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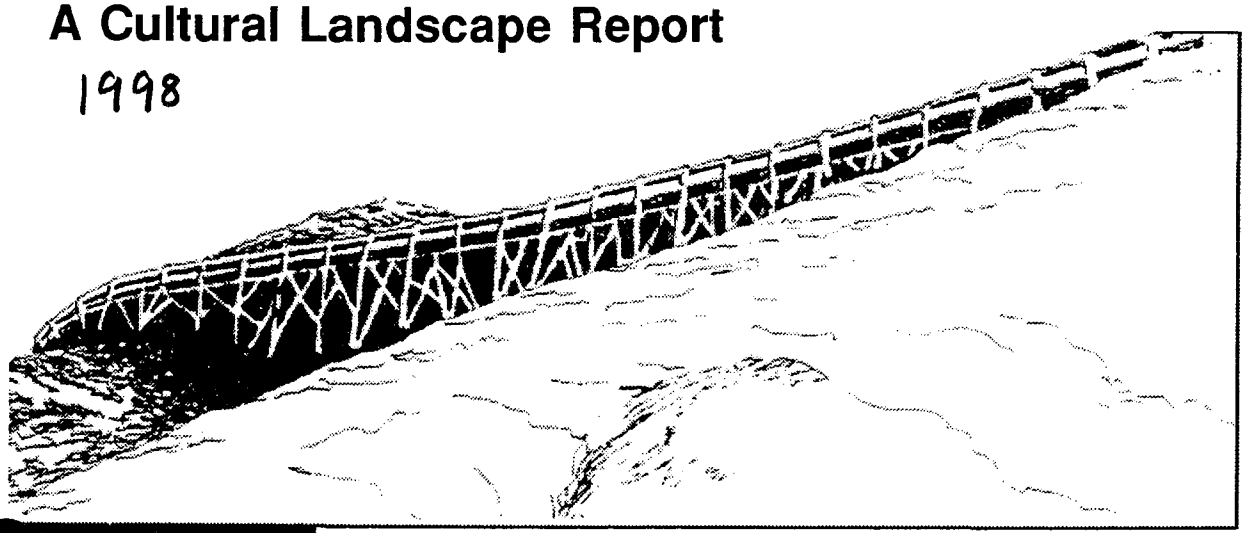
The Chisana-Gold Hill Landscape

A Cultural Landscape Report

1998



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The Chisana-Gold Hill Landscape

A Cultural Landscape Report

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INTRODUCTION

Contents

This section explains the groundwork for the Chisana-Gold Hill Landscape project. It provides information about the origin of the project, the process used to accomplish the project, the reason for the project, a summary of the findings and definitions of specific terms used within this document. Specific topics covered in the Introduction include:

I. PURPOSE AND SCOPE OF THE PROJECT
II. HISTORICAL OVERVIEW
III. METHODOLOGY AND SCOPE OF WORK
IV. SUMMARY OF FINDINGS
V. DEFINITIONS

INTRODUCTION

I. PURPOSE AND SCOPE OF THE PROJECT

The Chisana Historic Mining Landscape (also referred to in this document as Chisana-Gold Hill Landscape, Chisana-Gold Hill Cultural Landscape, Chisana Mining District, Chisana Placer District, Chisana-Gold Hill and Gold Hill-Chisana Historic Mining District) is a complex vernacular landscape that typifies placer mining in Alaska. This type of vernacular landscape is found throughout Alaska. This study documents and evaluates a specific but typical placer mining landscape of Alaska: the Chisana-Gold Hill Cultural Landscape.

Active mining continues in Chisana-Gold Hill today. Valid existing mining rights are upheld under the conditions of the original Proclamation 4625 which converted the Wrangell-St. Elias area into a National Monument in 1979. Mining rights also are upheld under the subsequent re-designation of the area to a Park and Preserve by the Alaska National Interest Lands Conservation Act (ANILCA) in 1980. The potential threat of degradation of the site's cultural resources through mining prompts the evaluation of this cultural landscape.

Current resource management philosophies have come to embrace landscapes as cultural resources. Cultural resources are protected by several laws including the Antiquities Act of 1906 and the National Historic Preservation Act (NHPA) of 1966. The Mining in the Parks Act of 1976 restricts mining activities to prevent or minimize damage to the environment and other park resources. The focus of resource management issues before the National Park Service is to find optimum ways to balance mining with resource needs.

In other words, Wrangell-St. Elias Park must uphold the rights of valid mining claimants and at the same time protect the natural and cultural resources within these mining claims. These two responsibilities conflict within the Gold Hill area and require compromising decisions; therefore, a major thrust of this study is to supply information that will assist management when making decisions. To accomplish this purpose this study provides a documentation and evaluation of the Chisana-Gold Hill Cultural Landscape. In the broadest sense, this study documents and evaluates historic landscape features and patterns at Chisana-Gold Hill. This process leads to the development of management guidelines and site design concepts aimed at improving and preserving the district's significant landscape resources.

II. HISTORICAL OVERVIEW

At Chisana-Gold Hill and other areas, placer mining forms vernacular landscapes common to Alaskan history. Unlike many other placer mining areas, however, successive examples of placer mining remain evident in this landscape. Normally, newer technologies cover and destroy evidence of prior mining technologies, but the limited gold source and the remote location contribute to the preservation of this placer mining landscape.

Before 1913, the western world saw the Chisana-Gold Hill Landscape as a speck in the vast Alaska wilderness. Indigenous Athabaskan native groups occupied this area before the onslaught of gold seekers. This native population provided for their families by hunting and trapping on this land.

A period of "Exploration" preceded the discovery of gold in the Chisana area. Fred H. Moffit, Adolf Knopf and Stephen R. Capps surveyed the region for the United States Geological Society (USGS) in 1908. Although the team found no important mineral deposits, it reported small quartz veins and noted the possibility of placer gold in the area (Moffit, et al., 1910). Billy James, N. P. Nelson and Fred Best investigated the region in 1912. Indian Joe, a native resident from the Upper Tanana region, showed James a quartz prospect on Chathenda Creek. With winter closing-in, James made plans to return and thoroughly prospect the area the following year (Capps, 1916).

The "Stampede Period" began with the discovery of gold by James, Nelson and Wales in 1913 (figure 1). Historic accounts reported stampeders flocking to the area and staking claims up and down the drainages of the Gold Hill area. These gold seekers left scattered campsites throughout the district and gold-bearing creeks soon carried the traditional "boom" area creek names, such as Bonanza Creek and Little Eldorado Creek. Trails, claim posts and signs marked the hillsides and placer mining techniques altered the flow of the creeks. Bonanza City, a tent city, developed at the mouth of Bonanza Creek, while a second larger city developed at the mouth of Chathenda Creek. Its name was "Shushanna" to locals, but the official spelling remained Chisana. These supply centers grew quickly even though they provided only limited supplies.

By 1915, the stampede was over and the "Boom Period" began. A stable number of miners worked the creek bottoms and non-mechanized mining techniques prevailed. Ground sluicing, shoveling-in and drift mining were used to extract gold from the creeks. Gold yields were good for a

few miners but yields gradually decreased, following traditional boom patterns. The population of the area began to slowly decrease as well. The period ended when the First World War drew the miners' attention and yields dropped significantly.

The "Decline" identifies the period following the First World War. During this period, labor intensive technology such as ground sluicing produced small yields with little cost. A few miners brought hydraulic technology into the mining district, however water shortages limited its use. The water shortage required additional water acquisition infrastucture for all types of mining. Most of the mining activity was concentrated near the Little Eldorado Creek discovery claims. Production declined to $3,000 in 1932 from $20,000 per year at the beginning of the period.

Improved transportation to the district marks the beginning of the "Recovery" period. Chisana City began receiving regular airplane service in 1932. At the same time the Alaska Road Commission built a road from Gulkana to the Nabesna River, thus lessening the packing distance for ground transportation. This era brought the increased use of more costly mining technology to the district including the increased use of hydraulic mining techniques. Larger landform changes resulted from this type of mining.

The Second World War marked the end of this era. Unlike elsewhere, mining operations at Chisana-Gold Hill were not stopped by the order limiting wartime gold production. The war did hamper transportation, however. As a result, most operators closed their mines for the duration of the war, ending the Recovery Era of the Chisana-Gold Hill Landscape.

During the period after the Second World War mining continued on a small scale. By the mid 1950's, most of the original mining claims had lapsed. Many claim areas were restaked by new operators employing mechanized equipment. However, mining activity remained limited and of relatively small scale. In 1985, three miners operated in the area with a total of five to seven employees (Final Environmental Impact Statement, 1989).

During this same post World War II period, hunting guides established headquarters in Chisana City and the local population began to grow (Tewkesbury, 1947). Circumstances changed after the United States Congress granted Alaska statehood in 1959. Local residents of Chisana City submitted homestead applications to the federal government and three were granted. A transformation occurred again in 1980 when the Federal government established the Wrangell-St. Elias National Park and Preserve. As a result, the privately owned properties of Chisana City then became completely surrounded with the newly established Wrangell-St. Elias National Preserve.

Figure 1. N. P. Nelson and Matilda Wales credited for the discovery of gold at Chisana-Gold Hill. Photo courtesy: Alaska State Library, Best collection.

III. METHODOLOGY AND SCOPE OF WORK

The National Park Service (NPS) began the Chisana-Gold Hill Cultural Landscape study in 1995 as a three-year undertaking. Tasks to be completed within the first year were as follows:
1) provide a detailed archeological survey of the district by completing a survey of the Chisana City area;
2) conduct historical research for the district and complete a National Register Nomination and an interpretive history of the area;
3) provide natural resource assessments of the area;
4) complete a Cultural Landscape Inventory;
5) digitize location information onto AutoCad; and,
6) locate a principal investigator for the production of the Cultural Landscape Report.

Tasks to be completed in year two were as follows:
1) produce a Cultural Landscape Report that incorporated number 2 and number 3 below;
2) conduct a round table meeting to develop management recommendations; and,
3) conduct condition assessments and prepare treatment recommendations for structures and features.

Tasks to be completed in year three, although contingent on funding availability, were as follows:
1) include information in a GIS database; and,
2) edit and print an interpretive booklet.

Researchers conducted historical investigations, site assessments, natural resource assessments, archeological surveys and a compilation of existing documentation during the first year. Researchers also completed an interpretive history, "A History of the Chisana Mining District, Alaska, 1890-1990," and "The Chisana-Gold Hill Cultural Landscape Inventory." These documents provided the first comprehensive assemblage of historical and cultural information for the area.

Researchers found existing documentation of the site in many sources. The Wrangell-St. Elias archeological files provided most of the existing site condition information. Both the staff at Wrangell-St. Elias and data from the Final Environmental Impact Statement (FEIS) provided natural resource information. This FEIS (1988) determined the cumulative impact of ongoing mining in specific areas of Wrangell St. Elias Park and Preserve. The published works of the United States Geological Survey (USGS) and Alaska's Territorial Department of Mines provided key information about the historical mining activities and geological information of the area. Personal and public collections of historical photos provided a great source of information of the Stampede, Boom and Recovery periods. Local newspapers supplied information concerning the mining activities. The *Dawson Daily News*, the *Whitehorse Weekly Star*, the *McCarthy Weekly News*, the *Chitina Leader* and the *Cordova Daily Alaskan* were some of these resources. Historical information from personal journals was available as well.

Comprehensive detail maps of the historic area were non-existant. A fire in the mid-1940's destroyed claim records for the Chisana-Gold Hill area. However, USGS and some individual claim survey maps supplied limited historic and detailed mapping of the area. The current USGS mapping of the area was of a 1:63,360 scale and does not lend itself to the details of the landscape. Aerial photographs provided more detailed information.

In 1984, NPS completed a Historic Structure Report and a National Register Nomination for the Chisana City town site. This nomination limited the period of significance from 1913-1934 and the location to the Chisana City site.

Archeological studies conducted on Gold Hill over a ten-year-period by the Anchorage Regional Office of the National Park Service and the Wrangell-St. Elias Park Cultural Resource Staffs provided accurate information. The reports revealed a growing understanding of this complex landscape. For example, researchers originally omitted tailings from archaeological surveys while later documentation incorporated them as cultural features. Overall, the documentation generally lacked a collective view of the mining systems.

Researchers completed field surveys of landscape features during the first year of this study. The remoteness of the site and limited funding restricted the time in the field. Because of these factors, for example, researchers did not complete field surveys of the Big Eldorado Creek drainage area. All landscape information for the analysis of the Big Eldorado Creek area was taken from secondary sources. A more thorough landscape survey of this area is advised.

Even with the considerable archeological documentation completed, the research would have benefited from additional field time. Researchers spent little time in the field actually documenting landscape characteristics primarily because of the constraining factors just mentioned. For a project of this scope and magnitude, more in-field time is necessary to address the many issues arising from a complex cultural site such as the Chisana-Gold Hill area.

During the second year of this study, researchers conducted round-table meetings with staff and with the general public. These meetings supplied information to develop management recommendations. Condition assessments and treatment recommendations were developed from recommendations of the Cultural Resource Staff from Wrangell-St. Elias and the Anchorage Support Office. Wrangell-St. Elias staff also completed archeological surveys of Chisana City during the second year of the project.

Funding complications delayed the start of the Cultural Landscape Report. The project was initiated late in the second year and its completion carried over into the third year of the project.

During the third year of the project, an additional meeting with staff was required. This meeting identified the significant resources and mining systems in the landscape. A detailed AutoCad mapping of the claim areas became available during this time and NPS staff mapped cultural artifacts onto this digital base map.

Character areas were established from the physical qualities of the site and from the type and concentration of the site's cultural resources. Management Zones were established in concert with the Cultural Resource Staff from Wrangell St. Elias and the Alaska Support Office in Anchorage. Researchers established treatment recommendations to improve and preserve the area's significant landscape resources.

IV. SUMMARY OF FINDINGS

The Chisana-Gold Hill Landscape is a historically significant mining landscape. Its significance qualifies it for nomination as a historic property according to National Register standards.

For the most part, this is a landscape that modern culture has not affected. This landscape has been left relatively intact in a historic condition. Mining operations have lessened steadily and increased earth moving technologies have not yet destroyed much of the historic mining landscape.

It is a landscape of distinct historic layers. Layers of human activity from the historic periods of Chisana-Gold Hill made visible marks on this landscape. These visible accumulations from successive periods have produced a readable collage of time on this land.

For those who have been to the Chisana-Gold Hill landscape, few fail to recognize the depth of its history. Most, however, require help to understand its meaning. Some have asked that "someone to go with them to explain the history and what the pieces mean." This landscape presents a collage of historical information that is incredibly complicated by the landscape's size and complexity. Only those few who specialize in Alaska mining can easily understand this complex landscape.

The NPS goal for this landscape is to invite visitors from all walks of life to this landscape. The NPS wants these visitors to understand this site because it is accepted that visitors who understand and respect the resource are not apt to vandalize or pilfer the landscape.

Therefore, the thrust of this document is to evaluate the landscape from the perspective of the visitor. To do so, this analysis looks at characteristic features within this landscape, such as character-defining features which identify landscape qualities. However, with the complexity of the site, even these descriptions of character-defining features are massive. Most of the character-defining features have significance within the landscape. Most of the character-defining features contribute to the overall integrity of the landscape. The features that contribute most to this landscape, however, are those that provide a simple, clear, understanding of this historic mining landscape. The final evaluation, therefore, must be to select and preserve character-defining features that present the "sense" of this historic place clearly and simply to the visiting public.

V. DEFINITIONS

The key terms used throughout this report are defined below.

Boundaries: A physical landscape characteristic that identifies the divisions of land ownership and land use (McClelland et. al., 1987). Examples are claim markers and fence lines.

Buildings: A physical landscape characteristic composed of structures that shelter human activity. Examples include residences, school, churches, outbuildings, barns, stores, community halls and train depots (McClelland et. al., 1987).

Characteristic Landscape Process: A series of changes that have been instrumental in shaping the land. The National Register of Historic Places recognizes land uses and activities, patterns of spatial organization, response to the natural environment and cultural traditions as characteristic landscape processes that might be found in Rural Historic Landscapes.

Chisana District: The term commonly used in historic references such as Cairnes, Capps and Wayland to describe the Chisana-Gold Hill Landscape area.

Chisana Historic Mining Landscape: The Chisana-Gold Hill Landscape has been nominated to the National Register of Historic Places. This term refers to the nomination, specifically. Both the nomination and the Cultural Landscape Report refer to the same land area.

