in height, and varies from 5 to 8 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet is an 18 in. diameter corrugated metal pipe through which stream flow is controlled by a sliding square headgate of unknown manufacture. The gate lift mechanism consists of a steel plate on an angle iron frame, which is raised or lowered by a 1½ in. diameter threaded stem encased in a 3 in. diameter pipe, which runs down the face of the dam and connects to the gate. The gate lift mechanism control is located on top of the dam in a metal box which measures 2 ft high by 2 ft 2 in. wide. The pipe casing passes through the control box and protrudes 2 ft 10 in. from the opposite side. No manufacturing information was found on the gate or the box, however, "PIONEER ½ NPTF111" was stamped into a small steel valve located on the upper portion of the pipe casing. The interior of the control box was not accessible. Two notched logs protruding horizontally from the face of the dam on either side of the gate stem indicate, along with numerous large notched logs found along the spillway and shores of Superior Lake, that the dam control gate was once supported by a wooden crib structure. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985) show the crib structure to be intact at that time. Abandoned fragments of angle iron, pipe, and sheet metal also exist in the vicinity of the currently used headgate, indicating modifications have been made to the gate lift mechanism and its housing.

The downstream outlet consists of a 7 ft wide by 2 ft 6 in. high concrete headwall resting on a concrete footing which extends 10 in. from the base of the headwall. The vertical face of this platform, which is underwater at an unknown depth, is constructed of board-formed concrete which appears to have a plywood facing. The outlet releases water into a 7 ft wide channel cut directly through the bedrock for a distance of 55 ft creating vertical rock walls approximately 5 ft high. The channel then changes to a rock and cobble streambed and continues downslope through thick brush and intersects with the overflow spillway 150 ft downstream.

The overflow spillway is located directly adjacent to the northeast end of the dam. It is constructed of concrete and dry-coursed stone stacked in rectangular cribs fashioned from galvanized wire. It is 7 ft 5 in. wide at the high water line at the dam. The cutbank is 2 ft 6 in. deep by 20 ft long and has been lined on both sides with a series of stone filled wire cribs. There is a thin, felt-like liner beneath the cribbing, likely to help prevent erosion. At the south end of this channel is a concrete ledge measuring 2 ft 7 in. wide by 5 ft 6 in. long by 3 in. thick. An engraving reading "- AN WIntERTON" is located on the surface of the east side. At the ledge, the spillway drops approximately 4 ft in depth to a concrete pad below. Directly below the concrete ledge the rock cribbing is stacked three courses high, the side walls are stacked four courses high, and all are capped by the concrete ledge. A single 2 by 4 is hanging from the concrete on the west side of the upper concrete shelf. The rock cribbing side walls measure 8 ft 1 in. high on the west side, and 7 ft 10 in. high on the east side. The cribbing is stacked at an angle, forming a "V" shape which is approximately 4 ft wide at the bottom. The lower concrete pad measures 4 ft 5 in. long by 2 ft wide by 5 in. thick, and it appears that there is a felt-like liner under both the cribbing and the concrete pad. This pad breaks the fall of the water preventing erosion of the channel. The area then gives way to a section of bedrock and boulders with a deep (>6 ft) cutbank on both sides for approximately 14 ft downstream (south), before turning into a rocky streambed which merges with the dam outlet creek approximately 150 ft below the dam.

The barrow area is located on the southwest side of the dam and measures 118 ft (north-south) by 100 ft (east-west). Its location on the west side of the dam provides easy access for the movement of materials from the barrow pit for construction of the dam.

A large stock-drawn shovel, identical to the one found at Five Point Lake Dam (HABS/HAER UT-42-H), was found near the downstream end of the spillway. The stock-drawn shovel is very large, it has brackets on its sides and a frame which likely attached to some type of supports. The shovel is 2 ft 7 in. wide by 5 ft 8 in. long with a 1 ft 2 in. maximum depth.

HISTORIC SITE FORM

(CONTINUATION SHEET)

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

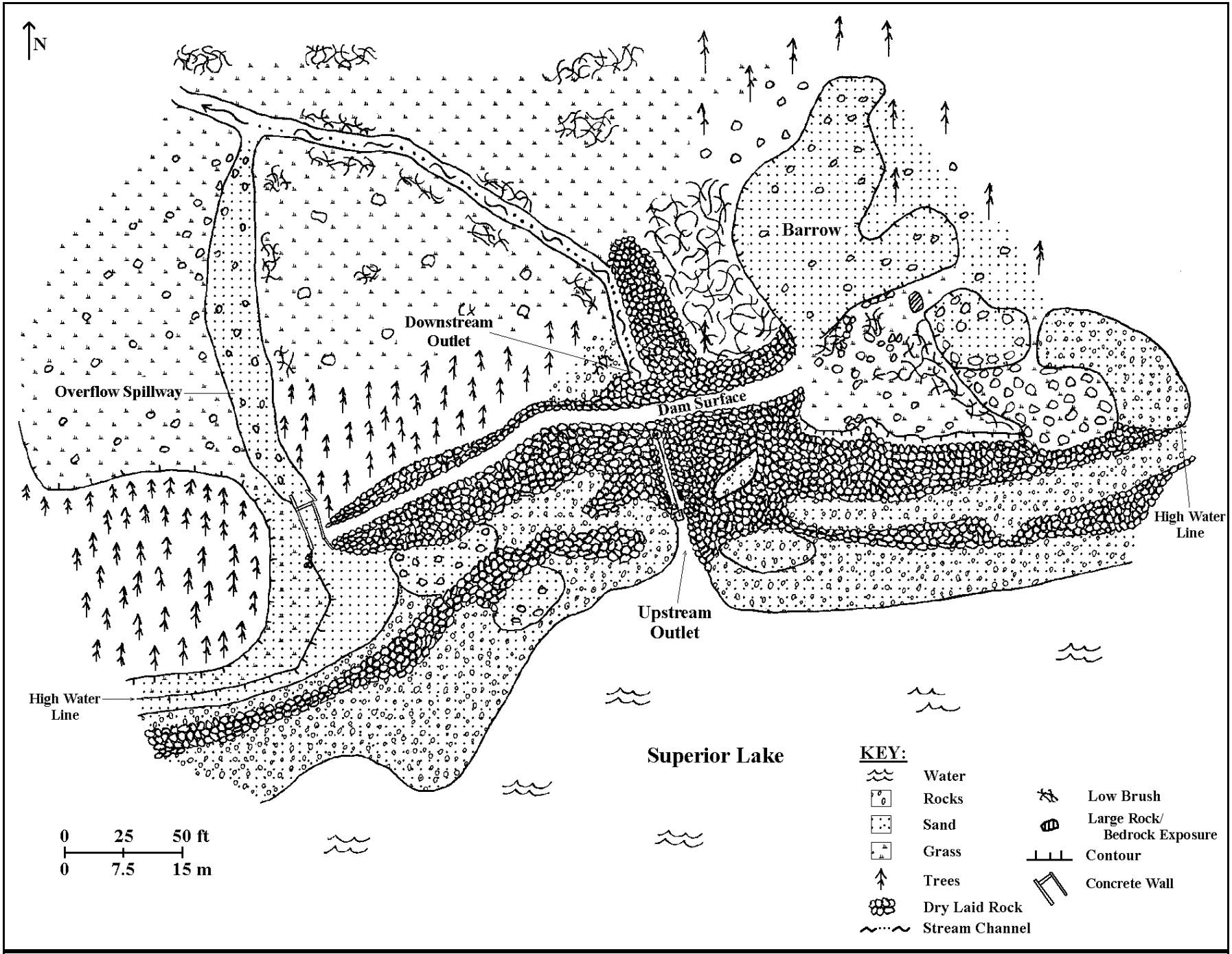
The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

References Cited

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

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.

Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).



HAER UT-42-L. Superior Lake Dam.

HAER UT-42-L. Superior Lake Dam. Overview of dam showing spillway channel in foreground; view to the southwest.

HAER UT-42-L. Superior Lake Dam. Overview of upstream face of dam; view to the southwest.

HAER UT-42-L. Superior Lake Dam. Overview of top of dam showing control box; view to the northeast.

HAER UT-42-L. Superior Lake Dam. Control box showing Superior Lake in background; close-up view to the west.

HAER UT-42-L. Superior Lake Dam. Overview of upstream face of dam showing headgate, control box, and top of dam; view to the southeast.

HAER UT-42-L. Superior Lake Dam. Remnants of previous log cribbing structure before dam was modified; close-up view to the east.

HAER UT-42-L. Superior Lake Dam. Overview of downstream outlet looking upstream; view to the north-northwest.