Cultural Feature: The physical evidence of past uses, events and associations within the landscape. The smallest unit that contributes to the significance of a landscape and which can be managed as an individual element (Gilbert, 1995). Examples include paths, roads, buildings, structures, tree lines along walls and roads, drainage ditches and bodies of water.

Drainages: Creeks and their associated watershed areas.

Geology Related to Land Use: A physical landscape characteristic not identified by National Register criteria (McClelland et. al., 1987). However, *The Secretary of the Interior's Standards for the Treatment of Historic Properties: with Guidelines for the Treatment of Historic Landscapes* has identified geology as one of the natural systems of a landscape (Birnbaum, 1996). In the Chisana-Gold Hill Landscape, human response to the mineral locations and geologic formations determined mined land use areas (Birnbaum, 1992). Mining activity mainly found in the gold laden creeks of Gold Hill serves as an example showing land use patterns that are dependent on geology.

Historic Rural Landscape: "A geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways and natural features" (McClelland, et al., 1987). Examples include those landscapes associated with mining, fishing and agricultural activities.

Historic Vernacular Landscape: The landscape in which the cultural features reflect the customs and everyday lives of human development. "Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological and cultural character of those everyday lives" (Birnbaum, 1994). Examples include agricultural landscapes, placer mining landscapes and rural villages.

Landscape Characteristic: Tangible evidence of the activities and habits of the people who occupied, developed and shaped the lands to serve human needs. This evidence reflects the beliefs, attitudes, traditions and values of the population. Processes and physical components are both considered landscape characteristics. Examples include circulation patterns, topography changes, vegetation patterns, structures and small scale elements.

Land Uses and Activities: Landscape characteristic process that describes the human activities which have left an imprint on the landscape; the major process of human force that shapes and organizes rural communities (McClelland et. al., 1987). Examples include farming, mining, recreation, social events or industry.

Over Viewshed: A large encompassing area of the landscape that can be seen from any given point. An example is the view of the city of Chicago from the upper levels of the Sears Tower Building.

Patterns of Spatial Organization: A landscape characteristic process that characterizes the settlement of the inhabitants. The patterns of human settlement are defined by the grouping of the physical elements (McClelland et. al., 1987). Examples that reflect these patterns are road systems, trails, distance between buildings, orientation of structures to roadways, or proximity to water sources.

Placer Mining: "The extraction of heavy minerals from alluvial gravel by removing the detrital material with running water and trapping the values in riffles" (Noble and Spude, 1992).

Response to Natural Environment: A landscape characteristic process that defines the manner in which human behavior has been altered to conform to environmental systems (McClelland et. al., 1987). Two examples are the way mineral deposits determine the suitability for mining activities and the way climate influences the siting of buildings.

Small Scale Elements: A physical landscape characteristic identifying features that "mark the location of historic activities, but lack significance or integrity as archeological sites" (McClelland et. al., 1987). Some examples include "... abandoned machinery, or fence posts, that mark the location of historic activities, but lack significance or integrity as archeological sites" (Ibid.).

Structures: A physical landscape characteristic composed of structures designed for functions other than human shelter (McClelland et. al., 1987). Examples include dams, doghouses, sheds, flumes and ditches.

Tailings: The refuse materials remaining after the alluvial gravels have been washed.

Topography: A physical landscape characteristic that identifies the landform or the shape of the land. Landform can occur naturally or can be the result of human manipulation (Birnbaum, 1992). Examples of naturally occurring topography are hills, valleys and mountains. Examples of man-made topography include rock piles, exploration pits, wells and earthen dams.

Vegetation Related to Land Use: A physical landscape characteristic named and defined by the National Register *Guidelines for Evaluating and Documenting Rural Historic Landscapes.* Plant materials demonstrate the patterns of human activity and "bear a direct relationship to long-established patterns of land use" (McClelland et. al., 1987). Two examples include the patterns shown in the accidental growth of trees and shrubs along fence lines, or the re-growth of successional vegetation in disturbed soils of a mining district.

Views: A physical landscape characteristic that describes the visual relationships in a landscape. The visual relationships between objects and spaces define the spatial organization of a space (Birnbaum, 1992). For example, the panoramic view of a farm's fence lines delineates the space of the field.

PART I: SITE HISTORY

I. LANDSCAPE HISTORY

Chapter Contents

A "landscape history" describes the historic events and influences that caused the landscape to change and evolve. The following is an account of the landscape history of Chisana-Gold Hill. To explore the history of events and people of this area please refer to the comprehensive historical summary, A History of the Chisana Mining District, Alaska, 1890-1990, by Geoffrey Bleakley (1996). The landscape history that follows is derived primarily from Bleakley's historical review. However, the purpose of this report is to outline the historical and cultural contributions that led to the evolution the Chisana-Gold Hill Landscape, rather than to chronicle the history of its people.

Overall landscape maps of each of the periods are included in the following chapter. More detailed tables can be found in Appendix II.

1. Introduction
2. Exploration Period (1910-1913)
3. Stampede Period (1913-1915)
   NOTE: Stampeders entered the Chisana-Gold Hill Landscape via routes from many directions. The routes form the basis of an interesting story, but are not discussed here in depth because they are not a part of the landscape as defined by its boundaries. Instead, these routes are discussed in a broad sense to provide an understanding of the isolated location and the tenacity of the stampeders that traveled to and from this area.
4. Boom Period (1915-1919)
5. Decline Period (1920-1932)
6. Recovery Period (1933-1945)
7. The Aftermath (1945-Present)

I. LANDSCAPE HISTORY

1. Introduction

The American dream of "striking it rich" in the gold fields brought development to the California coast frontier in the mid-1800's. Some found gold, while others found a new land.

Soon after, dreamers sought to strike it rich in the Alaska gold fields and in the process developed the Alaskan frontier. Stampedes of men and women searching for gold, proved an integral part of the growth of the Alaskan frontier.

In Alaska, the dream was born with the 1880 gold discovery at Juneau in the Silverbow Basin. Prospectors soon climbed the great Coast Mountains and explored the upper reaches of the Yukon River. Until then, few had reason to cross this harsh natural barrier. Strikes along the Yukon at Alaska's Fortymile River (1886) and at Birch Creek near the community of Circle (1893) furthered frontier development. While many of the prospectors were Alaskan citizens, the stampedes brought dreamers from far outside the state's boundaries.

The great Klondike discovery of 1896 also was instrumental in the development of the Alaskan frontier. Other stampedes followed...Nome in 1899 and 1900; Fairbanks in 1903; and, Iditarod in 1909. Each stampede took the western world into the new frontier lands of Alaska. These outsiders stayed and developed the Alaskan territory.

The last important gold rush came in 1913 when gold was discovered along the Wrangell Mountain range at the remote headwaters of the Chisana River. Some sources estimated that eight thousand people joined this rush (Kirchhoff, 1989). This is the area now known as the Chisana-Gold Hill Landscape (Wharton, 1972; Hunt, 1974).

2. Exploration Period (1910-1913)

Prior to the invasion by miners this remote landscape was shared by three native Athabaskan groups: the Ahtna; the southern Tutchone; and, the Upper Tanana. The Tanana people established a permanent village about six miles northwest of the future site of Chisana City (John, 1986; Justin, 1981; McClellan, 1981; McKennan, 1981; Reckord, 1983). This native group provided for its families by hunting and trapping on this land. These people made little impact and the land retained its natural evolution.

Geologists developed the region's earliest maps while exploring and surveying the land for mineral information. Schrader, Moffit, Knopf and Capps completed geologic and topographic maps of the area which were later published in their report entitled *Mineral Resources of the Nabesna-White River District* for the United States Geological Survey (USGS) in 1910 (see map on page 15). Although the team mapped the Chisana-Gold Hill Landscape area, much of the surrounding areas remained virtually unexplored. This survey crew located several small quartz veins and expressed the possible evidence of placer gold in the Chisana district area (Moffit, et al., 1910).

Before the discovery of gold on Gold Hill, numerous prospectors had examined the area finding traces of quartz, copper nuggets and even traces of the elusive gold. In 1912, William E. "Billy" James, Nels P. Nelson and Fred W. Best began a detailed examination of the upper White River basin which lies directly east of the Chisana district. Although many prospectors aided the discovery of gold by leading others to the area, these three probably made the most important contribution (Bleakley, 1996).

The presence of these explorers contributed to the development of the landscape as well. These gold seekers developed trails on the land. For example, late in the summer of 1912, Best, Nelson and James established a base camp near the mouth of Beaver Creek and began investigating the adjoining region. Although their primary route ascended that drainage only as far as Flat Creek, they established hunting and trapping trails in all directions. One reached Chathenda Creek, about ten miles farther west (Best, 1912). This trail was not within the Chisana-Gold Hill Landscape boundaries, but it describes the sequence of events that developed trails within this type of landscape. Some trails continued to be used by those who followed, while other trails were abandoned to natural recovery systems.

According to one story, the three prospectors developed an acquaintance with an Upper Tanana Indian known to them as "Indian Joe" who showed James a quartz prospect situated on the Chathenda's middle reaches. James recognized the lode possibilities but was more interested in the area for its placer potential. Since a harsh winter was closing in quickly, James conducted some preliminary panning and vowed to return to the area the following year for further examination (Capps, 1916; Cairnes, 1915).

James and Nelson returned in the spring of 1913 accompanied by James's long-time companion, Matilda Wales. James examined the Chathenda Creek lode while Nelson tried his luck on a nearby tributary. About a hundred yards upstream Nelson conducted an exploratory procedure which he probably had completed hundreds of times before.

He first removed the overburden of silty soils and gravels and revealed the underlying gravels. He tested these underlying creek gravels in his pan by washing them with creek water. This time the material that settled in the bottom of the pan yielded a dollar's worth of gold. He staked a discovery claim and christened the stream "Bonanza Creek" (Kirchhoff, 1989). Seeing their friend's success, James and Wales explored further up the creek and made an even bigger discovery—their pan yielded five to ten dollars of gold. They staked a discovery claim and named the tributary, "Little Eldorado" (*Dawson Daily News*, October 9, 1913).

These discoveries and renaming of the creeks represented the entrance of the mining culture to the area. Brooks described this renaming by the new culture with disgust;

> In accordance with the prevailing practice, the prospectors in this district promptly applied new names to every watercourse on which claims were staked, giving no heed to the fact that ten years before this influx of miners an official and accurate map of the district had been published on which every effort had been made to apply the correct Indian nomenclature to these streams. These authorized names were entirely ignored by the prospectors; Chathenda Creek became Johnson Creek, Chavolda Creek became Wilson Creek and a new crop of Bonanza, Eldorado, Glacier, Coarse Gold and Goldbottom creeks were started—names that have been used scores of times and that appear in every placer district of Alaska (1914). (See map on page 15.)

The mining culture claimed this hunting and trapping landscape by replacing existing Native American creek names with those names familiar to this newly arrived culture.

3. Stampede Period (1913-1914)

Area newspapers and word-of-mouth quickly spread news of the strike. After making his strike, Nelson returned to Dawson City with his long time acquaintance Andrew M. "Andy" Taylor who also was prospecting in the area. They informed the Dawson residents about the Chisana strike and enthusiastic locals responded to the news.

These Dawson stampeders staked most of the property on Bonanza, Big Eldorado and Little Eldorado Creeks. An Alaskan miner, Carl F. Whitham, was prospecting near the mouth of Bonanza Creek at the time and obtained one of the richer claims. Whitham staked the second claim on Little Eldorado Creek (*Dawson Daily News*, June 6, 1913).

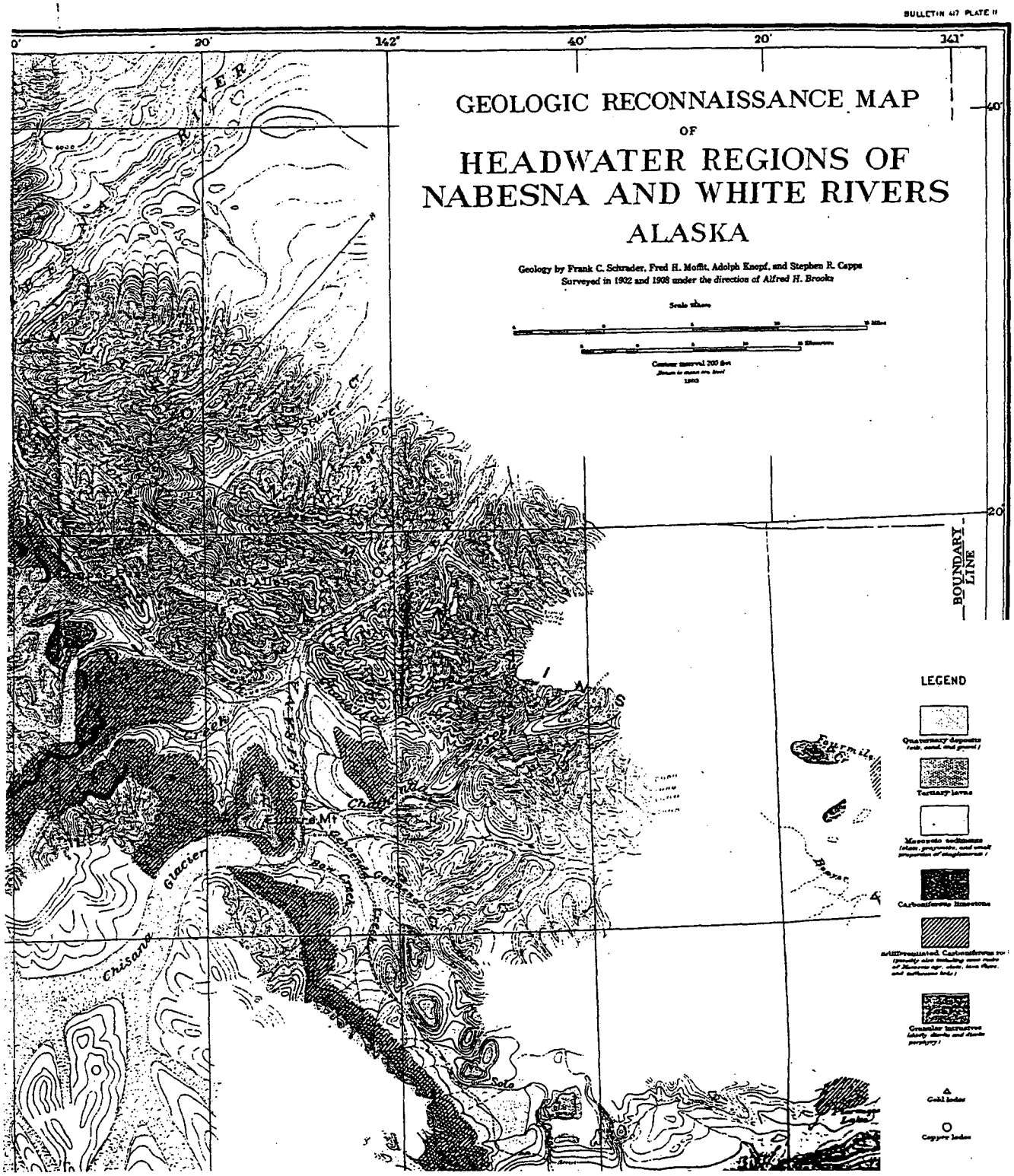
Billy James located a discovery claim on the upper creek of Big Eldorado Creek, while W. D. "Dud" McKinney and Anthony McGettigan had staked claims on much of the rest of this creek (*Dawson Daily News*, September 15, 1913). The three leased these claims to others for the season.

After the first group of stampeders responded, a successful prospector returned to Dawson City mid-July and spread word of the strike further. He provided the local newspaper with a current description of the strike (*Fairbanks Times*, July 20, 1913). His account electrified the inhabitants of Alaska, the Yukon and eventually much of the Pacific Northwest. Regional cities promoted the rush, eager to enhance business. Wild exaggerations proclaimed the Chisana strike as "the richest since the Klondike" (*Cordova Daily Alaskan*, July 18, 1913).

Ships sailed with gold seekers from Seattle, Vancouver and Victoria (*Seattle Times*, August 7, 1913; *Vancouver Sun*, August 9, 1913). Fairbanks merchants promoted their city as the best supply center and recommended the Tanana River as the "all-American" route. They competed against the Yukon-White River route that took prospectors through Canadian Yukon communities.

The strike area was remote from all the well-established systems of Alaskan transportation in 1913. The transportation of supplies was tedious and expensive because all the available routes offered difficulties. Actually, seven routes were available to stampeders who approached Gold Hill from every possible direction. (See figure 9, page 55 of trails entering the mining district.) None of the routes were easy. The shortest route took the railroad to McCarthy and followed with seventy-five miles on foot—forty of these miles were glacial ice. Geologist S. R. Capps recommended "none should be attempted without proper equipment" (Brooks, 1914). Contrary to good advice, however, most stampeders were poorly equipped and many even lacked a clear concept of where they were headed. Consequently, some failed to arrive and of those who did, few remained for more that a few days (Cairnes, 1913; *Dawson Daily News*, August 14, 1913).

A Canadian geologist compared the rush to the Klondike in another way. D. D. Cairnes, reported that the news of the discovery soon reached the "outside," and a stampede commenced which was widely disproportionate to the nature and extent of the discoveries that had been made. He considered it the "greatest [rush] since the memorable early rush to the Klondike during 1897-98" (Cairnes, 1915).



Map 1. Exploration Period (1910-1913). Geologic Reconnaissance Map of the Headwater Regions of Nabesna and White Rivers, Alaska. Map: Frank C. Schrader, Fred H. Moffit, Adolph Knopf and Stephen R. Capps. Surveyed in 1902 and 1908 under the direction of Alfred H. Brooks.

An on-the-scene correspondent from *The Seattle Post-Intelligencer* estimated that eight thousand people joined this rush (Kirchhoff, 1989). Conservative government sources guessed that over two thousand prospectors participated. During this stampede period, the dreamers arrived, walked the trails, killed game, collected firewood, abandoned their un-needed mining shovels and started the long trail home.

By the middle of July, prospectors had selected virtually all the viable sites. Prospectors staked Chathenda (Johnson) Creek from the town of Chisana City to the head of the stream, and made numerous exploratory pits and cuts (Capps, 1915).

Ruben Lindblom and his party were typical stampeders. After traveling for two weeks over the Skolai trail, they arrived on July 31, 1913. In a downpour, they staked claims #4 and #5 Above Discovery on a tributary of Johnson Creek. The next day they remained in their camp that was located four to five miles from their claims, "too tired and footsore to go anywhere" (Lindblom, manuscript). Two days after arriving, they returned to McCarthy because they lacked provisions. They had not worked their claims nor had they recorded them (Lindblom, manuscript).

George Hazelet and his two sons also were late arrivals. They reached Bonanza Creek on July 30 and found about 175 prospectors and signs of frenzied activity. Stakes were everywhere, not just along the creek but also far up the hillsides (Hazelet diary, July 30-31, 1913). He and his sons eventually staked a "wildcat" claim on the outlying Chicken Creek, a tributary to Glacier Creek (Hazelet diary, August 12 and 14, 1913).

This horde of stampeders severely impacted the land. Trails became worn with use, corner stakes dotted the hillsides, and abandoned campsites were commonplace. The multitude of people affected the landscape in other ways as well. On the hill, where lumber was non-existent, stampeders denuded the landscape of willow and alder brush for camp fuel. Hungary travelers also depleted the ptarmigan population. This chicken-like bird provided a tasty and easily obtained meal to these under-equipped stampeders. Many killed the ptarmigan simply by throwing rocks at them. Most stampeders chose to return to civilization soon after arriving. They contributed to the clutter of Gold Hill by abandoning shovels, picks and saws on the hillside, leaving markers of their presence. (See Stampede Period map 2 on page 19.)

Corner stakes, posts, or rock piles marked claim boundary corners. The claimant would then record his claim at the nearest recording office. A vacated claim that was staked but not recorded could legitimately be re-staked. Recorded claims, however, were supposed to be exempt from seizure (Bleakley, 1996).

Communities grew up around the recording offices. The first recording office opened on July 22, 1913 in a tent at the mouth of Bonanza Creek. This was the first community to emerge in the Chisana-Gold Hill Landscape.

Another community was less successful. George Hazelet, a Cordova business speculator, selected two 160 acre parcels as a location for a townsite. This community, named "Woodrow," became the site of the district's second recording office, managed by acting U.S. commissioner J. J. Finnegan (*Cordova Daily Alaskan*, Sept. 26, 1913). Prospectors objected to this location—it was considered an "out of the way" eight mile walk (*Dawson Daily News*, October 11, 1913).

On September 9, 1913, seventy-five miners met near the mouth of Chathenda Creek and established the Chathenda Mining District. They selected a new townsite, christened "Johnson City," which is the site of the present day Chisana City. This newly formed organization removed J. J. Finnegan as U.S. commissioner and installed George E. "Ned" Hill as commissioner (*Cordova Daily Alaskan*, September 20, 1913).

The distance of this recording office from the placer mining area was actually longer than the distance to Woodrow. Evidently, citizens favored the Chisana City route for other reasons and seldom used the Woodrow route.

Communities developed on this land that had been wilderness only three years prior. Chisana City, Bonanza City and Woodrow existed as a direct result of the mining activities on Gold Hill. These communities provided the diversified activities necessary to support the mining operations.

Sawmills also were located at all three community locations. Only the lower valley slopes of the region grew lumber. In the placer camps, wood for fuel and lumber for sluice boxes and other mining purposes required transport from the sawmills, usually a distance of several miles. Some willow and alder brush grew in some of the upland areas. While it lasted, prospectors used the brush for camp fuel (Brooks, 1914). Sawmill operators removed lumber from lowland forest areas. Although Bonanza City became the closest timbered area to the mining operations, stands there were not as rich as those located at Chisana City and Woodrow. The trees at Bonanza City were quickly cleared, leaving another marker of the mining culture.

The typical prospector established his camp

quickly and usually very close to the mining operation. Most often a tent served as shelter until something more substantial could be built. Since wood was expensive and limited, miners used it for sluice boxes and flumes before building a wood shelter (see figure 1, James and Wales in front of their tent).

Fred Best identified the sight of Billy James and Matilda Wales in front of their tent as a worthy subject to photograph. Besides being a miner and prospector, Fred Best kept a daily diary and regularly photographed the activities of the Chisana-Gold Hill mining era (Best Collection).

Placer mining operations had begun in the creek bottoms on Gold Hill. The earliest being Billy James and N. P. Nelson who began sluicing Little Eldorado No. 1 on July 4, 1913. Assisted by Andy Taylor and former Dawson City bartender Tommy Doyle, the pair recovered nearly 200 ounces in just two days. By August 2 they had already garnered nine thousand dollars, or an average of about three hundred dollars per day (*Dawson Daily News*, July 28, 1913).

The mining operation was simple. Operators used the ground sluicing operation to remove the overburden by directing creek waters to areas needing excavation. Sluicing, the second operation, consisted of diverting water from the creek and forcing it through sluice boxes. Operators shoveled gravels into the sluice boxes set at a slight grade (six to eight inches per box). Riffles in the bottoms of sluice boxes collected the heavy gold particles. James and Wales worked their Discovery Claim on Little Eldorado Creek during the summer of 1913. These Little Eldorado Creek gravels were only four feet in depth and the pay streak was one-hundred-feet wide (Brooks, 1914).

Mining operations during the summer of 1913 distinctly affected the topography of the landscape. Miners manipulated the creeks by changing the rate and at times the direction of flow. Overburden depths varied, but ground sluicing techniques washed these rich silty soils downstream. Sluicing operations washed gravels found next to the bedrock or base rock of the stream and removed the remaining silt. The same operations deposited rows of the cleaned gravels in the stream bed. Creeks also were lowered to the bedrock levels; the bedrock depths on Little Eldorado Creek averaged four to six feet below the former soil levels.

The Hazelet family, which had staked claims on outlying Chicken Creek, immediately started to work on Chicken No. 4 in 1913. By August 10, the family had completed a forty-five-feet-long ditch. Two days later they completed a similar exploratory trench on Chicken No. 3 (Hazelet diary, August 12 and 14, 1913). If any signs of gold had been found, further development would have been taken. The prospectors found no gold but marked the landscape with exploratory ditches.

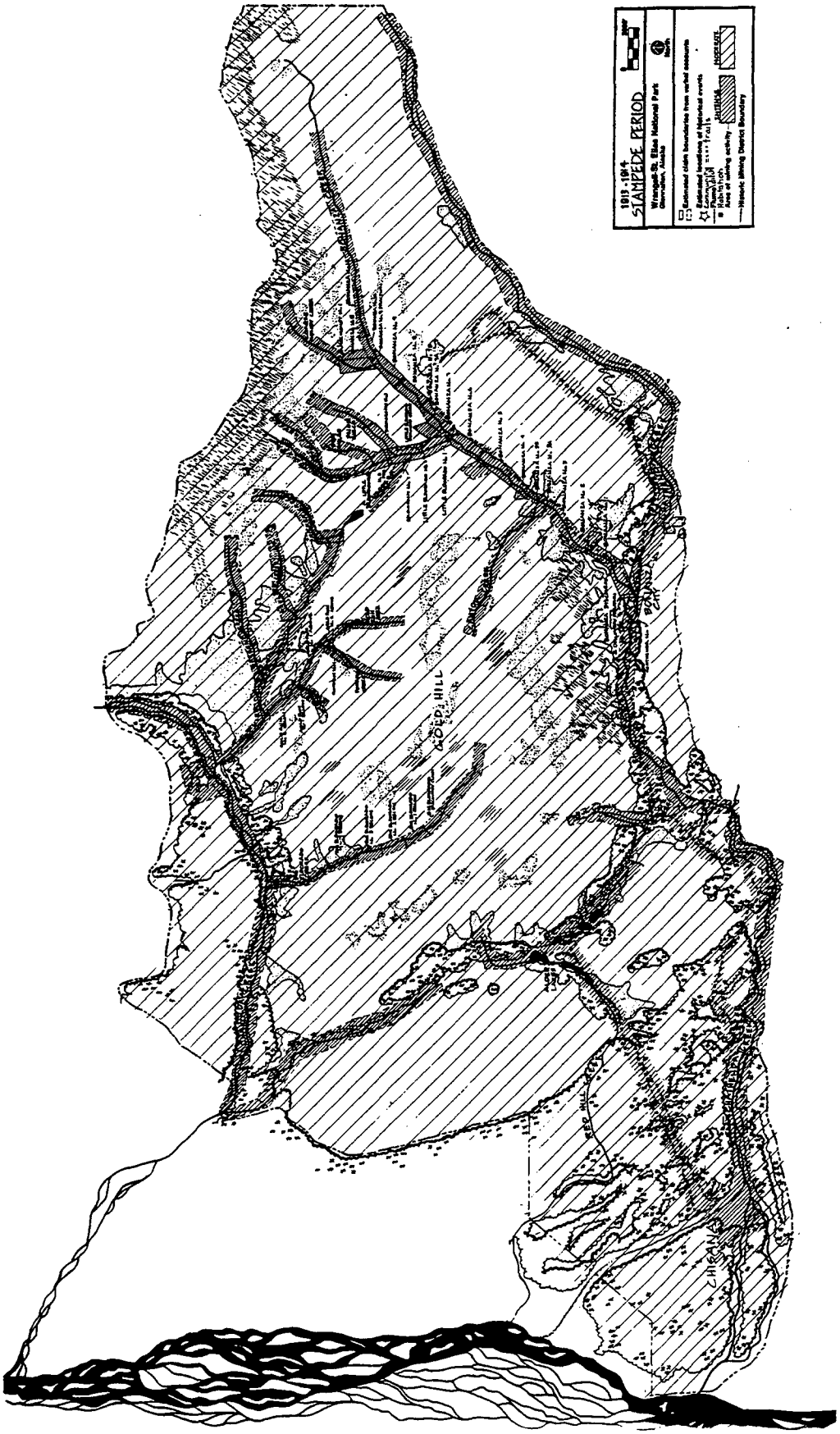
After Canadian geologist D. D. Cairnes visited the district early in August 1913, he published warnings, "cautioning prospectors and others against going into Chisana City during the autumn or winter unless properly outfitted and otherwise fully prepared to remain in the district until spring" (Cairnes, 1915). Cairnes published other notes and photographs from his trip in 1915. Brook, et. al. used his notes in the 1914 United States Geological Survey (USGS) Report.

The district's first cold weather provoked an exodus of stampeders, with some bartering their entire outfits to finance their transportation home (*Dawson Daily News*, October 23, 1913; Kirchhoff, 1993). A few operators continued to work throughout the winter, thawing the frozen ground as they slowly progressed toward bedrock. Operators used steam to melt frozen gravels. A fire stoked in boilers produced steam that moved through hoses to steam points stuck into frozen gravels. Few operators sluiced in winter, and instead piled gravels to sluice in the spring when flowing water was again available.

Fred Best and various lessees mined on Bonanza Nos. 3, 3A, 7, 7A, 8, 8A and 18 (Best, October 5, 1913, through February 28, 1914). James E. Hagen and his partners prospected Big Eldorado Creek, reportedly recovering some gravel that yielded thirty cents to the pan (*Fairbanks Times*, February 6, 1914).

Charles Bush and three colleagues even worked Gold Run Creek that winter, sinking drift holes at the mouth of Discovery Pup Creek (*Dawson Daily News*, May 20, 1914). The drift mining operation also used the boiler connected to a pressurized hose that terminated in a steam point drill. Operators dug a vertical shaft by loosening the frozen ground with the steam drill. Ore and overburden were lifted out of the hole with the aid of a windlass, positioned over the hole. At bedrock the mine turned in a horizontal direction and followed the pay streak along the bedrock.

Although mining activities dwindled with the cold weather, Johnson City's (Chisana City's) growth was swift. By the middle of October 1913, the town boasted two streets and 200 cabins (*Fairbanks Times*, October 13 and 17, 1913). Before the year was out, newspapers reported 400 cabins in the city (*Dawson Daily News*, December 10 and 13, 1913). Reports found further developments in February of 1914; structures were more elaborate and larger with some having glass windows. One proprietor even



Map 2. Stampede Period (1913-1914). Gold Hill-Chisana Historic Mining District. Map: the author.

erected a two-story building. Chisana City had become a major Alaskan community, described by one newspaper as the "largest log cabin town in the world" (*Cordova Daily Alaskan*, February 24, 1914). By March, reports were of the camp assuming the ways of a town, including delicacies such as magazines, bath tubs, brooms and tea kettles (*Seattle Post-Intelligencer*, March 20, 1914).

Fewer records exist for Bonanza City, but 1914 historic photos indicate many tent structures (Stanley Collection, 1914). Fred Best wrote that Bonanza City had a few cabins and several stores, including a hotel and a restaurant (Best, March 15, 1914).

Again, the Stampede Period made significant changes to the landscape. In Chisana City, miners cleared the land of trees making room and providing lumber for the construction of cabins. On the hill, stampeders imprinted trails, marked the landscape with shovels and campsites and made their presence known by the absence of ptarmigan and brush. Mining in Gold Hill's creeks began the soil disturbance that would continue for the next half century.

4. Boom Period (1914-1919)

The biggest mining operation in the district was the result of a deal struck late in 1913 by a financial consortium of pioneer Alaskans, including John J. Price, Frank Manley and E. J. Ives. This group offered the widely reported sum of five hundred thousand dollars to lease the mining claims belonging to the partnership of Billy James, N. P. Nelson, Matilda Wales and Thomas Johnson. These four accepted the syndicate's bid and transferred thirteen claims, including the richest one on Little Eldorado Creek (*Cordova Daily Alaskan*, December 11, 1913).

The syndicate assigned their newly acquired mineral claims to Fletcher Hamshaw who soon moved eight steam boilers and a portable sawmill into the district. Crews set up the sawmill and began cutting the lumber necessary for large-scale sluicing operations (*Dawson Daily News*, June 13,1914; *Juneau Dispatch*, July 14, 1914).

Hamshaw situated his main camp on the south side of Bonanza Creek opposite the mouth of Little Eldorado Creek. Nearly a community of its own, it consisted of about sixteen tents, including an office, a mess hall, a commissary and sleeping quarters. While somewhat isolated, both a trail and a telephone line linked the camp with Hamshaw's warehouse in Bonanza City (Capps, 1915).

Hamshaw's principal operations were claims Nos. 4 and 5 on Bonanza Creek and No. 1 on Little Eldorado Creek. The number of men employed varied during the season, ranging from thirty men to over one hundred. The general mining practice followed was to ground sluice off the upper portion of the creek gravels, leaving a foot or two above bedrock to be shoveled into the sluice boxes. Whenever Hamshaw employed a large gang of shovelers, a horse team and scraper cleared away the tailings from the lower end of the sluice line (Capps, 1915).