HAER UT-42-L. Superior Lake Dam. Overview of downstream outlet and channel looking upstream with top of dam in background; view to the north-northwest.

HAER UT-42-L. Superior Lake Dam. Northeast profile of spillway, showing wire cribbing detail and concrete step of upper level; view to the east-northeast.

HAER UT-42-L. Superior Lake Dam. Overview of lower level of spillway looking upstream toward upper level; view to the northwest.

HAER UT-42-L. Superior Lake Dam. Overview of barrow area; view to the southwest.

HAER UT-42-L. Superior Lake Dam. Large shovel showing bracket and harness detail; close-up view.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: Water Lily Lake Dam (HAER No.: UT-42-N)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 3N ***Range:*** 4W ***Section:*** 34

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 556490mE 4495325mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Burnt Mill Spring, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 3N., R.4W., NW¼ SW¼ SW¼ S. 34 (Approx. acres, 0.22 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:*** 1239/8:1-15
__ ***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 Benjamin Wood, Sagebrush Consultants, L.L.C. ***Date:*** 09-20-01

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.

Water Lily Lake Dam is a rolled earth structure reinforced with stone rip-rap facing. It is located on the south end of Water Lily Lake in the Swift Creek Drainage of the High Uintas Wilderness Area of the Ashley National Forest. The lake holds approximately 470 acre-feet of water in storage, raising the natural lake level 3 ft. A small overflow spillway and a downstream outlet channel are also associated with the dam. The upstream face of the dam is reinforced by large cobbles and small boulders of localized materials which range from 8 in. to 2 ft in diameter The downstream side of the dam is composed of earth and gravel fill materials with minimal stone reinforcement. Water Lily Lake Dam is 80 ft in length (northwest-southeast). It measures 15 to 24 ft wide at the base, stands 4 to 5 ft in height, and is 2 to 4 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet consists of a narrow outlet channel and the remaining portion of a gate lift mechanism. The upstream outlet channel is 20 ft long by 10 ft wide by 3 ft deep and ends at the remnant of the gate lift mechanism adjacent to the rock reinforced toe of the dam. The visible portion of the upstream outlet consists of an angle iron frame constructed of two, two-piece 2 in. angle iron vertical members with a single 4 in. angle iron cross member and a 2 in. diameter central pipe. The apparatus is embedded in and buried beneath grass and sediment. There is no apparent gate or handwheel associated with this structure. It is in a poor state of repair and appears to have been out of use for quite some time. The 1985 HABS/HAER recordation by Fraser and Jurale (1985) reported the headgate as inoperable.

The downstream outlet consists of a deteriorated 2½ ft diameter corrugated metal pipe set into a coarse, pebbly, board-formed concrete headwall. The bottom of the outlet is partially buried by sediment. The exposed portion of the headwall measures 8 ft long by 2 ft wide by 3 ft high. Based upon the diameter of the outlet pipe the partially buried headwall is at least 5 ft high. The outlet channel is 8 ft wide and approximately 3 ft deep. The channel flows southerly dropping over 1000 ft in elevation, eventually joining Swift Creek.

The overflow spillway is a narrow shallow area that passes through a gap between the natural slope and a large rock mound at the east end of the dam. The constructed portion of the spillway consists of a low rock alignment at the southeast end of the dam which guides water approximately 50 ft southwest, where it then merges with the downstream outlet channel.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

HISTORIC SITE FORM

(CONTINUATION SHEET)

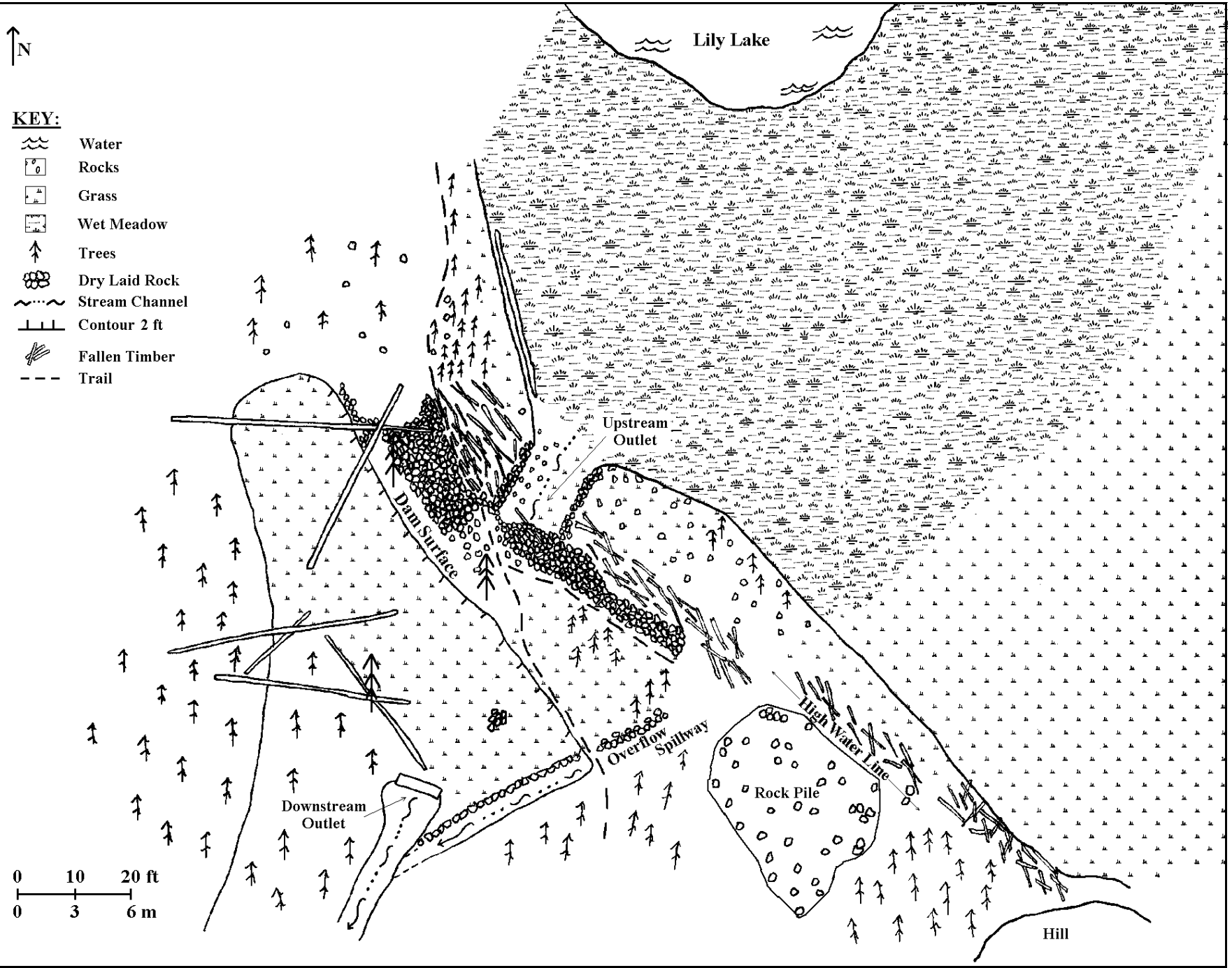
References Cited

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

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.

NOT FOR PUBLIC RELEASE

Location of site UT-42-N. Taken from USGS 7.5' Quadrangle Burnt Mill Spring, Utah (1965).



HAER UT-42-N. Water Lily Lake Dam.

HAER UT-42-N. Water Lily Lake Dam. Overview of lake from south end of dam; view to the north.

HAER UT-42-N. Water Lily Lake Dam. Overview of lake; view to the southwest.

HAER UT-42-N. Water Lily Lake Dam. Rocks at south end of dam; view to the southeast.

HAER UT-42-N. Water Lily Lake Dam. Overview of headgate; view to the southwest.

HAER UT-42-N. Water Lily Lake Dam. Headgate with lake in background; view to the north.

(10-91)

HISTORIC SITE FORM

UTAH OFFICE OF PRESERVATION

1 IDENTIFICATION

Name of Property: White Miller Lake Dam (HAER No.: UT-42-O)

Address: Upalco Unit, Ashley National Forest ***Twnshp:*** 4N ***Range:*** 4W ***Section:*** 5, 6

City, County: Mountain Home (vicinity), Duchesne County ***UTM:*** 553125mE 4503875mN

Current Owner Name: Moon Lake Water Users Association ***USGS Map Name & Date:*** USGS 7.5' Quadrangle Mount Emmons, UT (1996)

Current Owner Address: Roosevelt, Utah 84066

Tax Number: N/A

***Legal Description (include acreage)*:** T. 4N., R. 4W., SW¼ SW¼ NW¼ S. 5
T. 4N., R. 4W., SE¼ SE¼ NE¼ S. 6 (Approx. acres, 0.27 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:*** 1239/3:15-19
__ ***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 Andrew Williamson, Sagebrush Consultants, L.L.C. ***Date:*** 08-18-01

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.