Hamshaw's operation mined an average thickness of only a little more than six feet, including the removed portion of the bedrock. The actual average thickness of the stream gravels was between four and five feet (Capps, 1915). His crews worked the stream gravels on Little Eldorado Creek claim No. 1 extensively during the summers of 1913 and 1914. Late in the fall of 1914 they located rich ground on the left bench of Little Eldorado No. 1 and on the north valley wall of claim No. 5 on Bonanza Creek (Capps, 1915).

The size of Hamshaw's operation meant that he could cover more ground in a shorter time. His ground sluicing and shoveling-in operations changed the land in much the same as smaller operations, but on a larger scale. A ground sluicing operation washed silty overburden downstream and then operators ran gravels found near the bedrock through the sluice boxes. These operations incorporated the use of a horse team and scraper to clear away the windrows of rock tailings typically found behind these sluicing operations.

Conditions on other claims required operations with alternative methods. Operators mining in the lower Bonanza Creek canyon worked with labor intensive techniques. The narrow canyon floor of the lower Bonanza Creek fractions gave a width of bedrock of only about twelve feet even if worked from rim to rim. Large boulders were abundant and the quantity of gravel that could be shoveled into sluice boxes was small. One operator confined his work to cleaning out the crevices of the agglomeratic bedrock with pick and shovel and washing out the small accumulations of stream gravels (Capps, 1915). This type of mining operation made little change in the appearance of the landscape.

No timber was found near the placer mines, and wood for fuel and lumber had to be brought from lower Chathenda Creek or from Chavolda Creek, a distance of several miles. Two sawmills at Chisana City and one at Bonanza City were in operation in 1914, at which spruce lumber could be obtained. The price charged at Bonanza City was $150 a thousand feet, and at Chisana City from $125 to $150 a thousand feet (Brooks, et. al., 1915). This

high value of lumber resulted in frugal usage of wood on Gold Hill.

On June 12, 1914, seven men began work on Bonanza No. 2. No prior work had been done on this ground. The workable width of the canyon floor averaged about thirty feet. Operators did not use a flume to keep the creek out of the way of mining operations, instead they diverted the creek to the one side of the flat and then to the other. Canvas hoses took water to the sluice boxes. By August 1, 1914, the crew completed about five hundred linear feet or a little less than half the length of the claim (Capps, 1915).

A single party of ten men operated in the Bonanza Creek canyon on Claim No. 3. Mining operations began in the spring of 1914. These men carried out the normal practice of sluicing from the lower end of the claim, to keep tailings from being in the way of future mining. At the lower end of the claim, gravels proved to be fourteen-feet thick and too low in gold content to justify mining. Operators began mining at a point six-hundred feet below the upper line of the claim and progressed to the upper part of the claim where gravels averaged two to four feet in depth. Large boulders were abundant, some of which were too big to move. The narrow canyon walls left little room for maneuvering in the creek bottom. Consequently, operators used a flume which was three-hundred-feet long to divert water out of the creek and allow pick and shovel mining in the creek bottom (Capps, 1915). Workers stacked large rocks into piles at the edge of the work area. These handstacks remain as evidence of the mining technique and the rugged conditions within the mining area.

Six men worked No. 3A Fraction throughout the summer of 1914. This portion of the creek also was located in the canyon rocks with the workable ground having an average width of only twelve feet and a thickness of two-to-eight feet. These workers used a flume to carry the stream past the pick and shovel operation and employed twelve sluice boxes with pole riffles to wash the gravels. Miners used dump boxes to break up the sticky clay soils and thoroughly cleaned all boulders before discarding them (Capps, 1915).

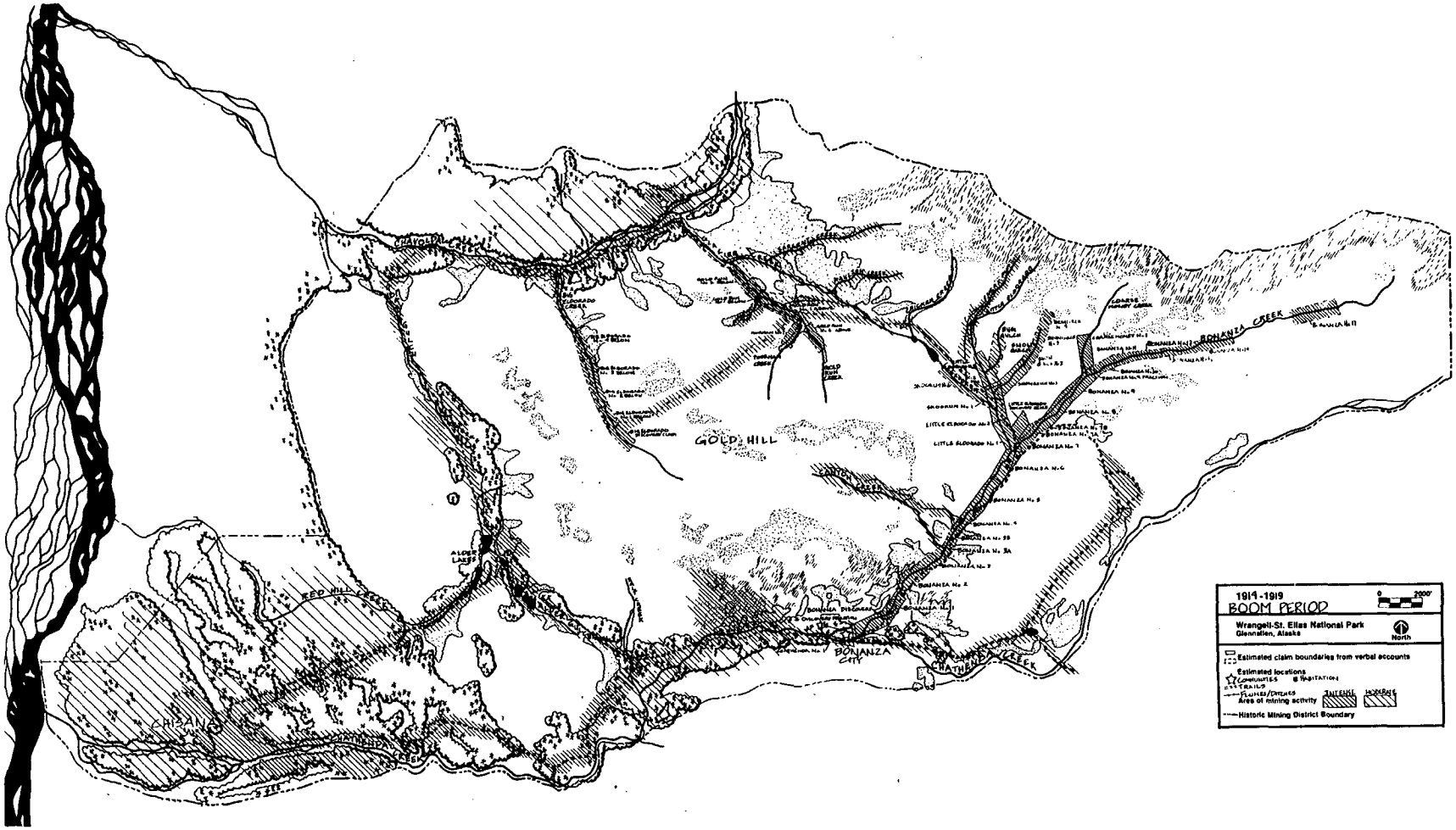
Joe P. McClellan recovered several thousands of dollars of gold mining fraction No. 3B during the summer of 1913. This portion of the creek also was located in the canyon rocks. McClellan found the gold less than two-feet deep in the rough bedrock. Using prospecting techniques he also discovered small deposits of bench gravels along the valley walls. Tents situated fifteen feet above the creek were found to be located on bench gravels and thought to contain a good pay streak (Capps, 1915; See figure 19 on page 64). The effect of the mining operations was no longer limited to the creek bottoms; the benches or the upward slopes of the creeks were being removed as well. In this case, bench mining affected the mining camps. Miners would relocate their camps to make way for the mining operation.

Fred Best worked claims No. 7 and 7A in 1914. This widened terrain did not require a flume to keep water out of operations, instead, operators turned the creek first to one side of the flat and then to the other. They used ten lengths of sluice boxes and a dump box to wash the gravels. However, the gentle grade of the creek in this area required that the boxes be lifted as much as ten feet on the upper end. Workers shoveled the gravels over their heads into the ten feet high sluice boxes. Best used a boomer dam to contain and later release creek waters for a ground sluicing operation. The operators used ground sluicing to remove the surface gravels before shoveling started. Claim No. 7A proved to have too little gold to justify mining—prospectors dug a test ditch one hundred feet long without encountering workable ground (Capps, 1915).

Lem Gates and Dud McKinney leased Bonanza No. 8 from Fred Best. They worked an area of the creek gravels about four hundred feet long with an average width of twelve feet. The gravels averaged three feet in thickness above bedrock. They found gold to be very unevenly distributed on this claim (Capps, 1915).

Henry Dubois made little more than wages working Bonanza Creek claim No. 9 (*Dawson Daily News*, July 13, 1914) while two parties mined on Bonanza Creek claim No. 10. A lessee explored the lower half and Carl Whitham worked the upper. Numerous dikes cut through the stream banks in this area. Although the lessee completed little mining on the lower half of the claim, they did find that the gold was mostly on the surface of the bed rock with four feet of surface gravels (Capps, 1915). Whitham used a horse scraper to remove the surface gravels on the upper part of the claim (Capps, 1915). Unlike ground sluicing, the horse scraper operation stockpiled the surface materials to prevent their washing downstream.

Early in the summer of 1914, two miners named McKay and Clinton prospected the lower end of claim No. 11, but found no productive ground. Dud McKinney and Lem Gates took over operations late in July 1914. They had better luck in late summer when they found large gold nuggets worth as much as sixty four dollars. Operations cut into gravels four to five feet deep (Capps, 1915).



Map 3. Boom Period (1914-1919). Gold Hill-Chisana Historic Mining District. Map: the author.

Map 3. Boom Period (1914-1919). Gold Hill-Chisana Historic Mining District. Map: the author.

Three men leased the lower portion of claim No. 12 in 1914 and used wheelbarrows to remove the overburden. Another three worked the property's upper half, where the gently sloping creek banks allowed them to ground sluice the gravels from a cut, eighteen-feet wide and eighty-five-feet long. Water flow at this place was just about sufficient to afford a sluice head (Capps, 1915).

No one was mining along upper Bonanza Creek in late July 1914, although claims Nos. 14 to 18 had all been prospected. At claim No. 15 several hundred feet of bedrock drains had been dug. On Bonanza Creek claim No. 18 there was a shaft said to be eighty-five-feet deep, with a twenty-five-feet drift from the bottom (Capps, 1915). Because gold was never found on the upper Bonanza Creek claims, these pits, ditches and shafts comprise the extent of landscape changes in this area.

Carl Whitham spent the entire summer of 1914 working Little Eldorado No. 2. Steep bluffs bordered the wide stream bottom. Wider than the claim below, the workable width varied from seventy-five to one-hundred-fifty feet with gravels that averaged three feet in depth. Capps considered the bedrock surface below the stream gravels to be "fairly flat in the cross section from one bluff to the other" (Capps, 1915). The bed rock of the pyroclastic series was easy to remove. Whitman's workers found the gold in this unique bed rock, rather than in the overlying stream gravels. They brought water under pressure through a canvas hose to seventeen lengths of sluice boxes. A nozzle was set to keep the tailings from piling up at the end of the sluice line (Capps, 1915).

The topography of Little Eldorado Creek bottom became flat and wide as the result of mining operations both in the creek bottom and on the benches. The depth of Little Eldorado Creek's overburden probably varied before mining. Mining operations lowered the creek bottom to bedrock making the creek bottom as flat as the bedrock while bench mining widened it further.

Waggoner and Johnson operated Little Eldorado No. 3 in 1914. During the season they worked a cut about fifty-feet wide with a stream gravel depth of three feet. These operators recovered a limited amount of gold from a layer of false bedrock under which two feet of gravels lay on the true bed rock (Capps, 1915).

During 1914, Charles Range, George Stone and four associates leased Skookum Creek No. 1 from owner Bud Sargent. Beginning at its mouth, which lies on Little Eldorado No. 2, they worked their way upstream until, by the end of July 1914, they had excavated 224 linear feet of the creek bottom. They lacked sufficient water to wash their gravels, so Range and Stone constructed a ditch to the head of Little Eldorado Creek. Even with the ditch, they still failed to get enough water. As a result, they stored water and sluiced intermittently. At the head of the cut the pay streak widened to about twice the average width below and on one side of the creek it was covered by fourteen feet of overburden. Operators thawed the stream wash and the frozen bedrock before they shoveled into the boxes. Even on August 1 (1914), six feet of the overburden was nearly pure ice. During this Stampede Period, no one prospected the area above Skookum Creek because of the broad marshy tract located there (Capps, 1915).

The removal of fourteen feet of overburden changed Skookum creek from a gently sloped creek to the "gully" looking creek that remains today. Operators hand stacked rock at the edges of their newly built creek bank.

Ditches and flumes were used on Skookum Creek and elsewhere in the district to acquire additional water for mining operations. The ditch/flume line to the head of Little Eldorado Creek from Skookum Creek, for example, was probably one half mile long and two-feet wide. The channel cut across the hillside that lies between the two creeks, while maintaining a grade that utilized gravity for water flow.

Several prospectors, including Whitehorse resident J. E. McGuire, examined Snow Gulch, another tributary of Little Eldorado Creek. Although they each found workable gravel in both the stream bed and on the benches, they had to delay their work because until mining stopped on Little Eldorado No. 2, there was nowhere to dispose of the tailings (Capps, 1915; *Weekly Star*, September 12, 1913).

In the summer of 1914, six men with picks and shovels mined Gold Run Claim No. 2, located just above the Glacier Creek confluence. These men mined a strip of ground one-hundred-fifty-feet long and fifteen-feet wide in the deep, narrow valley (Capps, 1915).

Four men began work on Gold Run No. 1 Above Discovery late in July 1914. The exploration work from the previous winter drift mining shafts revealed that bedrock lay about fourteen feet below the surface. These men ground sluiced a pit five-hundred-feet long and forty-feet wide. They obtained water from a half-mile long supply ditch which reached from Gold Run Creek to the upper part of Discovery Pup Creek (Capps, 1915). The pit resulting from the removal of fourteen feet of overburden permanently changed the topography.

One man prospected Gold Run No. 2 Above Discovery during the summer. He prospected the

benches some ten-to-fifteen feet above the creek. The amount of gold found was insufficient to justify mining (Capps, 1915).

Four men mined Poorman Creek No. 1 during the summer of 1914. Poorman Creek flowed through a narrow, steep-sided gulch with intrusive dike rocks. Stream flow was normally too small to furnish a sluice head of water, so the men constructed two dams to store it. They wedged their dams against the intrusive rocks in order to resist the water force. The dams allowed intermittent sluicing of a section of the stream bed one-hundred-feet long and ten-to-fifteen-feet wide. However, they recovered insufficient gold to justify further mining (Capps, 1915).

Two lessees mined Big Eldorado No. 4 Below Upper Discovery during 1914. Here the creek flowed through a deep and narrow gorge cut into diorite. The lessees ground sluiced off four-to-six feet of stream gravels before shoveling a pit six-hundred-feet long and twelve-feet wide. The shovelers took up two-to-four feet of the diorite and washed it in the sluice boxes. The profits were only fair (Capps, 1915).

Ten men operated Big Eldorado No. 3 Below Upper Discovery. At this location Big Eldorado Creek flowed through a narrow gorge cut into diorite. The men mined about two-hundred-fifty-linear feet of the creek bed to an average width of thirty feet with the stream gravels averaging only two feet in thickness. The operators found the gold in the two-to-four feet of diorite bedrock (Capps, 1915).

Two men worked Big Eldorado No. 1 Below upper Discovery where the stream gravels averaged about seven feet in depth (Capps, 1915). Just above, two lessees prospected Big Eldorado Upper Discovery claim, part of the block held by Hamshaw. The prospects revealed ten feet of stream gravels, with a few small nuggets. The lessees found the ground frozen and requiring thawing before it could be sluiced. As a result, they sluiced little during the 1914 season (Capps, 1915).

Geologic reports found a heavy deposit of gravels on the floor of Dry Gulch valley, Alder Gulch valley and the broad pass connecting them. Several drift mining shafts in the valleys did not reach bedrock even though two were estimated to be sixty-feet deep. Another shaft at the mouth of Dry Gulch penetrated ninety-two-feet deep without reaching bedrock (Capps, 1915).

In 1914, prospectors inspected the main valley of Chavolda (Wilson) Creek with little success. Some tried their luck on the high bluffs across Chavolda from the mouth of Glacier Creek. A tunnel was driven sixty-five feet into the gravel bluff, but it yielded only fine colors (Capps, 1915).

Some miners staked lode claims on Chathenda Creek, about halfway between the mouth of Dry Gulch and Bonanza Creek. Prospectors dug two tunnels of ten-and-fifteen-feet long to test the site. Others staked lode claims on both sides of upper Dry Gulch. Other quartz lode claims were staked on Canyon Creek about three-fourths of a mile above its mouth, but no development work was done in 1914 (Capps, 1915).

In August 1914, heavy rains disrupted mining activity throughout the region, causing many operators to end their season early. On Bonanza Creek, floodwaters destroyed one of Hamshaw's dams and damaged flume sections and sluice boxes belonging to many other outfits. Best, for example, reported that "it looked like a hurricane struck No. 7, with flumes, sluice boxes, [and] lumber . . . scattered everywhere " (Best, August 16, 1914). No longer was this a landscape of mining operations with every piece of lumber having a purpose and a place. Nature scattered the pieces of the operations, creating conditions resembling those that can be seen today.

Professional photographer, Lewis V. Stanley, participated in the Boom Period by capturing diverse views of the landscape. This craftsman took photographs that reflect pertinent visual perspectives of this mining landscape. Stanley's photos featured scenes of mining operations, transportation modes and mining camps, as well as an overview of Bonanza City. While focusing on the subject, such as the mining operation, the Bonanza City Store, or pack train, Stanley's pictures carefully included their surroundings as well. The horizon revealed the context in which the events of each photo occurred. Stanley's photos also captured important emotional events of the period. He photographed the miner's Fourth of July celebration in 1914 and the floods that disrupted mining activity later that August (Stanley-Mason Collection).

Most of the two hundred who chose to winter in the district stayed in Chisana City (*Chitina Leader*, September 22, 1914). During the summer of 1915, the city contained at least eighteen businesses including lodging houses, saloons and stores (*Valdez Weekly Miner*, September 26, 1915; Spude, 1984; *Nome Daily News*, October 26, 1915)

As in previous years, most mining in 1915 occurred on Bonanza Creek. Fred Best and Don L. Greene reported a fair return from their operation on No. 3. Joe McClellan, Robert W. Wiley and a crew of five sluiced the upper end of No. 3 Fraction. Fletcher Hamshaw's twelve-man crew finished mining No. 4 and moved up to the lower end of No. 5. Max Altman

and a nine man crew made several cuts on the lower end of No. 6. Edward "Shorty" Briggen, a miner named Hocker and five employees mined No. 7. John Ludwig and his partner sluiced on No. 7 Fraction, which had been successfully worked by Andy Taylor the previous year. Jim Hagen and a man named Sedley mined No. 8. Robert M. Clark mined the lower end on No. 10 and James H. Murie worked eleven employees on upper No. 10 (*Alaska and Northwest Mining Journal* 7, September 1915; *Chitina Leader*, October 25, 1915).

James and a crew of seven constructed a one thousand-feet-long flume to transport water from Coarse Money Creek for hydraulic mining on Bonanza No. 9. Then he and Nelson began the process of extending the ditch, crossing from the right to the left limit of Bonanza No. 6 and continuing downstream all the way to Bonanza No. 4 (*Cordova Daily Times*, August 9, 1915).

Miners examined and worked the upper portion of Bonanza Creek during the 1915 season as well. Dud McKinney and crew mined the upper part of Bonanza No. 11 while two laymen, named Huntley and Moore, leased the lower part. Alfred T. Wright and a miner named Anderson, worked the upper end of No. 11 Fraction. George Bittner and a partner operated No. 12. James, Eagan and Ryan examined No. 13. John Nichols prospected Bonanza No. 17 for Chisana City store owner Sam Shucklin (*Cordova Daily Times*, August 10, 1915; *Chitina Leader*, August 17, 1915; *Alaska and Northwest Mining Journal* 7, September 1915).

During 1915, Little Eldorado Creek and its tributaries were mined just as intensively as Bonanza Creek. Two of Hamshaw's lay men, Johnson and a miner named McGovern, worked the upper left limit of Little Eldorado No. 1, while Carl Whitham and ten employees operated Little Eldorado No. 2. William "Billy" McLennan and six men mined Little Eldorado No. 3. Charles Range and George Stone worked Bud Sargent's claim at Skookum Creek No. 1. George Woodman and a partner named Deffinbaugh mined Skookum Creek No. 2. W. E. Nelson examined Nos. 3 and 4 on Snow Gulch (*Cordova Daily Times*, August 10, 1915; *Chitina Leader*, August 17, 1915; *Alaska and Northwest Mining Journal* 7, September 1915).

Other creeks of Gold Hill were worked in 1915. At least three miners worked parts of Big Eldorado Creek. Montgomery and Ketching sluiced No. 4 Below Upper Discovery while Richard Bell mined No. 3 Below. Eagan and company worked No. 1 on Coarse Money Creek. Louis McCallum, a miner named McNutt and George Tweedale sluiced Shamrock Creek. Aaron Nelson prospected Canyon Creek. E. J. "Jack" Costello examined Lucky Pup. Bastell, Lewis and Munsell mined No. 3 Below on Gold Run Creek. Dan Ryan sluiced Poorman Creek, while Wagner and Hill prospected Sargent Creek (*Alaska and Northwest Mining Journal* 7, September 1915).

Even after the year's activity, it was evident that Chisana was a declining district. Gold production was down from the year before. Most miners left that fall, with only about fifty choosing to winter in Chisana City (Martin, 1919; Brooks, 1916; *Cordova Daily Alaskan*, August 31, 1915). A few miners labored during the winter on two deep mines at Skookum Creek and Gold Run Creek (Brooks, 1918).

During the summer of 1916, the area's mining activities dwindled to only twelve mines. As in past years, most activity focused on Bonanza Creek. James and Nelson retrieved their claims from Hamshaw and attempted to increase their output by installing a hydraulic plant. However, a shortage of water during the summer hampered this operation as well as the sluicing by all miners in the district (Brooks, 1918).

Other active claims on Bonanza Creek were: Andy Taylor and Joe McClellan on No. 3; Fred Best and Don Greene on No. 7; Jim Murie and Jack Costello on No. 10; Al Wright and a miner named McNutt on No. 11; and Lewis V. Stanley prospected on the stream's upper reaches (*Chitina Leader*, October 3, 1916; Maloney, 1917).

Miners continued to remove gold from Little Eldorado Creek in 1916 as well. James and Nelson operated No. 1. Whitham mined both No. 2 and No. 2 Fraction, as well as an adjoining claim on Snow Gulch. McClellan and Charles Fogelberg worked a claim on Bug Gulch (*Chitina Leader*, October 3, 1916; Maloney, 1917; Waller, 1916). A tributary of Glacier Creek also received some attention, with Ned Hill and a man named Jensey operating a claim on Sargent Creek (Maloney, 1916).

The conditions during 1917 were very similar to the previous year, with both the population and mineral production continuing to decline. Eleven mines employed forty-four men. On Bonanza Creek Taylor and McClellan mined No. 2. McGettigan and Bob Hover worked No. 2 Bench. Best and Greene mined Nos. 3 and 7. A partnership composed of James, Wales, Nelson and Billy Johnson operated Nos. 4, 5, 6 and 9. McKinney worked No. 8. Ed McMullen and Nelson mined No. 10. Al Wright worked Nos. 11 and 11 Fraction (*Chitina Leader*, October 16, 1917; Maloney, 1918; *Dawson Daily News*, July 29, 1913).

Other claims on Gold Hill were also active in 1917. Billy James's syndicate operated Little Eldo-

rado No. 1. Whitham mined Little Eldorado No. 2. Bud Sargent and D. Percy Thornton worked Skookum Creek. J. E. McCabe, E. R. Behling and Blas Joseph "Joe" Davis operated Big Eldorado No. 3 Below. Shorty Briggen mined Big Eldorado No. 2 Below. James "Windy Jim" McDonald worked Gold Run No. 2. Virgil and Lee Catching mined Gold Run No. 3 (*Chitina Leader*, October 16, 1917).

The First World War curtailed mining throughout Alaska and Chisana's mining district was no exception. During 1918, James and Nelson divided their joint holdings, with Nelson acquiring Bonanza No. 4. Although seemingly happy with the deal, it meant added work for Nelson, who was forced to build a new camp on the claim (Nelson, 1918). Little activity continued on Gold Hill during the remainder of the war. This period of inactivity ended the Boom Period.

What remained, however, were the landscape changes that indicated the Boom Period. Mining operations dominated during the period altering the natural formation of the land's soils. Ground sluicing sent overburden down stream and brought the gravel and rock layers of the creek to the surface; completely changing the appearance of the creek. The communities continued to grow, requiring more lumber for construction as well as for sluice boxes, flumes and other mining operations. Trails between the mining area and the communities continued to progress. (See Boom Period map on page 23.)

5. Decline Period (1920-1932)

The era of mining decline in the Chisana-Gold Hill landscape began with the turn of the decade. Production, which had declined during the war, never returned to pre-war levels. In 1920, the Chisana-Gold Hill district only possessed eight mines employing eighteen men (Brooks, 1920). The number and character of Chisana City's residents had changed as well. Once populated almost exclusively by white prospectors, two-thirds of the 148 inhabitants were now Alaska Natives (Walker, 1920).

Six mines operated in 1921, employing a total of sixteen men. Most operations removed overburden by ground sluicing with automatic dams and then removed the underlying gravels using hand shoveling techniques. Pete Eikland and Jack Carroll purchased Bonanza No. 4 from N. P. Nelson and Hans Running and John Swanson leased Bonanza No. 6 from Billy James and Percy Thornton. Both pairs worked open-cuts that summer and drift-mined the following winter (*Pathfinder*, October 1921).

Big Eldorado Creek also was worked during this period. Red Stevens re-staked the property on Big Eldorado Nos. 3 and 4 Below Upper Discovery. He maintained that no assessment work had been done, which allowed him to restake the property previously claimed by Tony McGettigan and Dud McKinney. Stevens hired six men, set up a big tent camp on #3 and began ground sluicing (Peterson, 1977).

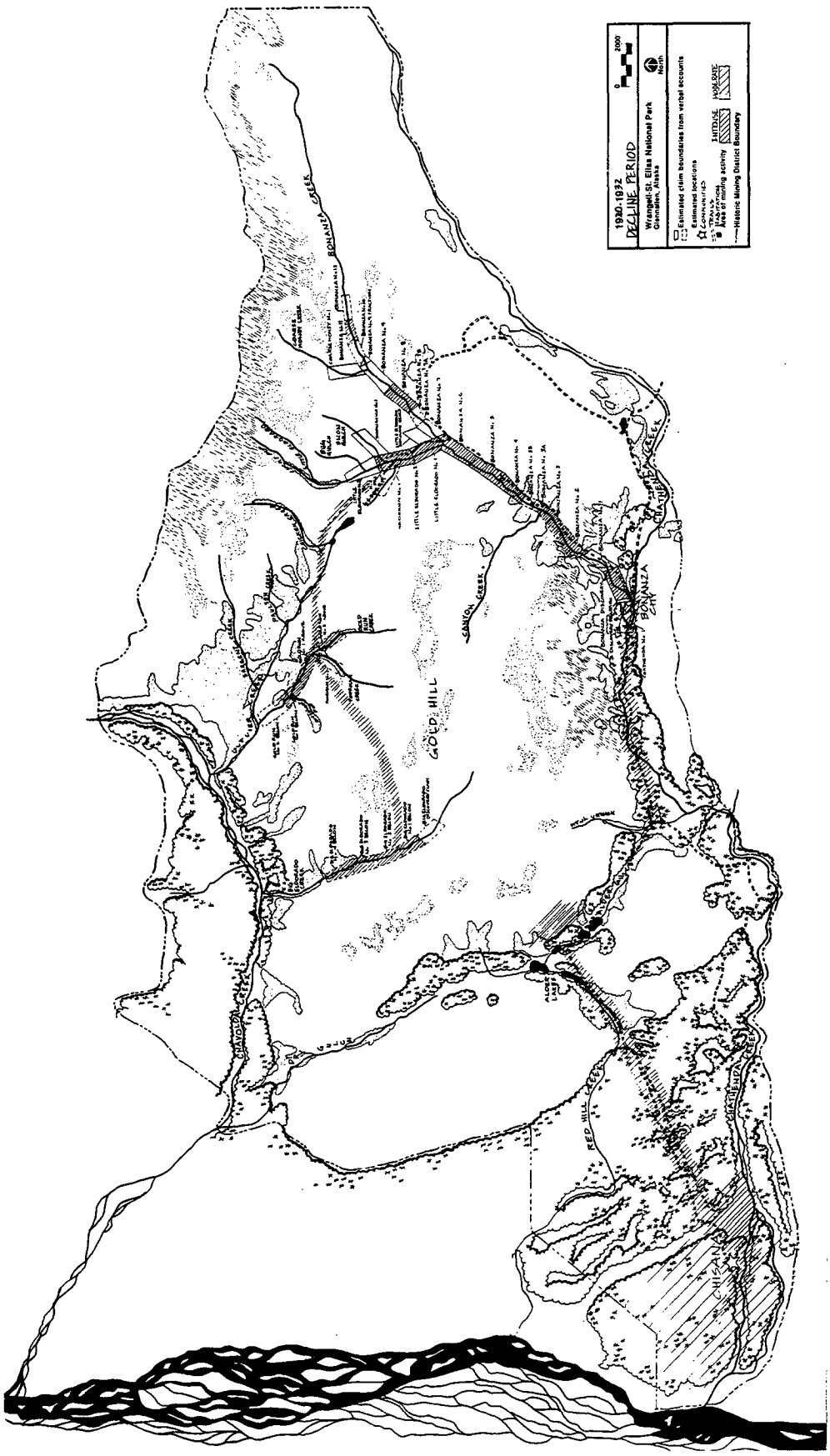
In 1922, twenty-five men operated nine mines in the district. The following year, nine operations employed twenty-two men. James and Thornton employed six men on Little Eldorado No. 1 and Bonanza No. 6. Miles Atkinson and Pete Eikland operated on Bonanza Creek that year, as did partners Don Greene and Joe Davis. Tony McGettigan mined Bonanza Creek as well (Brooks, 1925; Wimmler, 1924). Other creeks were worked, but received less attention. Whitham mined Little Eldorado No. 2; Shorty Briggen, Aaron Nelson and Jack O'Hara operated on Big Eldorado Creek; and Dud McKinney and Jack Carroll worked property on Gold Run (Brooks, 1925; Wimmler, 1924). Mining operations no longer lined the creeks, instead they selected areas of the creeks and worked only those areas.

The town of Chisana City experienced decline as well. A Smithsonian expedition member in the summer of 1924 reported "452 cabins in which one man lives alone" (Medary, 1924). While the Chisana City landscape remained dotted with cabins, they no longer were filled with those who would repair and maintain these buildings.

Acquiring supplies from the outside world remained a problem for the district. In summer, most supplies arrived by pack horse from McCarthy, a six-day trip of approximately eighty miles. In winter, cargo traveled by dogsled (Brooks, 1925; Wimmler, 1924).

Six mines operated in 1925, while in the following year there were only five. In 1926, A. S. Johnson employed three men on Little Eldorado Creek. The men operated a small hydraulic plant to work the benches of the creek. Jack Carroll worked Gold Run Creek and three other men operated claims on Bonanza Creek. Eikland on No. 3, McGettigan and Greene on No. 5 and A. Nelson worked an unidentified claim, probably No. 4 (Moffit, 1927; Smith, 1929; Smith, 1927; Wimmler, 1929). Like ground sluicing, the hydraulic operation removed the overburden from the slopes above the creek edge and washed it downstream. Hydraulic operations, however, widened and broke down the banks of the creek.

Production continued to slowly decline in the



Map 4. Decline Period (1920-1932). Gold Hill-Chisana Historic Mining District. Map: the author.

remainder of the decade. In 1927, the output of gold from the mines was down. In 1928, about twelve men worked five claims. Lack of water hampered the operations. Even though the miners attempted to construct automatic dams, none were completed in time to salvage the season. The season was not a complete loss, however, while working a hydraulic operation on Bonanza Creek operators discovered a rich bench channel.