White Miller Lake Dam is a sod structure with stone facing. The dam is located on the south end of White Miller Lake in the Swift Creek Basin of the High Uintas Wilderness Area of the Ashley National Forest. It holds approximately 77 acre-feet of water in storage, raising the natural lake level 2 ft. A wooden headgate, a log crib outlet weir, and a series of stone check-dams were noted in association with the dam. Both faces of the dam are reinforced by small-to-medium sized boulders of localized materials which range from 1 to 2 ft in diameter. The White Miller Lake Dam is 100 ft in length (east-west). It measures 10 to 20 ft wide at the base, stands 3 to 4 ft in height, and is approximately 3 to 10 ft wide at the top. (Continued)

see attached

5 HISTORY

Architect/Builder: Farmers Irrigation Company ***Date of Construction:*** 1929

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 Farmers Irrigation Company (Farmers) petitioned the Utah State Engineer's Office for irrigation water storage rights to natural lakes in Garfield and Swift Creek Basins of the Yellowstone Drainage of the High Uintas during the 1910s and 1920s. Farmers was a small company, primarily concerned with providing irrigation to a relatively minor amount of Uinta Basin farm acreage (Fraser, Jurale, and Righter 1989:76-77). The company proposed building dams to increase water storage on the Swift Creek Drainage in Water Lily, Deer, Farmers, and White Miller Lakes, and in the Garfield Basin of the Yellowstone Drainage in Bluebell, Drift, Five Point, and Superior Lakes. (Continued)

see attached

HISTORIC SITE FORM

(CONTINUATION SHEET)

4. ARCHITECTURAL DESCRIPTION (Continued from Page 2)

The upstream outlet consists of a narrow outlet channel leading to a wooden headgate. The outlet channel is a 12 ft long by 3½ to 4 ft wide by 3 ft deep rock lined cut in the dam bank through which water exits to the south. A wooden plank slide lift headgate controls the flow of water through the outlet channel and into the downstream outlet weir.

The downstream outlet channel consists of a narrow log crib outlet weir which discharges water into a cobble lined stream channel. The outlet channel is primarily a wooden cribbed weir with log flooring that measures 3½ ft wide by 10 ft long by 3 ft deep. The log flooring is 8 logs wide, with a maximum length of 8 ft, stopping 2 ft short of the crib's beginning. While the frame itself is still intact, the wooden plank slide-lift gate controlling water flow from the upstream outlet is no longer present, thus allowing water to exit the lake freely. Two logs/poles lie across the outlet channel on the dam's surface. These measure 10 ft and 12 ft long respectively, and average 6 in. in diameter. These logs may have been part of the weir or headgate mechanism at one time. Several large notched logs found along the shore of White Miller Lake indicate that the dam control gate was once supported by a wooden crib structure. Photographs included in the 1985 HABS/HAER documentation by Fraser and Jurale (1985i) show the crib structure to be intact at that time. Downstream on the outlet channel, three stone check-dams were placed in order to reduce the energy of the water flowing out of the lake. They are located 23, 48, and 87 ft downstream from the south end of the weir structure.

No overflow spillway was noted in association with this dam. It should be noted that heavy vegetation obscures the entire dam, mostly consisting of well established pine trees and shrubs growing out of the dam itself. This dense vegetation made accurate and thorough measurements difficult.

5. HISTORY (Continued from Page 2)

By April 1918, Farmers was granted rights to store 723 acre-feet of water at Water Lily Lake, its first reservoir (Fraser, Jurale, and Righter 1989:77). Between 1919 and 1926, permits were granted for 803 acre-feet of storage at Farmers Lake (1919), 249 acre-feet at Deer Lake (1925), and 77 acre-feet at White Miller Lake (1926). In 1926, Farmers was granted permits for 258 acre-feet of storage at Bluebell Lake and 197 acre-feet at Drift Lake. In 1927, Farmers obtained permits for 607 acre-feet of storage at Five Point Lake and 359 acre-feet at Superior Lake (Fraser, Jurale, and Righter 1989:76-80).

Actual construction at Water Lily and Farmers Lakes was initiated in 1919 (Fraser, Jurale, and Righter1989:66-68). 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. Steep terrain complicated the transport of heavy, bulky, or explosive materials. Much of the transportation of supplies to the dam sites was conducted during the winter when sturdy sleds or sleighs could be used (Fraser, Jurale, and Righter1989:67-71).

By 1920, a small earthen dam was in place at the outlet of Water Lily Lake and a tunnel had been blasted at Farmers Lake. The Farmers Lake Tunnel provided for the release of naturally stored water into White Miller Lake. Work at Water Lily and Farmers Lakes was quickly followed by the construction of dams at Deer Lake in 1925, White Miller Lake in 1926, Drift Lake in 1928, Five Point Lake in 1929, and Bluebell and Superior Lakes in 1930 (Fraser, Jurale, and Righter 1989:77-80).

The dams constructed by the Farmers Irrigation Company were small-scale in comparison to the high mountain dams built by the larger irrigation companies such as Dry Gulch and Farnsworth. Although the dams constructed by the Farmers Irrigation Company were small, their contribution was never-the-less significant. The Farmers Irrigation Company ceased operation as an individual entity when it was incorporated into the newly formed Moon Lake Water Users Association. The Moon Lake Water Users Association was organized by joining several irrigation companies, including Farnsworth, Dry Gulch, Lake Fork, Swift Creek, and Farmers in the 1930s (Fraser, Jurale, and Righter 1989:86-87, 90).

HISTORIC SITE FORM

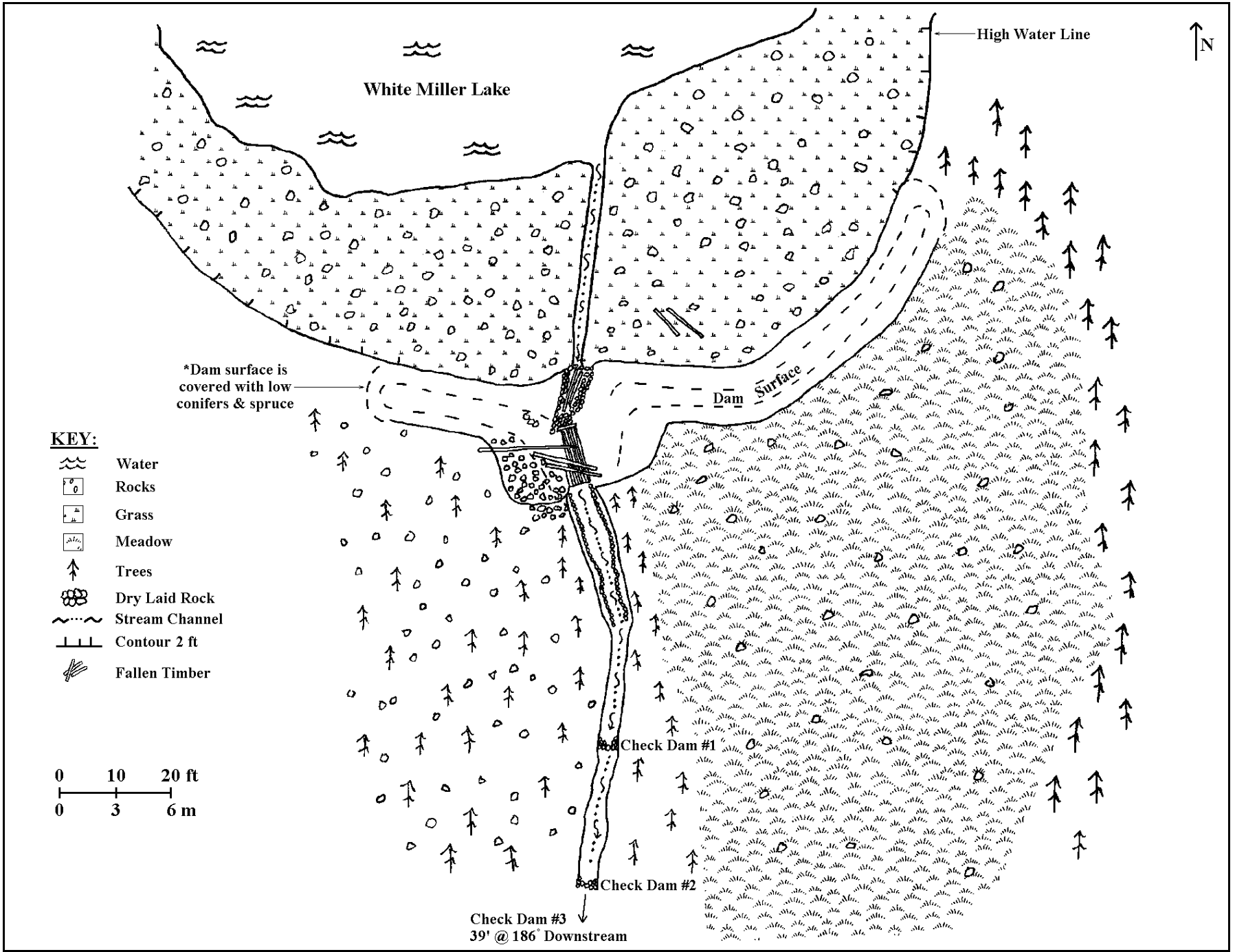
(CONTINUATION SHEET)

References Cited

Fraser, Clayton and James Jurale
1985 White Miller 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.