Gold production dropped again in 1929. The miners worked less accessible areas that were passed over during the district's boom. Only five operations were even moderately active. Miles Atkinson, Aaron Nelson and a partnership consisting of McGettigan and Greene, all worked Bonanza Creek. Joe Davis mined Whitham's ground on Little Eldorado Creek and Barney McKinney sluiced Gold Run Creek (Smith, 1932; Wimmler, 1929).

By 1929, in Chisana City, the one remaining merchant had died, requiring remaining residents to trade outside the mining district (McKennan, 1959). The Alaska Road Commission hired Gus Johnson to construct an airstrip in Chisana City during the year (Walker, 1920). He built the airstrip on an abandoned channel of Chathenda Creek. The 1,500-feet long by 150-feet wide strip was relatively level, possessing a grade of only two percent. Few pilots, however, risked using the strip, despite government claims that it was "comparatively safe to land on" (Description of Chisana). This improvement to Chisana City permanently changed the natural landscape. Even though the creek had already diverted this channel's water to the south, by making it an airstrip they lessened the chance for Chathenda Creek to re-establish the route.

In 1930, some mining occurred on at least six claims. However, gold production for the district continued to decline. Whitham's claims on Little Eldorado Creek, leased by Joe Davis produced the most gold for the season (Smith, 1931). Barney McKinney worked Gold Run Creek, employing a "boomer" dam on No. 1 Above Discovery. Although he eventually cleaned about 6,000 square feet of bedrock, the lack of water hampered mining (Smith, 1931; Pilgrim, 1930).

About a dozen men continued to mine in 1931. James worked his Bonanza Discovery claim by employing an automatic dam to ground sluice. A. S. Johnson reworked Bonanza No. 8, cleaning around 20,000 square feet. McGettigan operated Bonanza No. 11. He installed a new splash dam and ground sluiced about 4,000 square feet of bedrock. Louis McCallum even reported an encouraging lode discovery, finding three gold-bearing veins on the right limit of Alder Gulch (Stewart, 1933).

The Decline Period ended with a slight increase in gold production. However, 1932 proved to be another year in which few miners reworked the ground, making little more than expenses.

Changes to the landscape during this period were less profound than during the previous period (see Decline Period map on page 29). Miners operated on the creeks of Gold Hill, but no longer did one operation start where another stopped. The operations now targeted selective areas. Bonanza Creek was mined sporadically from the canyon area up to Bonanza No. 11; Little Eldorado Creek was still worked; and Big Eldorado Creek was mined as was Gold Run Creek. Lode claims were prospected in Alder Gulch. Many cabins at Chisana City were empty and as a result, started their natural degeneration. The newly completed airstrip permanently changed the course of the Chathenda Creek channel.

6. Recovery Period (1933-1944)

Changes in transportation enabled the Recovery Period. In 1932, aviators started to make regular trips into the district. In addition, the Alaska Road Commission built a road from the community of Gulkana to the Nabesna River, greatly facilitating local transportation. From the new road head at the Nabesna River, the trail to Chisana City was only 48 miles with two difficult river crossings. This was the closest access from an automobile road and it allowed miners to bring in freight with horses in summer or dogsled in winter (Wayland, 1943).

Most claims had been worked by 1933. Mining operations probed for low-grade ores that were previously dismissed as non-cost effective. Increased use of hydraulic operations was typical for the period. The necessity of high water pressure for hydraulic mining operations intensified work on water acquisition systems. Operators added ditches, flumes, regulators and dams to the landscape that severely impacted the landscape because of their length. The Nelson system reached about 1.25 miles from Coarse Money Creek to Bonanza No. 4.

Twenty men mined in the district in 1933, the most in a decade. McGettigan operated on upper Bonanza Creek and Knut and Ulrich Peterson began working Big Eldorado Creek. Others worked Little Eldorado Creek as well.

Seven operations employing twenty men operated in 1934. Increased gold prices encouraged mining. Nelson built an elaborate ditch and flume system to Bonanza No. 5, starting about a half mile below the confluence with Coarse Money Creek and extending downstream past the mouth of Little

Eldorado Creek (Smith, No. 868,1937; Peterson, 1977).

The next year, operations increased to ten in the Chisana-Gold Hill mining district. N. P. Nelson employed six men on Bonanza Creek. Earl Hirst employed four men with his Bonanza Creek operation. Mining also continued on Little Eldorado, Big Eldorado and Gold Run Creeks (Smith, No. 880, 1937, Moffit, 1937)

The recovery expanded in 1936. Gold production increased although only twenty men still mined the area. James and two employees worked his Discovery Claim on Bonanza Creek. While James cleaned an abundance of bedrock that season, his returns were poor. Hirst and his crew located an old creek channel on Bonanza No. 2. Using a nozzle or giant to remove the overburden, they were able to clean 3,000 square feet of bedrock. Greene and two employees hydraulically mined the left bench of Bonanza No. 4 during the season. N. P. Nelson used another hydraulic operation on the left bench of Bonanza No. 6 (Roehm, "Investigations"). A. S. Johnson drift mined a bench on the left limit of Bonanza No. 9 and McGettigan worked Bonanza Nos. 11 and 12 (Smith, 1938).

In 1936, mining occurred on other drainages of Gold Hill as well. Davis operated on Little Eldorado No. 2 and the adjoining claim on Skookum Creek. The Peterson brothers operated a "boomer" dam on Big Eldorado No. 1 Below Discovery. They also discovered a sulfide deposit, on which they filed a lode claim, optimistically called the "Monte Carlo Lode" (Smith, 1938; Roehm, "Preliminary").

Hirst continued hydraulic operations on Bonanza No. 2 by working a bench on the canyon's left limit during 1937 and 1938. Greene also mined a left bench on Bonanza No. 3. Shushanna Joe worked the fraction between claim Nos. 3 and 4. The Nelson Mining Company employed five men and worked claims Nos. 5 and 6. McGettigan operated on Bonanza No. 12 with a shoveling-in operation (Roehm, "Summary").

Operators worked three other creeks. An unidentified Native man worked the upper portion of Little Eldorado Creek, while Joe Davis operated a hydraulic plant on Skookum Creek and Al Wright ground sluiced on Gold Run Creek (Roehm, "Summary").

Hydraulic operations widened the area in which the miners could operate and increased the amount of dirt moved taking large amounts of overburden from the banks and washing it down the creek. Vegetation that protected the banks from erosion was removed and rock or less growth-conducive soils were left in its place. Not only did the mining change the topography, it encouraged further natural erosion and subsequent change in the topography.

Cordova Air contracted to deliver all the miners' freight during the fall of 1938. Both the terms and the service must have been satisfactory, for the parties continued the arrangement for several years (Janson, 1981).

Mining production began to decline in 1939 and 1940. Hirst continued mining Bonanza No. 2 with a move to a bench on the east side of the creek and about twenty-five feet above the creek. To sluice at this location, Hirst diverted water from the upper end of the claim, transporting it to the site through an elaborate wooden flume (Moffit, 1943).

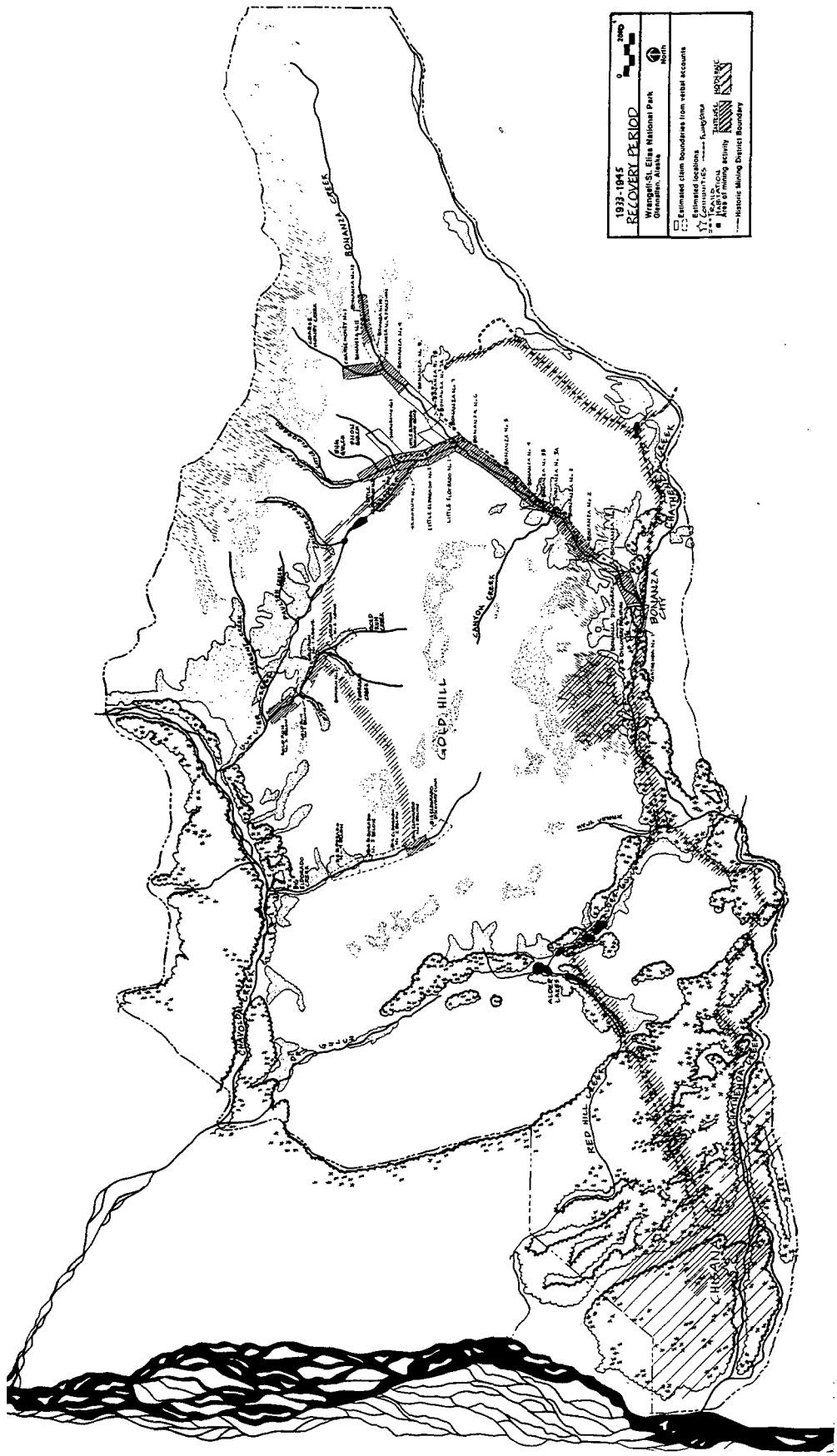
Greene worked Bonanza No. 3, operating on the east side of the canyon about one-hundred feet above the creek. Greene obtained water from a gulch to the west of Bonanza Creek, using an inverted siphon to bring it to his pit (Moffit, 1943).

The Nelson Mining Company continued mining on Bonanza No. 6. During 1939 and 1940, the company moved the hydraulic operation to the east side of the creek (approximately three-hundred feet) and fifty feet above the creek.

Other mines operated in 1940. McGettigan worked Bonanza No. 12 and a group of unidentified Native men mined Bonanza Nos. 3B Fraction and 4 (Moffit, 1943). Al Peterson and Charlie Hawkins prospected on Coarse Money Creek and Sam Gamblin started a tunnel on the Eire group, a cluster of sixteen quartz lode claims located above Chathenda Creek (Moffit, 1943). Lode explorations altered the appearance of the landscape with piles of tailings removed from the shafts. The amount of lode mining done, however, left little change on the landscape at Chisana-Gold Hill.

Production remained stable in 1941, but the Japanese attack on Pearl Harbor restricted the following year's production. In October of 1942, America's War Production Board issued Limitation Order L-208, which closed all but the smallest mines. Like most western states, Alaska fought the order. As a result, the federal government permitted some mines to operate, including those in Alaska employing five or fewer men (Smith, 1944; Barry, 1976).

Although legally allowed to operate, many miners closed their mines for the duration of the war. The miners who had been working in the area such as Nelson, James, McGettigan, Greene, Hirst, Peterson and others, had become old men while working these mines. Most were over sixty-five and needed younger labor to operate. During the war, the old problem of supply service became acute. On one instance, residents experienced hardship



Map 5. Recovery Period (1933-1945). Gold Hill-Chisana Historic Mining District. Map: the author.

because they had not received a shipment for eight months (Janson, 1981).

The Recovery Period significantly altered the landscape primarily because of the type and location of mining operations (see Recovery Period map page 33). Since creek bottoms had been mined to bedrock years earlier, the miners reworked the area by moving laterally in the creeks. They discovered gold deposits on the benches or banks of the creeks which they hydraulically mined. Hydraulic mining operations used a "giant", or a larger nozzle, which could move large quantities of dirt at a time. The operation removed large areas of overburden from the bench areas to reach the gold bearing gravels. In some cases, mining removed the signature windrows and rock piles of the earlier shoveling-in operations. In addition, the water pressure necessary for these hydraulic operations required lengthy water acquisition systems from up-creek heights that could provide needed pressure for hydraulic operations. Each of these actions added another transformation to the landscape.

Mining resumed on a much smaller scale after the war. Mining techniques were changing, however, operators brought bulldozers or large earth-moving equipment into the area. The Recovery Period had ended and a new era had begun.

7. The Aftermath (1945 to Present)

During the mid-1940s, new residents moved to the community. Hunting guide services revived the town of Chisana City. The town was no longer dependent on mining operations for its livelihood. Some of the "old timers" remained in Chisana City as well. N. P. Nelson lived in a small cabin at the southwest corner of the airstrip and delivered the U.S. mail. Billy James and his wife continued to spend much of their time in the community. So did Shushanna Joe, who lived there until his death in about 1960 (Ivan Thorall and Bell Joe as cited in Bleakley, 1996).

Beginning in the mid-1940s local residents submitted their first homestead applications. Billy James filed on the eastern half of Chisana City in 1955, but died in Anchorage in 1960 before acquiring title. Several others' applications waned in the process by various bookkeeping problems. No application was approved until 1979, when Paul Jovich received patent to eighteen-and-one-half acres. Most of this property now belongs to guide Raymond A. McNutt. Two other residents obtained parcels of Chisana City. Elizabeth Hickathier patented on an eighty-acre trade and manufacturing site about two miles west of the old Chisana City townsite and Ivan Thorall patented an one-hundred-thirty-acre homestead south of Chathenda Creek (Spude, "Historic Chisana").

Mining continued on Gold Hill throughout the 1950s, although on an increasingly smaller scale. By the middle of the decade virtually all of the district's original claims had lapsed. During this time, the claims were repositioned from the original Boom Period claim locations. Claims were restaked by new operators employing large-scale earth moving equipment. The effect of these large-scale equipment rigs was to remove the characteristic land form modifications made by earlier mining operations. Windrows from shoveling-in, sluice boxes, the remaining clutter from floods and even mining camps were devastated with several swipes of the bulldozer blade.

Alaska's Statehood Act left conflict surrounding the 103.5 million acres to be placed in the hands of the State of Alaska. Congress passed the Alaska Native Claims Settlement Act of 1971 to settle the dispute between the Native population and the State of Alaska. This legislation also led to the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 which placed 104.3 million acres of Alaska under permanent federal protection. Among those selected were the 13.2 million acres now contained in Wrangell-St. Elias National Park and Preserve. The western half of the Chisana City townsite, as well as the remainder of the Chisana-Gold Hill Landscape, then came under the protection of the Wrangell-St. Elias National Preserve.

The provisions of ANILCA upheld the rights of existing mining claimants in the Chisana-Gold Hill Landscape. Mining remains and the landscape continues to change as a result of this mining. Technological changes have increased the ability of the miners to move more burden and thereby affect existing historic landforms and cultural remnants.

II. EXISTING CONDITIONS

Chapter Contents

This chapter is an examination of the conditions of the Chisana-Gold Hill Landscape as it appears today.

1. Introduction
2. Political Characteristics
   This is a description of boundaries, governing regulations and other political regulations that affect this the Chisana-Gold Hill Landscape.
3. Physiographic Characteristics
   This is a description of topographical aspects, climatic conditions, geographical aspects and water systems in the Chisana-Gold Hill Landscape.
4. Cultural Characteristics
   This is a description of the manmade changes and cultural remains to this Chisana-Gold Hill Landscape. Included are aspects such as timbering evidence, topographical changes and trails within the landscape. Lists of specific mining remnants found in the main creek drainages are given in Appendix I.

II. EXISTING CONDITIONS

1. Introduction

The existing conditions of the Chisana-Gold Hill Landscape are described within three categories: political characteristics; physiographic characteristics; and, cultural characteristics. These categories apply to the landscape as it currently exists.

2. Political Characteristics

The Chisana-Gold Hill Cultural Landscape lies within the boundaries of the Wrangell-St. Elias National Park and Preserve. Wrangell-St. Elias Park and Preserve consists of 11,554,149 acres of federal lands. Officials recorded a total of 52,062 visitors in this park for the year 1994. However, few of these visitors ever visited Chisana-Gold Hill.

Presently, the Wrangell-St. Elias staff manages this landscape area under the General Management Plan/Land Protection Plan for Wrangell-St. Elias National Park and Preserve. The Gold Hill area "has been found not suitable for wilderness designation due to disturbance from past mining operations and related activities, according to the 1986 General Management Plan" (FEIS, 1989).

Privately owned inholdings within the landscape boundary comprise approximately 18.5 acres and are located at the Chisana City site and another 260 acres are just outside the landscape boundary. Fewer than 50 people reside in Chisana City and this number fluctuates according to the season.

Twenty-seven unpatented mining claims covering 540 acres are contained within the landscape boundary. The National Park Service reviews the plan of operations for these mining operations and monitors the active mining operations.

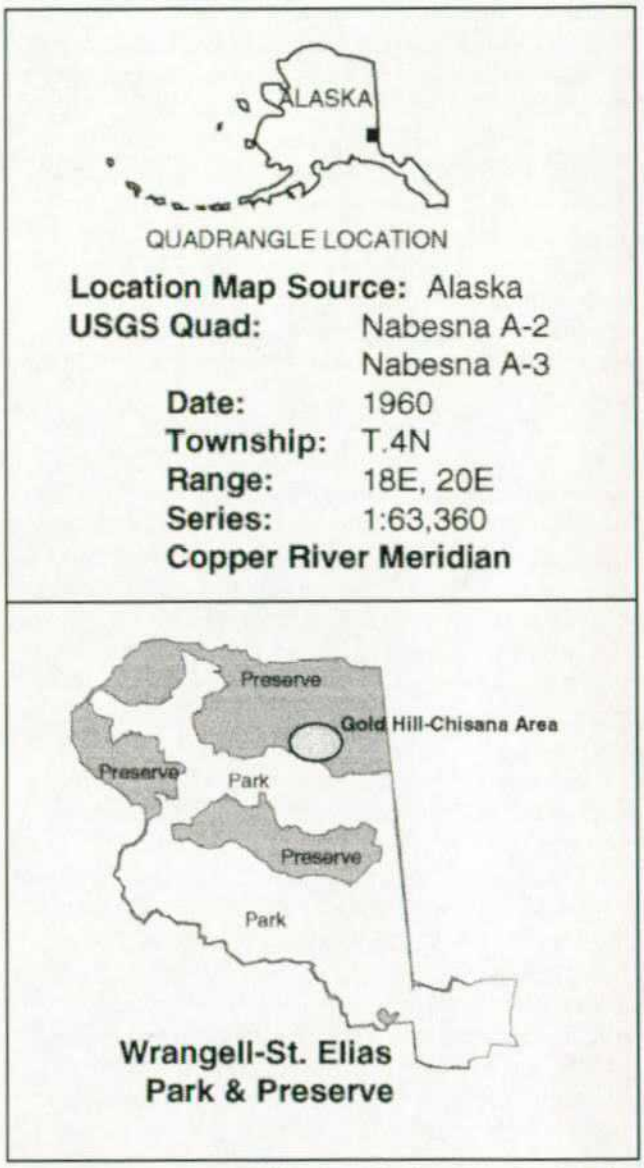


Figure 2. Location of Chisana, Alaska. Drawing by the author.

3. Physiographic Characteristics

The presence of gold formations dominates in this landscape. Geologic formations of glacial and other gravel deposits in combination with volcanic andesite flows furnish the conditions for disseminated native gold, which gives way to placer gold. This single mineral provokes cultural expansion and much of the cultural development of the landscape. In addition, bedrock depth, exposed by mining, molds the area's visual landscape character. Geology takes a prominent role in this landscape.

Gold Hill, the source of the gold, has a physical presence that dominates the visual landscape within the landscape district. Drainages radiate from the hill, eventually spilling waters into the

Figure 3. ATV trail (lower right in photo) through Caribou Pass, 1995. Photo: the author.

Chisana River by way of Chathenda and Chavolda Creeks. Gold Hill rises to an elevation of 5815 feet. Its lowest elevation is 3200 feet near the mouth of Chathenda Creek (see map on page 41).

Rolling hills vegetated with moist tundra characterize the topography throughout the landscape area. Coniferous forests of black and white spruce cover the lowland and delineate elevation by their absence on the upper hillsides. Creeks originate in broad vegetated valleys with panoramic views. The lower reaches of the creeks form steep sided, narrow canyons with confined, closed viewing .

The drainages originating on Gold Hill are non-glacial. Bonanza Creek flows into Chathenda Creek and Gold Run/Glacier Creeks and Big Eldorado Creek flow into Chavolda Creek. The range of flow rate varies from 7 - 20 cubic feet per second (cfs) at the mouths. Glaciers do influence Chavolda and Chathenda creeks which flow into the glacial fed Chisana River. Wide, braided streams characterize these glacial creeks and rivers. A mid-course flow rate for the Chavolda Creek reads 51 cfs with Chathenda Creek having a higher reading of 115 cfs. The Chisana River is a typical glacier river. This widely braided river precludes crossings because of its deep channels, swift flow and silt-laden, icy waters.

Vegetation varies from coniferous forest in the lowland areas to upper alpine tundra. The dominant vegetation on the hills throughout the area is associated with a moist tundra community comprised of sedges and grasses, interspersed with low shrubs which occur on the slopes and riparian areas along the creeks. Throughout the mined creek bottoms, shrub willows indicate a prior land disturbance. A long barren ridge of talus forms the northeast edge of the landscape area. Woodland areas characteristically cover the lower elevations of this landscape (see figure 4).

4. Cultural Characteristics

Cultural remnants of the historic Chisana Mining District remain throughout this landscape. Unlike many other placer mining areas, successive examples of placer mining remain evident here. The harsh conditions and the remote location slowed newer technologies that could have covered and otherwise destroyed evidence of prior mining activities.

The Chisana-Gold Hill area is remote and visitors only reach the region easily by airplane. Two airstrips lie within the landscape boundary, with two additional privately owned runways just outside. A mail plane flies into the town of Chisana City twice a week.

The locations of historic trails within the district remain relatively intact. The trails between Chisana City and Gold Hill are negligible but are not clearly marked in some areas. All-Terrain-Vehicle (ATV) trails replace portions of the pedestrian and horse routes around Chisana City and on Gold Hill. Historic horse trails in the mining area, or on Gold Hill, remain in good condition. In addition, recent ATV trails and bulldozer routes make up about twenty miles of surface routes on Gold Hill (see figure 3).

Mining remnants are scattered throughout the drainages. Mining structures—such as dams, flumes, rock piles, test pits and drift pits—remain to tell the story of this mining history. Smaller objects also contribute to the mining story. Sled remnants, sluice boxes, pipe stock and lumber scatter appear as "junk" to some, but are pieces to the story for those who are able to read and understand the mining landscape.

Structures have been documented as archeological sites within this cultural landscape. These sites have been identified with a NAB-000 identification number. In addition, isolates have also been designated in numeric form. These identifica-

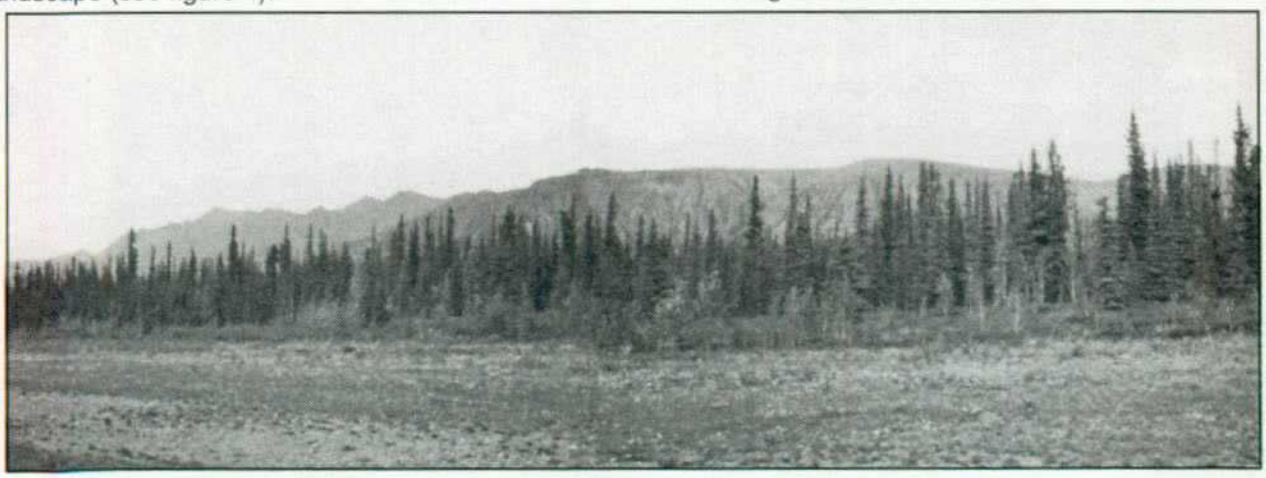
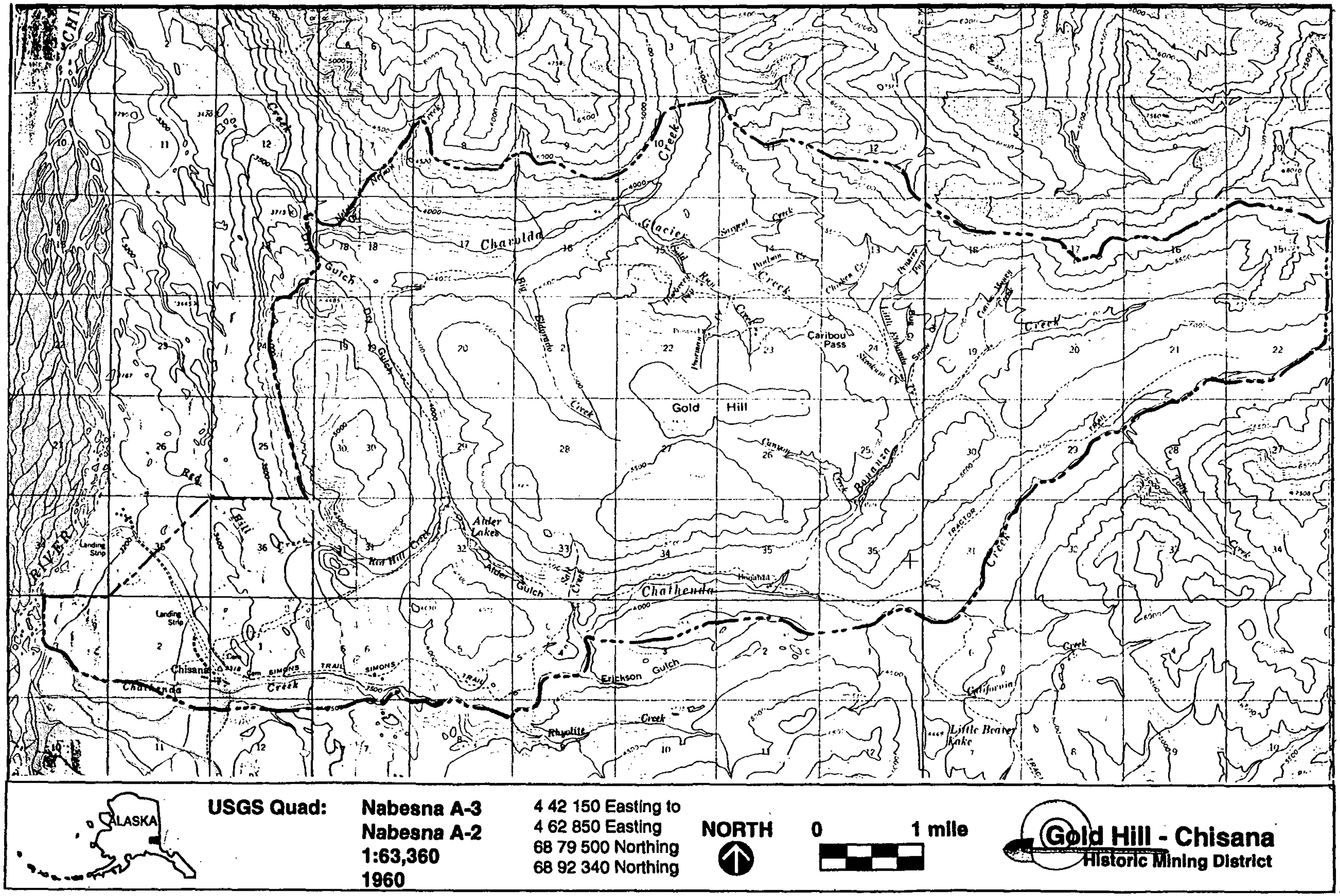


Figure 4. Spruce vegetation at Chisana City, 1995. Photo: the author.



Map 6. Boundary map. Gold Hill-Chisana Historic Mining District. Map: USGS base map. Boundary added by author.

tion numbers systematically identify the mining remnants within the area. Refer to Appendix I for a listing of both the isolates and archeological sites. Refer to the site map on page 45 for locations of the archeological sites.

The greatest concentration of mining remnants is found on Bonanza Creek. Many remnants are also found on Glacier Creek, Gold Run Creek, Skookum, Little Eldorado and Big Eldorado Creeks. Mining infrastructure is found along the hillsides, such as the manmade drainage ditch that connects Chicken Creek land to Skookum Creek or the water acquisition system along Bonanza Creek which includes an impressive flume trellis.

The buildings in the Chisana-Gold Hill Landscape generally are in disrepair, with a few exceptions. Intact tentframes or tentframe platforms are found on the sites of mining habitation camps. A few intact cabins also are present in the mining areas.

Building remnants are found in Chisana City and Bonanza City. A few cabins in Chisana City remain in good physical condition, while those at Bonanza City are in disrepair. Several buildings—the Commissioner's Cabin, the Commissioner's Court, "Too Much" Johnson's Cabin and the Woman's Jail—have been restored at Chisana City.

Many of the features found in this landscape would not be considered significant if considered individually. However, the spatial organization, the cluster arrangements, the topographical modifications and indications of human response to natural features remain evident because of the features found in this landscape. The accumulation of these historic characteristics contributes to the understanding of a vernacular landscape that is ubiquitous in Alaskan history.

Figure 5. Ditch on Gold Run Creek, NAB-073, 1990. Photo: NPS files.

Figure 6. Cabin at Bonanza City, 1995. Photo: the author.

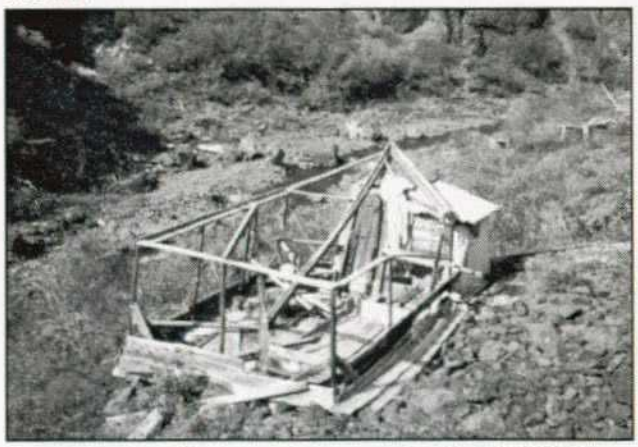


Figure 7. Tent frame on Bonanza Creek, NAB-050, 1995. Photo: NPS files.