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).



HAER UT-42-O. White Miller Lake Dam.

HAER UT-42-O. White Miller Lake Dam. Overview of lake; view to the south-southwest.

HAER UT-42-O. White Miller Lake Dam. Overview of lake with unidentified wooden structure in foreground; view to the south-southwest.

HAER UT-42-O. White Miller Lake Dam. Overview of wooden headgate & downstream outlet weir; view to the north.

HAER UT-42-O. White Miller Lake Dam. Overview looking downstream at stone check dams in outlet channel; view to the south.

HAER UT-42-O. White Miller Lake Dam. View at eastern section of the dam from the low water mark; view to the southeast.

APPENDIX B
IMACS Site Forms

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

Intermountain Antiquities Computer System
Approved for use: BLM, Div. of State History, USFS, and NPS*

1. State No. 42Dc1411
***2. Agency No.**
3. Temp. No. ET-1

4. State Utah **County** Duchesne
5. Project CUP Section 203 High Mountain Lakes Inventory 2001
***6. Report No.** Sagebrush Consultants Report No. 1239
7. Site Name
8. Class: [X] Prehistoric [ ] Historic [ ] Paleontologic [ ] Ethnographic
9. Site Type Lithic Scatter
10. Elevation 11000 ft.
***11. UTM Grid:** [redacted]
***12.** [redacted]
***13. Meridian:** Salt Lake (1)
***14. Map Reference:** USGS 7.5' Quadrangle Mount Emmons, Utah (1996)
15. Aerial Photo: N/A
16. Location and Access: [redacted]

***17. Land Owner:** United States Forest Service (FS)
***18. Fed. Admin.:** Ashley (01)
***19. Location of Curated Materials:** N/A

20. Site Description: This site, located on [redacted] East Timothy Lake, is a medium-density prehistoric lithic scatter consisting of one unifacial tool and a variety of materials including chert, chalcedony, ignimbrite, quartzite, and other cryptocrystalline silicate material types. All three stages of lithic manufacturing appear to be represented, including some shatter, with a majority of the flakes representing (cont)

***21. Site Condition:** [ ] Excellent [ ] Good [X] Fair [ ] Poor
***22. Impact Agents:** The primary agents of impact at this site include wind and water erosion due to seasonal inundation by the waters of East Timothy Lake.

23. N.R. Status: [X] Significant [ ] Not Significant [ ] Unevaluated
Justify Based upon the nature of the sediments, this site appears to possess some potential for depth of intact subsurface cultural materials. The intact sediments at this site 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 this site. As such, this site is recommended **ELIGIBLE** to the NRHP under criterion D.

24. Photos: 1239/2:4-9
25. Recorded by: Heather M. Weymouth
***26. Survey Organization:** Sagebrush Consultants, L.L.C. ***28. Survey Date:** 08/15/01
27. Assisting Crew Members: Andrew Williamson

Attachments: [X]Part B [X]Topo Map [X]Photos [ ]Continuation Sheets
[ ]Part C [X]Site Sketch [ ]Artifact/Feature Sketch [ ]Other
[ ]Part E

PART A - ENVIRONMENTAL DATA

Site No. 42Dc1411

***29. Slope** 1° (Degrees) **Aspect** 0° (Degrees)

***30. Distance to Permanent Water:** 0 x 100 m
Water Source: [ ] **Spring/Seep** [ ] **Stream/River** [X] **Lake** [ ] **Other**
Name of Water Source [redacted]

***31. Geographic Unit:** High Uintas Subsection (RBI)

***32. Topographic Location:**

Primary Landform	**Secondary Landform**
Valley (E)	Basin (D)

Describe: The site is located on [redacted] a high mountain lake basin within a broad mountain valley.

***33. On Site Depositional Context:** Shore Feature, Existing Lake (G)
Description of Soil: The sediments of this site are sandy and largely residual, with a high content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till.

34. Vegetation:
***a. Life Zone:** Canadian (C)
***b. Community:** [T] **Primary On Site** [C] **Secondary On Site** [C] **Surrounding Site**

Describe: Vegetation observed around this site includes Douglas fir, serviceberry, Oregon grape, Canadian thistle, and assorted grasses.

.

***35. Miscellaneous Text**

36. Comments/Continuations

16. Location and Access: [redacted]

20. Site Description: tertiary stage production. It appears that this site has been subjected to heavy wave erosion, and that it has spread downslope from its original source as a result of this activity. Size sorting due to wave activity is evident, the larger flakes being limited to the up slope areas on the site and smaller, lighter flakes being distributed outward and downslope. [redacted] No temporally diagnostic artifacts or features were observed at this site.

PART B - PREHISTORIC SITES

Site No. 42Dc1411

1. **Site Type:** Lithic Scatter

*2. **Culture:**

Affiliation	Dating	Affiliation	Dating
Unknown Prehistoric			

Describe: No temporally diagnostic artifacts were identified that could tie this site with any known prehistoric culture or period.

3. **Site Dimensions:** [redacted]

*4. **Surface Collection/Method:** [X] None [ ] Designed Sample [ ] Grab Sample [ ] Complete Collection

Sampling Method: None

*5. **Estimated Depth of Fill:**

[X] Surface [ ] 20 - 100 cm [ ] Noted but unknown
[ ] 0 - 20 cm [ ] 100 cm +

How Estimated? Based upon the nature of the sediments, this site appears to possess some potential for depth of intact subsurface cultural materials.

*6. **Excavation Status:** [ ] Excavated [ ] Tested [X] Unexcavated

Testing Method: N/A

7. **Summary of Artifacts and Debris:**

[X] Lithic Scatter	[ ] Isolated Artifact	[ ] Burned Stone
[ ] Ceramic Scatter	[ ] Organic Remains	[ ] Ground Stone
[ ] Basketry	[ ] Shell	[ ] Lithic Sources

Describe: This site is a medium-density lithic scatter consisting of a variety of materials including chert, chalcedony, ignimbrite, quartzite, and other cryptocrystalline silicate material types. In addition, one large unifacially flaked tool was found. All stages of lithic manufacturing appear to be represented, including some shatter, with a majority of the flakes representing tertiary stage production (65%); secondary(30%); primary (4%); and core shatter (1%).

*8. **Lithic Tools:**

Quantity	Type	Quantity	Type
1	Unifacial Tool		

Describe: One large unifacially flaked gray chert tool was observed at this site (UTM 0554681mE/4506405mN). It measured 4.3 cm long x 3.4 cm wide x 0.9 cm thick. Several large flakes have been removed from one side of the tool, and the edges appear to have some retouch.

*9. **Lithic Debitage**
(Estimated Total Quantity): [ ] None [ ] 10 - 25 [ ] 100 - 500 [ ] 1 - 9 [X] 25 - 100 [ ] 500 +

Material Type: Lithic materials identified at this site include chert, chalcedony, ignimbrite, quartzite, and other cryptocrystalline silicate material types.

Flaking Stages: (0) Not Present (1) Rare (2) Common (3) Dominant
Decortication [1] Secondary [2] Tertiary [3] Shatter [1] Core [0]

10. **Maximum Density #/sq m (all lithics):** 10m²

PART B - PREHISTORIC SITES

Site No. 42Dc1411

***11. Ceramic Artifacts:**

Quantity	Type	Quantity	Type
0			

Describe: N/A

12. Maximum Density #/sq m (ceramics): N/A

***13. Non-architectural Features (locate on site map):**

[ ] Hearth/Firepit	[ ] Rubble Mound	[ ] Earthen Mound	[ ] Water Control
[ ] Midden	[ ] Stone Circle	[ ] Burial	[ ] Petroglyph
[ ] Depression	[ ] Rock Alignment	[ ] Talus Pit	[ ] Pictograph

Describe: N/A

***14. Architectural Features (locate on site map):**

Quantity	Material	Type	Quantity	Material	Type
0					

Describe: N/A

15. Comments/Continuations

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Site 42Dc1411. East Timothy Lake.

Site 42Dc1411. Site overview; view to the east.

Site 42Dc1411. Site overview, looking north from the dam; view to the north.

Site 42Dc1411. Representative lithics (B-1 in top row 2nd from left); close-up view.

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

Intermountain Antiquities Computer System
Approved for use: BLM, Div. of State History, USFS, and NPS*

1. **State No.** 42Dc1412
*2. **Agency No.**
3. **Temp. No.** ET-2

4. **State** Utah **County** Duchesne
5. **Project** CUP Section 203 High Mountain Lakes Inventory 2001
*6. **Report No.** Sagebrush Consultants Report No. 1239
7. **Site Name**
8. **Class:** [X] Prehistoric [ ] Historic [ ] Paleontologic [ ] Ethnographic
9. **Site Type** Lithic Scatter
10. **Elevation** 11,000 ft.
*11. **UTM Grid:** [redacted]
*12. [redacted]
*13. **Meridian:** Salt Lake (1)
*14. **Map Reference:** USGS 7.5' Quadrangle Mount Emmons, Utah (1996)
15. **Aerial Photo:** N/A
16. **Location and Access:** [redacted]

*17. **Land Owner:** United States Forest Service (FS)
*18. **Fed. Admin.:** Ashley (01)
*19. **Location of Curated Materials:** N/A

20. **Site Description:** This site, [redacted] East Timothy Lake, consists of a moderate-to-high density lithic scatter exhibiting numerous material types with a centralized debitage concentration and three projectile point fragments (PP1-PP3). Diagnostic artifacts observed at this site appears to be most closely related in form to projectile point types associated with the Black Rock-Humboldt Series (5000 to 3000 B.P.) (cont)

*21. **Site Condition:** [ ] Excellent [ ] Good [X] Fair [ ] Poor
*22. **Impact Agents:** The primary agents of impact at this site include wind and water erosion due to seasonal inundation by the waters of East Timothy Lake.

23. **N.R. Status:** [X] Significant [ ] Not Significant [ ] Unevaluated
Justify Based upon the nature of the sediments, this site appears to possess some potential for depth of intact subsurface cultural materials. The intact sediments at this site 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 this site. As such, this site is recommended **ELIGIBLE** to the NRHP under criterion D.

24. **Photos:** 1239/2:10-11
25. **Recorded by:** Heather M. Weymouth
*26. **Survey Organization:** Sagebrush Consultants, L.L.C. *28. **Survey Date:** 08/15/01
27. **Assisting Crew Members:** Andrew Williamson

Attachments: [X]Part B [X]Topo Map [X]Photos [ ]Continuation Sheets
[ ]Part C [X]Site Sketch [ ]Artifact/Feature Sketch [ ]Other
[ ]Part E

PART A - ENVIRONMENTAL DATA

Site No. 42Dc1412

***29.** **Slope** 1° (Degrees) **Aspect** 0° (Degrees)

***30.** **Distance to Permanent Water:** 0 x 100 m
Water Source: [ ] **Spring/Seep** [ ] **Stream/River** [X] **Lake** [ ] **Other**
Name of Water Source [redacted]

***31.** **Geographic Unit:** High Uintas Subsection (RBI)

***32.** **Topographic Location:**

Primary Landform	**Secondary Landform**
Valley (E)	Basin (D)

Describe: The site is located on [redacted] a high mountain lake basin within a broad mountain valley.

***33.** **On Site Depositional Context:** Shore Feature, Existing Lake (G)
Description of Soil: The sediments of this site are sandy and largely residual, with a high content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till.

34. **Vegetation:**
***a. Life Zone:** Canadian (C)
***b. Community:** [T] **Primary On Site** [C] **Secondary On Site** [C] **Surrounding Site**

Describe: Vegetation observed on and around this site includes Douglas fir, serviceberry, Oregon grape, Canadian thistle, and assorted grasses.

.

***35.** **Miscellaneous Text**

36. **Comments/Continuations**

16. **Location and Access:** [redacted]

20. **Site Description:** as defined for the Great Basin Culture Area (Drager and Ireland 1983:593). Lithic stage production represented at this site is limited to secondary and tertiary flakes, which suggests activities involving tool retouching. The concentrated area, [redacted] is filled with tertiary flakes representing all material types on the site. It is suggested that this concentration may have occurred as part of the size sorting activity which comes as a result of water and wave activity from the lake. It is believed that this site was created by and is impacted by erosional activity as a result of water and wave action, the area is filled with large beach cobbles and gravels which form natural eddies in which flakes are gathered.

PART B - PREHISTORIC SITES

Site No. 42Dc1412

1. **Site Type:** Lithic Scatter

*2. **Culture:**

Affiliation	Dating	Affiliation	Dating
Middle Archaic (MA)	Lithic cross-dating (N)		

Describe: Diagnostic artifacts observed at this site appears to be most closely related in form to projectile point types 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).

3. **Site Dimensions:** [redacted]

*4. **Surface Collection/Method:** [X] None [ ] Designed Sample [ ] Grab Sample [ ] Complete Collection

Sampling Method: None

*5. **Estimated Depth of Fill:**

[ ] Surface [ ] 20 - 100 cm [X] Noted but unknown
[ ] 0 - 20 cm [ ] 100 cm +

How Estimated? Based upon the nature of the sediments, this site appears to possess some potential for depth of intact subsurface cultural materials.

*6. **Excavation Status:** [ ] Excavated [ ] Tested [X] Unexcavated

Testing Method: N/A

7. **Summary of Artifacts and Debris:**

[X] Lithic Scatter [ ] Isolated Artifact [ ] Burned Stone
[ ] Ceramic Scatter [ ] Organic Remains [ ] Ground Stone
[ ] Basketry [ ] Shell [ ] Lithic Sources

Describe: This site consists of a moderate-high density lithic scatter exhibiting numerous material types with a centralized debitage concentration and three projectile point fragments (PP1-PP3). Lithic stage production represented at this site is limited to secondary and tertiary flakes, which suggests activities involving tool retouching. A concentration of lithic debitage, measuring approximately 1 by 2 m, is filled with tertiary flakes representing all material types on the site. It is suggested that this concentration may have occurred as part of the size sorting activity which comes as a result of water and wave activity from the lake. No additional tools, artifacts, or features were observed at this site.

*8. **Lithic Tools:**

Quantity	Type	Quantity	Type
3 (PP1-PP3)	Projectile Point		

Describe: Three tool fragments were found at this site which include 2 projectile point bases (PP1,PP2) and one projectile point mid-section (PP3). PP1 is a red chert projectile point base with a concave base. It measures 1.0 cm long by 1.9 cm wide by 0.3 cm thick. The base concavity is 0.3 cm deep and indicates polishing through grinding. This projectile point appears to be (Cont.)

*9. **Lithic Debitage**
(Estimated Total Quantity): [ ] None [ ] 10 - 25 [ ] 100 - 500
[ ] 1 - 9 [X] 25 - 100 [ ] 500 +

Material Type: Material types include chalcedony, red and gray chert, quartzite, and ignimbrite.
Flaking Stages: (0) Not Present (1) Rare (2) Common (3) Dominant
Decortication [0] Secondary [2] Tertiary [2] Shatter [0] Core [0]

10. **Maximum Density #/sq m (all lithics):** 30m²

PART B - PREHISTORIC SITES

Site No. 42Dc1412

***11. Ceramic Artifacts:**

Quantity	Type	Quantity	Type
0			

Describe: N/A

12. Maximum Density #/sq m (ceramics): N/A

***13. Non-architectural Features (locate on site map):**

[ ] Hearth/Firepit	[ ] Rubble Mound	[ ] Earthen Mound	[ ] Water Control
[ ] Midden	[ ] Stone Circle	[ ] Burial	[ ] Petroglyph
[ ] Depression	[ ] Rock Alignment	[ ] Talus Pit	[ ] Pictograph

Describe: N/A

***14. Architectural Features (locate on site map):**

Quantity	Material	Type	Quantity	Material	Type
0					

Describe: N/A

15. Comments/Continuations

***8. Lithic Tools: Describe: (Cont.)** most closely related in form to projectile point types 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). PP2 is a white chalcedony projectile point with a concave base. It measures 2.0 cm wide by 2.3 cm long by 0.3 cm thick. It has a basal concavity of 0.5 cm and shows no grinding or polishing action. This projectile point base appears to be most closely related in form to projectile point types 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). PP3 is a non-diagnostic gray chert projectile point mid-section composed of poor material. Distinct hinge fractures on the proximal and distal ends of the tool suggest breakage during production. It measures 1.2 cm long by 0.8 cm wide by 0.4 cm thick. No additional lithic tools were observed at this site.

References:

Drager, Dwight L. and Arthur K. Ireland (editors)
1986 *The Seedskadee Project: Remote Sensing in Non-site Archeology*. United States Department of the Interior, National Park Service, Southwestern Region, Southwest Cultural Resources Center, Division of Cultural Research, Branch of Remote Sensing, Albuquerque, New Mexico and Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah, Interagency Agreement No. 2-07-40-S3351. Copies Available from Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah.

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Site 42Dc1412. East Timothy Lake.

Site 42Dc1412. Site overview; view to the west.

Site 42Dc1412. Site overview; view to the northwest.

Site 42Dc1412. Representative lithics (PP-1 through PP-3 in top row left, left to right); close-up view.

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

Intermountain Antiquities Computer System
Approved for use: BLM, Div. of State History, USFS, and NPS*

1. State No. 42Dc1413
***2. Agency No.**
3. Temp. No. ET-3

4. State Utah **County** Duchesne
5. Project CUP Section 203 High Mountain Lakes Inventory 2001
***6. Report No.** Sagebrush Consultants Report No. 1239
7. Site Name
8. Class: [X] Prehistoric [ ] Historic [ ] Paleontologic [ ] Ethnographic
9. Site Type Lithic Scatter
10. Elevation 11,000 ft.
***11. UTM Grid:** [redacted]
***12.** [redacted]
***13. Meridian:** Salt Lake (1)
***14. Map Reference:** USGS 7.5' Quadrangle Mount Emmons, Utah (1996)
15. Aerial Photo: N/A
16. Location and Access: [redacted]

***17. Land Owner:** United States Forest Service (FS)
***18. Fed. Admin.:** Ashley (01)
***19. Location of Curated Materials:** N/A

20. Site Description: This site, located on [redacted] East Timothy Lake [redacted] is a prehistoric lithic scatter composed entirely of quartzite flakes. The lithic assemblage at this site displays a maximum density of ten lithics per square meter and is dominated by secondary flakes, however, all stages of lithic reduction are (cont)

***21. Site Condition:** [ ] Excellent [ ] Good [X] Fair [ ] Poor
***22. Impact Agents:** The primary agents of impact at this site include wind and water erosion due to seasonal inundation by the waters of East Timothy Lake.

23. N.R. Status: [ ] Significant [X] Not Significant [ ] Unevaluated
Justify This site represents a surface scatter of lithic debitage. The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth. This site lacks features, formal tools, and inter-site spatial distribution. It cannot be associated with any known prehistoric culture, period, or occupation. Based upon an evaluation of the current condition, this site is not likely to provide further information important to the understanding of aboriginal occupation of mountain lake margins of the High Uintas. As such, this site is recommended **NOT** eligible to the NRHP.

24. Photos: 1239/2:13-14
25. Recorded by: Heather M. Weymouth
***26. Survey Organization:** Sagebrush Consultants, L.L.C. ***28. Survey Date:** 08/15/01
27. Assisting Crew Members: Andrew Williamson

Attachments: [X]Part B [X]Topo Map [X]Photos [ ]Continuation Sheets
[ ]Part C [X]Site Sketch [ ]Artifact/Feature Sketch [ ]Other
[ ]Part E

PART A - ENVIRONMENTAL DATA

Site No. 42Dc1413

***29. Slope** 1° (Degrees) **Aspect** 90° (Degrees)

***30. Distance to Permanent Water:** 0 x 100 m
Water Source: [ ] **Spring/Seep** [ ] **Stream/River** [X] **Lake** [ ] **Other**
Name of Water Source [redacted]

***31. Geographic Unit:** High Uintas Subsection (RBI)

***32. Topographic Location:**

Primary Landform	Secondary Landform
Valley (E)	Basin (D)

Describe: The site is located on [redacted] a high mountain lake basin within a broad mountain valley.

***33. On Site Depositional Context:** [redacted]
Description of Soil: The sediments of this site are sandy and largely residual, with a high content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till.

34. Vegetation:
***a. Life Zone:** Canadian (C)
***b. Community:** [T] **Primary On Site** [C] **Secondary On Site** [C] **Surrounding Site**

Describe: Vegetation observed around this site includes Douglas fir, serviceberry, Oregon grape, Canadian thistle, and assorted grasses.

***35. Miscellaneous Text**

36. Comments/Continuations

16. Location and Access: [redacted] East Timothy Lake.

20. Site Description: represented. No diagnostic artifacts were observed at this site, but the large number of secondary flakes would suggest that these would be found elsewhere in completed forms. [redacted] It is also filled with large beach cobbles and gravels, and is impacted by wave and water erosion activity, although no size sorting is apparent.

PART B - PREHISTORIC SITES

Site No. 42Dc1413

1. **Site Type:** Lithic Scatter

*2. **Culture:** **Affiliation** **Dating** **Affiliation** **Dating**
Unknown Prehistoric
Describe: No temporally diagnostic artifacts were identified that could tie this site with any known prehistoric culture or period.

3. **Site Dimensions:** [redacted]

*4. **Surface Collection/Method:** [X] None [ ] Designed Sample
[ ] Grab Sample [ ] Complete Collection
Sampling Method: None

*5. **Estimated Depth of Fill:**
[X] Surface [ ] 20 - 100 cm [ ] Noted but unknown
[ ] 0 - 20 cm [ ] 100 cm +
How Estimated? The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth.

*6. **Excavation Status:** [ ] Excavated [ ] Tested [X] Unexcavated
Testing Method: N/A

7. **Summary of Artifacts and Debris:**
[X] Lithic Scatter [ ] Isolated Artifact [ ] Burned Stone
[ ] Ceramic Scatter [ ] Organic Remains [ ] Ground Stone
[ ] Basketry [ ] Shell [ ] Lithic Sources

Describe: This site is a composed entirely of gray quartzite flakes. The lithic assemblage at this site displays a maximum density of ten lithics per square meter and is dominated by secondary flakes (80%), however, all stages of lithic reduction are represented (5% primary and 15% tertiary). No diagnostic artifacts were observed at this site, but the large number of secondary flakes would suggest that these would be found elsewhere in completed forms. The site is filled with large beach cobbles and gravels and is impacted by wave and water erosion activity, although no size sorting is apparent.

*8. **Lithic Tools:** **Quantity** **Type** **Quantity** **Type**

Describe: N/A

*9. **Lithic Debitage**
(Estimated Total Quantity): [ ] None [X] 10 - 25 [ ] 100 - 500
[ ] 1 - 9 [ ] 25 - 100 [ ] 500 +
Material Type: Gray quartzite was the only material observed at this site.

Flaking Stages: (0) Not Present (1) Rare (2) Common (3) Dominant
Decortication [1] Secondary [3] Tertiary [2] Shatter [0] Core [0]

10. **Maximum Density #/sq m (all lithics):** 10m²

PART B - PREHISTORIC SITES

Site No. 42Dc1413

***11. Ceramic Artifacts:**

Quantity	Type	Quantity	Type
0			

Describe: N/A

12. Maximum Density #/sq m (ceramics): N/A

***13. Non-architectural Features (locate on site map):**

[ ] Hearth/Firepit	[ ] Rubble Mound	[ ] Earthen Mound	[ ] Water Control
[ ] Midden	[ ] Stone Circle	[ ] Burial	[ ] Petroglyph
[ ] Depression	[ ] Rock Alignment	[ ] Talus Pit	[ ] Pictograph

Describe: N/A

***14. Architectural Features (locate on site map):**

Quantity	Material	Type	Quantity	Material	Type
0					

Describe: N/A

15. Comments/Continuations

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Site 42Dc1413. East Timothy Lake.

Site 42Dc1413. Site overview; view to the east.

Site 42Dc1413. Representative lithics; close-up view.

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

Intermountain Antiquities Computer System
Approved for use: BLM, Div. of State History,
USFS, and NPS*

1. State No. 42Dc1414
***2. Agency No.**
3. Temp. No. ET-4

4. State Utah **County** Duchesne
5. Project CUP Section 203 High Mountain Lakes Inventory 2001
***6. Report No.** Sagebrush Consultants Report No. 1239
7. Site Name
8. Class: [X] Prehistoric [ ] Historic [ ] Paleontologic [ ] Ethnographic
9. Site Type Lithic Scatter
10. Elevation 11,000 ft.
***11. UTM Grid:** [redacted]
***12.** [redacted]
***13. Meridian:** Salt Lake (1)
***14. Map Reference:** USGS 7.5' Quadrangle Mount Emmons, Utah (1996)
15. Aerial Photo: N/A
16. Location and Access: [redacted]

***17. Land Owner:** United States Forest Service (FS)
***18. Fed. Admin.:** Ashley (01)
***19. Location of Curated Materials:** N/A

20. Site Description: This site, located on [redacted] East Timothy Lake, is a medium density lithic scatter comprised of approximately 20 flakes and one large, unifacial quartzite scraper. The lithic assemblage includes quartzite, chalcedony, and chert and is dominated by secondary flakes. [redacted] No diagnostic artifacts or features were observed at this site.

***21. Site Condition:** [ ] Excellent [ ] Good [X] Fair [ ] Poor
***22. Impact Agents:** The primary agents of impact at this site include wind and water erosion due to seasonal inundation by the waters of East Timothy Lake.

23. N.R. Status: [ ] Significant [X] Not Significant [ ] Unevaluated
Justify This site represents a surface scatter of lithic debitage. The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth. This site lacks features, formal tools, and inter-site spatial distribution. It cannot be associated with any known prehistoric culture, period, or occupation. Based upon an evaluation of the current condition, this site is not likely to provide further information important to the understanding of aboriginal occupation of mountain lake margins of the High Uintas. As such, this site is recommended **NOT** eligible to the NRHP.

24. Photos: 1239/2:15-17
25. Recorded by: Heather M. Weymouth
***26. Survey Organization:** Sagebrush Consultants, L.L.C. ***28. Survey Date:** 08/15/01
27. Assisting Crew Members: Andrew Williamson

Attachments: [X]Part B [X]Topo Map [X]Photos [ ]Continuation Sheets
[ ]Part C [X]Site Sketch [ ]Artifact/Feature Sketch [ ]Other
[ ]Part E

PART A - ENVIRONMENTAL DATA

Site No. 42Dc1414

***29. Slope** 1° (Degrees) **Aspect** 180° (Degrees)

***30. Distance to Permanent Water:** 0 x 100 m
Water Source: [ ] **Spring/Seep** [ ] **Stream/River** [X] **Lake** [ ] **Other**
Name of Water Source [redacted]

***31. Geographic Unit:** High Uintas Subsection (RBI)

***32. Topographic Location:**

Primary Landform	**Secondary Landform**
Valley (E)	Basin (D)

Describe: The site is located on [redacted] a high mountain lake basin within a broad mountain valley.

***33. On Site Depositional Context:** Shore Feature, Existing Lake (G)
Description of Soil: The sediments of this site are sandy and largely residual, with a high content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till.

34. Vegetation:
***a. Life Zone:** Canadian (C)
***b. Community:** [T] **Primary On Site** [C] **Secondary On Site** [C] **Surrounding Site**

Describe: Vegetation observed around this site includes Douglas fir, serviceberry, Oregon grape, Canadian thistle, and assorted grasses.

***35. Miscellaneous Text**

36. Comments/Continuations

16. Location and Access: [redacted] East Timothy Lake.

PART B - PREHISTORIC SITES

Site No. 42Dc1414

1. **Site Type:** Lithic Scatter

*2. **Culture:** **Affiliation** **Dating** **Affiliation** **Dating**
Unknown Prehistoric
Describe: No temporally diagnostic artifacts were identified that could tie this site with any known prehistoric culture or period.

3. **Site Dimensions:** [redacted]

*4. **Surface Collection/Method:** [X] None [ ] Designed Sample
[ ] Grab Sample [ ] Complete Collection
Sampling Method: N/A

*5. **Estimated Depth of Fill:**
[X] Surface [ ] 20 - 100 cm [ ] Noted but unknown
[ ] 0 - 20 cm [ ] 100 cm +
How Estimated? The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth.

*6. **Excavation Status:** [ ] Excavated [ ] Tested [X] Unexcavated
Testing Method: N/A

7. **Summary of Artifacts and Debris:**
[X] Lithic Scatter [ ] Isolated Artifact [ ] Burned Stone
[ ] Ceramic Scatter [ ] Organic Remains [ ] Ground Stone
[ ] Basketry [ ] Shell [ ] Lithic Sources

Describe: This site is a medium density lithic scatter comprised of approximately 20 flakes and a large unifacial quartzite scraper (S1). The lithic assemblage includes quartzite, chalcedony, and chert and is dominated by secondary flakes. Of these, 25% represented tertiary stage production, 60% secondary, and 15% represented primary stage production. Flakes at this site are distributed over a wide area and do not appear to follow any size sorting patterning. No diagnostic artifacts or features were observed at this site.

*8. **Lithic Tools:** **Quantity** **Type** **Quantity** **Type**
1 (S1) Unifacial Scraper

Describe: S1 is a gray quartzite unifacial quartzite scraper measuring 6.5 cm long x 4.7 cm wide x 1.2 cm thick. Several large flakes were removed from one side of the tool which exhibits no evidence of retouching.

*9. **Lithic Debitage**
(Estimated Total Quantity): [ ] None [X] 10 - 25 [ ] 100 - 500
[ ] 1 - 9 [ ] 25 - 100 [ ] 500 +
Material Type: Lithic materials identified at this site include: quartzite (20%), white chalcedony (10%), and reddish-brown chert (70%).
Flaking Stages: (0) Not Present (1) Rare (2) Common (3) Dominant
Decortication [1] Secondary [3] Tertiary [2] Shatter [0] Core [0]

10. **Maximum Density #/sq m (all lithics):** 5m²

PART B - PREHISTORIC SITES

Site No. 42Dc1414

***11. Ceramic Artifacts:**

Quantity	Type	Quantity	Type
0			

Describe: N/A

12. Maximum Density #/sq m (ceramics): N/A

***13. Non-architectural Features (locate on site map):**

[ ] Hearth/Firepit	[ ] Rubble Mound	[ ] Earthen Mound	[ ] Water Control
[ ] Midden	[ ] Stone Circle	[ ] Burial	[ ] Petroglyph
[ ] Depression	[ ] Rock Alignment	[ ] Talus Pit	[ ] Pictograph

Describe: N/A

***14. Architectural Features (locate on site map):**

Quantity	Material	Type	Quantity	Material	Type
0					

Describe: N/A

15. Comments/Continuations

NOT FOR PUBLIC RELEASE

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Site 42Dc1414. East Timothy Lake.

Site 42Dc1414. Site overview; view to the south.

Site 42Dc1414. Unifacial quartzite scraper; close-up view.

Site 42Dc1414. Representative lithics; close-up view.

IMACS SITE FORM

PART A - ADMINISTRATIVE DATA

Intermountain Antiquities Computer System
Approved for use: BLM, Div. of State History, USFS, and NPS*

1. **State No.** 42Dc1415
*2. **Agency No.**
3. **Temp. No.**

4. **State** Utah **County** Duchesne
5. **Project** CUP Section 203 High Mountain Lakes Inventory 2001
*6. **Report No.** Sagebrush Consultants Report No. 1239
7. **Site Name**
8. **Class:** [X] Prehistoric [ ] Historic [ ] Paleontologic [ ] Ethnographic
9. **Site Type** Lithic Scatter
10. **Elevation** 11, 000 ft.
*11. **UTM Grid:** [redacted]
*12. [redacted]
*13. **Meridian:** Salt Lake (1)
*14. **Map Reference:** USGS 7.5' Quadrangle Mount Emmons, Utah (1996)
15. **Aerial Photo:** N/A
16. **Location and Access:** [redacted]

*17. **Land Owner:** United States Forest Service (FS)
*18. **Fed. Admin.:** Ashley (01)
*19. **Location of Curated Materials:** N/A

20. **Site Description:** This site, located [redacted] of East Timothy Lake, is comprised of three lithic tools made of different lithic material types [redacted] No debitage, additional artifacts, or features were observed in association with this site. [redacted] Although only three formed tools were identified at this location it was recorded as a site based upon its proximity to the spring and the manufacture of the tools from three distinct source materials.

*21. **Site Condition:** [ ] Excellent [ ] Good [X] Fair [ ] Poor
*22. **Impact Agents:** The primary agents of impact at this site include wind and water erosion due to seasonal inundation by the waters of East Timothy Lake.

23. **N.R. Status:** [ ] Significant [X] Not Significant [ ] Unevaluated
Justify This site represents a small surface scatter of lithic tools. The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth. This site lacks features, formal tools, and inter-site spatial distribution. (Cont)

24. **Photos:** 1239/2:18-20
25. **Recorded by:** Heather M. Weymouth
*26. **Survey Organization:** Sagebrush Consultants, L.L.C. *28. **Survey Date:** 8/15/01
27. **Assisting Crew Members:** Andrew Williamson

Attachments: [X]Part B [X]Topo Map [X]Photos [ ]Continuation Sheets
[ ]Part C [X]Site Sketch [ ]Artifact/Feature Sketch [ ]Other
[ ]Part E

PART A - ENVIRONMENTAL DATA

Site No. 42Dc1415

***29. Slope** 1° (Degrees) **Aspect** 200° (Degrees)

***30. Distance to Permanent Water:** 0 x 100 m
Water Source: [ ] **Spring/Seep** [ ] **Stream/River** [X] **Lake** [ ] **Other**
Name of Water Source [redacted]

***31. Geographic Unit:** High Uintas Subsection (RBI)

***32. Topographic Location:**

Primary Landform	**Secondary Landform**
Valley (E)	Basin (D)

Describe: The site is located on [redacted] a high mountain lake basin within a broad mountain valley.

***33. On Site Depositional Context:** Shore Feature, Existing Lake (G)
Description of Soil: The sediments of this site are sandy and largely residual, with a high content of rounded pebbles, gravels, and angular boulders derived from exposed bedrock and glacial till.

34. Vegetation:
***a. Life Zone:** Canadian (C)
***b. Community:** [T] **Primary On Site** [C] **Secondary On Site** [C] **Surrounding Site**

Describe: Vegetation observed around this site includes Douglas fir, serviceberry, Oregon grape, Canadian thistle, and assorted grasses.

.

***35. Miscellaneous Text**

36. Comments/Continuations

16. Location and Access(cont): [redacted] East Timothy Lake.

23. N.R. Status: Justify (cont): It cannot be associated with any known prehistoric culture, period, or occupation. Based upon an evaluation of the current condition, this site is not likely to provide further information important to the understanding of aboriginal occupation of mountain lake margins of the High Uintas. As such, this site is recommended **NOT** eligible to the NRHP.

PART B - PREHISTORIC SITES

Site No. 42Dc1415

1. **Site Type:** Lithic Scatter

*2. **Culture:** **Affiliation** **Dating** **Affiliation** **Dating**
Unknown Prehistoric
Describe: No temporally diagnostic artifacts were identified that could tie this site with any known prehistoric culture or period.

3. **Site Dimensions:** [redacted]

*4. **Surface Collection/Method:** [X] None [ ] Designed Sample
[ ] Grab Sample [ ] Complete Collection
Sampling Method: None

*5. **Estimated Depth of Fill:**
[X] Surface [ ] 20 - 100 cm [ ] Noted but unknown
[ ] 0 - 20 cm [ ] 100 cm +
How Estimated? The forces of erosion have exposed the cultural materials at this site, leaving little potential for subsurface cultural depth.

*6. **Excavation Status:** [ ] Excavated [ ] Tested [X] Unexcavated
Testing Method: N/A

7. **Summary of Artifacts and Debris:**
[X] Lithic Scatter [ ] Isolated Artifact [ ] Burned Stone
[ ] Ceramic Scatter [ ] Organic Remains [ ] Ground Stone
[ ] Basketry [ ] Shell [ ] Lithic Sources

Describe: This site, located [redacted] of East Timothy Lake, is comprised of three lithic tools in a 2 m by 6 m area. No debitage, additional tools, and no features were observed in association with this site.

*8. **Lithic Tools:** **Quantity** **Type** **Quantity** **Type**
3 (B1-B3) biface

Describe: B1 is a gray chert biface that measures 3.3 cm long x 2.1 cm wide x 0.6 cm thick B2 is a squared, yellow chalcedony biface with a large hinge fracture on the ventral surface of the artifact. It measures 5.5 cm long x 3.4 cm wide x 0.4 cm thick. B3 is a tan quartzite biface with a defined point. The dorsal surface shows heavy flaking, but the ventral surface is only moderately retouched. It measures 3.4 cm long x 4.2 cm wide x 0.7 cm thick. No additional artifacts and no features were observed at this site.

*9. **Lithic Debitage**
(Estimated Total Quantity): [X] None [ ] 10 - 25 [ ] 100 - 500
[ ] 1 - 9 [ ] 25 - 100 [ ] 500 +
Material Type: Lithic materials identified at this site include chalcedony, quartzite, and chert.
Flaking Stages: (0) Not Present (1) Rare (2) Common (3) Dominant
Decortication [0] Secondary [0] Tertiary [0] Shatter [0] Core [0]

10. **Maximum Density #/sq m (all lithics):** 1m²

PART B - PREHISTORIC SITES

Site No. 42Dc1415

***11. Ceramic Artifacts:**

Quantity	Type	Quantity	Type
0			

Describe: N/A

12. Maximum Density #/sq m (ceramics): N/A

***13. Non-architectural Features (locate on site map):**

[ ] Hearth/Firepit	[ ] Rubble Mound	[ ] Earthen Mound	[ ] Water Control
[ ] Midden	[ ] Stone Circle	[ ] Burial	[ ] Petroglyph
[ ] Depression	[ ] Rock Alignment	[ ] Talus Pit	[ ] Pictograph

Describe: N/A

***14. Architectural Features (locate on site map):**

Quantity	Material	Type	Quantity	Material	Type
0					

Describe: N/A

15. Comments/Continuations

NOT FOR PUBLIC RELEASE

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).

Site 42Dc1415. East Timothy Lake.

Site 42Dc1415. Site overview; view to the east.

Site 42Dc1415. B-1 through B-3 (left to right); close-up view.

APPENDIX C
Isolated Artifact Forms

ISOLATED ARTIFACT RECORD

1. **Field Number:** DR-IF-1 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** 7.5' Garfiled Basin, Utah (1996)
6. **Artifact Owner (Landowner):** United States Forest Service **Federal Agency/District:** Upalco Unit, 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:** Heather M. Weymouth **Date:** 9-11-02
   Company/Institution: Sagebrush Consultants, L.L.C. (Report No. 1239)
9. **Sketch or Photo (Circle One):** **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period):** DR-IF-1, located [redacted] of Drift Lake, is a white chalcedony projectile point fragment. It appears to be most closely related in form to the Elko Corner-notched projectile point type of the Elko-Bitterroot Series (10,000-500 B.P.) as defined for the Great Basin culture area (Drager and Ireland 1986:591). It measures 4.1 cm long by 2.7 cm wide by 0.3 cm thick with the distal (tip) end of the projectile point absent due to an apparent impact fracture. No other cultural materials were noted at this location. This artifact is located at UTM 4505750mN/543225mE.
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):** 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 region 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. 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.
12. **Attach a USGS Map Showing Artifact Location.**

Location of sites UT-42-A, UT-42-E, UT-42-H, UT-42-L, and isolated find DR-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996).

ISOLATED ARTIFACT RECORD

1. **Field Number:** ET-IF-1 **2. Curation Number:** N/A
3. **Legal Location:** [redacted]
4. **County:** Duchesne **5. USGS Map Reference:** 7.5' Mount Emmons, Utah (1996)
6. **Artifact Owner (Landowner):** United States Forest Service **Federal Agency/District:** Upalco Unit, 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:** Heather M. Weymouth **Date:** 8-10-01
   Company/Institution: Sagebrush Consultants L.L.C. (Report No. 1239)
9. **Sketch or Photo (Circle One):** Photo **Scale:** See Photo

10. **Artifact Description (Dimensions, materials, use/function, time period):**
    ET-IF-1, located on [redacted] East Timothy Lake [redacted] is projectile point midsection. It is composed of tan quartzite and measures 1.6 cm long x 1.2 cm wide x 0.2 cm thick. [redacted]
11. **Environmental Location (Topography, vegetation, soils, slope, hydrology):** 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 region 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. 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.
12. **Attach a USGS Map Showing Artifact Location.**

Location of sites UT-42-D, UT-42-F, UT-42-G, UT-42-O, and isolated find ET-IF-1. Taken from USGS 7.5' Quadrangle Garfield Basin, Utah (1996) and Mount Emmons, Utah (1996).