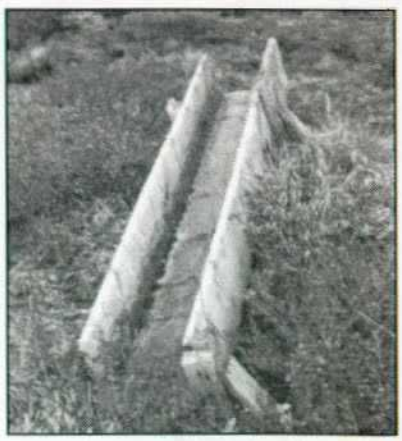
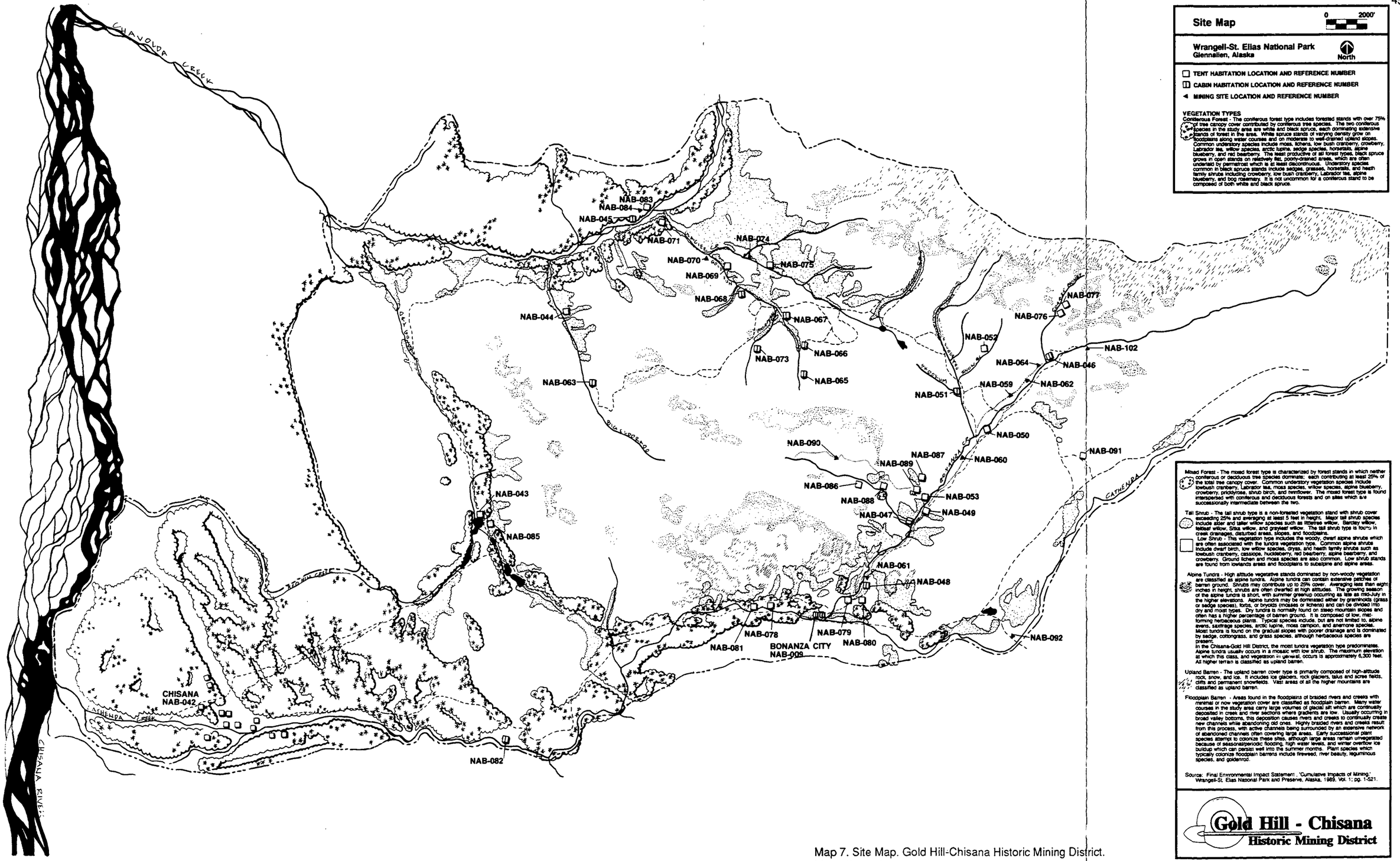


Figure 8. (right) Sluice box on Skookum Creek, 1995. Photo: the author.



Site Map

0 2000'

Wrangell-St. Elias National Park
Glennallen, Alaska

North

- TENT HABITATION LOCATION AND REFERENCE NUMBER
- CABIN HABITATION LOCATION AND REFERENCE NUMBER
- MINING SITE LOCATION AND REFERENCE NUMBER

VEGETATION TYPES

Coniferous Forest - The coniferous forest type includes forested stands with over 75% of tree canopy cover contributed by coniferous tree species. The two coniferous species in the study area are white and black spruce, each dominating extensive stands of forest in the area. White spruce stands of varying density grow on floodplains along water courses and on moderate to well-drained upland slopes. Common understory species include moss, lichens, low bush cranberry, crowberry, Labrador tea, willow species, arctic lupine, sedge species, horsetails, alpine blueberry, and red bearberry. The least productive of all forest types, black spruce grows in open stands on relatively flat, poorly-drained areas, which are often underlain by permafrost which is at least discontinuous. Understory species common in black spruce stands include sedges, grasses, horsetails, and heath family shrubs including crowberry, low bush cranberry, Labrador tea, alpine blueberry, and bog rosemary. It is not uncommon for a coniferous stand to be composed of both white and black spruce.

Mixed Forest - The mixed forest type is characterized by forest stands in which neither coniferous or deciduous tree species dominate; each contributing at least 25% of the total tree canopy cover. Common understory vegetation species include lowbush cranberry, Labrador tea, moss species, willow species, alpine blueberry, bunchberry, prickly rose, shrub birch, and twinflower. The mixed forest type is found interspersed with coniferous and deciduous forests and on sites which are successionally intermediate between the two.

Tall Shrub - The tall shrub type is a non-forested vegetation stand with shrub cover exceeding 25% and averaging at least 5 feet in height. Major tall shrub species include alder and taller willow species such as Bebbs willow, Barclay willow, felt-leaf willow, Sitka willow, and grayleaf willow. The tall shrub type is found in creek drainages, disturbed areas, slopes, and floodplains.

Low Shrub - This vegetation type includes the woody, dwarf alpine shrubs which are often associated with the tundra vegetation type. Common alpine shrubs include dwarf birch, low willow species, dryas, and heath family shrubs such as lowbush cranberry, cassiope, huckleberry, red bearberry, alpine bearberry, and crowberry. Ground lichen and moss species are also common. Low shrub stands are found from lowlands areas and floodplains to subalpine and alpine areas.

Alpine Tundra - High altitude vegetative stands dominated by non-woody vegetation are classified as alpine tundra. Alpine tundra can contain extensive patches of barren ground. Shrubs may contribute up to 25% cover. Averaging less than eight inches in height, shrubs are often dwarfed at high altitudes. The growing season of the alpine tundra is short, with summer greenup occurring as late as mid-July in the higher elevations. Alpine tundra may be dominated either by graminoids (grass or sedge species), forbs, or bryoids (mosses or lichens) and can be divided into dry and moist types. Dry tundra is normally found on steep mountain slopes and often has a higher percentage of barren ground. It is composed of low, mat-forming herbaceous plants. Typical species include, but are not limited to, alpine avens, saxifrage species, arctic lupine, moss campion, and anemone species. Moist tundra is found on the gradual slopes with poorer drainage and is dominated by sedge, cottongrass, and grass species, although herbaceous species are present.
In the Chisana-Gold Hill District, the moist tundra vegetation type predominates. Alpine tundra usually occurs in a mosaic with low shrub. The maximum elevation at which this class, and vegetation in general, occurs is approximately 6,300 feet. At higher terrain is classified as upland barren.

Upland Barren - The upland barren cover type is primarily composed of high-altitude rock, snow, and ice. It includes ice glaciers, rock glaciers, talus and scree fields, cliffs and permanent snowfields. Vast areas of all the higher mountains are classified as upland barren.

Floodplain Barren - Areas found in the floodplains of braided rivers and creeks with minimal or now vegetation cover are classified as floodplain barren. Many water courses in the study area carry large volumes of glacial silt which are continually deposited in creek and river sections where gradients are low. Usually occurring in broad valley bottoms, this deposition causes rivers and creeks to continually create new channels while abandoning old ones. Highly braided rivers and creeks result from this process, with active channels being surrounded by an extensive network of abandoned channels often covering large areas. Early successional plant species attempt to colonize these sites, although large areas remain unvegetated because of seasonal/periodic flooding, high water levels, and winter overflow ice buildup which can persist well into the summer months. Plant species which typically colonize floodplain barrens include fireweed, river beauty, leguminous species, and goldenrod.

Source: Final Environmental Impact Statement , 'Cumulative Impacts of Mining,' Wrangell-St. Elias National Park and Preserve, Alaska, 1989, Vol. 1; pg. 1-521.

Gold Hill - Chisana
Historic Mining District

Map 7. Site Map. Gold Hill-Chisana Historic Mining District.
Map: the author.

III. THE PROCESS OF READING A MINING LANDSCAPE

Chapter Contents

This section identifies characteristics that are typically found in mining landscapes and provides a background for understanding mining landscapes.

1. Introduction
2. The Mining Landscape

III. THE PROCESS OF READING A MINING LANDSCAPE

1. Introduction

This section provides a background of characteristics common to mining landscapes. The term "reading" the landscape refers to understanding the landscape in its context of time and place. An understanding of historical context also includes background knowledge of the cultural processes that typically act upon mining landscapes.

2. Mining Landscapes

Cultural actions make up the processes that typically act upon mining landscapes. Francaviglia (1991) identifies these landscape processes as isolation, nucleation, differentiation, stratification, homogenization, transformation and seriation. Within mining areas these behavior patterns affect the development of the landscape. As one considers the spatial organization of a mining district from its regional view or from its environmental context, one observes that mining districts typically are isolated from the outside world. Isolation, by nature, has two perspectives; that from the outside world looking in; and, that from the inside looking out.

Frederick Law Olmsted, the "father" of landscape architecture, wrote with an "insider" viewpoint about the isolation of the Mariposa gold-mining properties, which he managed from 1863-1865:

> We are very isolated in the valley, though we have a mail every other day and there is a great deal of teaming; but the desert character of the country between here and Stockton is, after all, a great barricade and we seem to be a community by ourselves a long way from the rest of the world (Olmsted, 1863).

Olmsted also referred to another characteristic mining process—nucleation. The community to which Olmsted referred implies a unity or closeness.

> No group sets out to create a landscape, of course. What it sets out to do is to create a community and the landscape as its visible manifestations simply the by-product of people working and living, sometimes coming together, sometimes staying apart, but always recognizing their interdependence (Jackson, 1984).

Typically in mining "boom" towns structures are clustered closely together in irregular patterns along the primary trail. There is a clumping together of the community, regardless of the space available (Francaviglia, 1991). This nucleation is a result of quick development, which often forms around a natural feature such as a creek or gulch (Ibid.). Nucleation in mining districts is a process that influences the spatial organization of a cultural landscape.

Land use patterns of mining landscapes show patterns of differentiation. The diversification of work represents the differentiation found in the Chisana-Gold Hill Landscape. It is closely related to technological and economic factors (Ibid.). A placer mining district demonstrates differentiation in its upper drainages where less water is available and in its lower drainages where more water is available. Each area requires different techniques for mining. In Chisana-Gold Hill differentiation also is displayed in the areas reserved for sawmill activities, areas designated as supply centers and the mining areas.

A stratification of the population also was a normal aspect of mining populations (Ibid.). Cultural traditions dictated that ethnic groups were at a socially lower level than white workers and typically provided services to the miners rather than participate in the mining.

Seriation describes "the process by which things are arranged in succession" (Ibid.). The mining landscape changes in a successional manner. The successional types of mining technologies reveal changing patterns as seen in the changing node locations in the spatial organization, or the developing mining towns. Mining communities experience stages of development in their architecture and their settlement patterns.

In a mining landscape, the transformation of the topography is driven by mining technology (Francaviglia, 1991). Additionally, "in mining districts, large-scale man-made topography is episodic, resulting from technological change that usually occurs in an orderly progression, each successive stage normally being larger in scale than the one immediately preceding it" (Ibid.). The technological progression of the mining operations also are connected to their chronological introduction to the district.

In placer mining, as time passes, improved technology typically provides techniques that disturb larger areas of gravels. If the technological processes are separated in space and time, each can leave evident landform features of their existence in the landscape. However, some mining technologies rework previous tailings and thereby damaging or destroying previous landform features. What is left are land forms that represent only the most current technology. The Chisana-Gold Hill Landscape is

unique in this respect—evidence of early technology mining has not yet been destroyed by more current mining.

Mining districts experience a life cycle. First, explorers investigate a district for its mineral potential. Even after the discovery of ore in one area of a district, new or adjacent areas are prospected for additional strikes. Thus, exploration—the first phase of a mining district—is also an ongoing process. Once a prospector discovers gold or other mineral, the initiation or the Boom period of development takes place. Boom period operators mine only the richest ores while secondary quantities or lower-grade ores are not considered cost-effective.

However, in the diversification phase of development miners probe these low-grade ores. Operators rework the tailings of the previous mining phase with new mining technologies to maximize the conditions of the ore and site. Wayland (1943) reported that the 1941 Chisana mining district had reached the phase of mining development where "production depends on the exploitation of reserves." The district was in the diversification phase of development.

The reworking of a mining landscape progresses one step further, into an intensification period. This period uses large earth-moving equipment to massively rework the landscape. Landform features of previous mining methods become masked by the reworking. The Gold Hill mining district is currently experiencing this period of its life cycle. Recorders identified bulldozing as a mining technique in the district as early as 1940 (Stewart, 1941) and current mining operation plans request the use of a backhoe, another large earth-moving machine.

The end to mining operations signals the cessation of a mining district. Even if a mining district reaches the cessation period, changes in technology can spur the mining district to resume mining operations.

The greatest threat to the Chisana-Gold Hill historic landscape is the further development of the mining district, because when the life cycle of the mining district reaches the intensification period, the reworking of gravels masks historic features. The Chisana-Gold Hill mining district has not yet reached the cessation period. Therefore, the district's position in the intensification period signals the possibility of increased use of large scale earth-moving equipment. If the Chisana-Gold Hill mining district follows a life cycle typical of other mining districts, more large scale mining can occur here. Or, the mining district can leap to the next step in its life cycle—cessation. To date, however, no indication of the cessation of mining in the Chisana-Gold Hill mining district has been detected.

IV. THE ANALYSIS OF A RURAL LANDSCAPE THAT HAS BEEN SHAPED BY MINING

Chapter Contents

1. **Introduction**
   Placer mining landscapes can be analyzed much like rural landscapes. Ten physical character-defining features are appropriate for analysis of the Chisana-Gold Hill Landscape. Each of these character-defining features can be acted upon by character-defining landscape processes which are discussed according to changes of physical character features between historic periods.
2. **Circulation**
   These features are the routes in which humans move within the landscape. Circulation features in the Chisana-Gold Hill Landscape include trails, winter creek routes and airstrips. Circulation routes leading to Chisana-Gold Hill are not part of this landscape. However, they are discussed briefly in order to understand the isolated context of this mining landscape. Within the landscape boundaries, trails connect the important sawmills and supply centers to mining areas. Natural conditions influence the construction and location of trails of the region.
3. **Views**
   Visual relationships between objects and spaces define spatial organization. Included in this discussion on views are examinations of spatial orientation, the impact of the natural environment and mining's effect on the visual landscape.
4. **Geology as Related to Land Use**
   Information available during each historic time period leads to exploration for that period and ultimately to patterns of mining activity.
5. **Topography**
   As a character-defining feature on Gold Hill, topography includes both the human response to the natural topography and the topographical changes that are a result of mining.
6. **Mining Infrastructure**
   Most placer mining operations require water for carrying out mining processes. In the Chisana-Gold Hill Historic Landscape, the infrastructure necessary for water acquisition and manipulation plays a highly visible role.
7. **Cluster Arrangements**
   Mining operations found on Gold Hill are discussed as cluster arrangements within the landscape. Individual components within clusters such as, sluice boxes and rock piles can be classified as objects and structures under National Register definitions. In this report, to better understand this landscape, these components are analyzed as clusters used in historic mining applications. This approach leads to a better overall understanding of the landscape and the mining operations as they occurred.

8. **Vegetation as Related to Land Use**
Timber was needed in mining operations for building sluice boxes, dams, flumes and various other mining components. Gold Hill itself consisted of mainly Alpine tundra or low shrub vegetation and was void of lumber for mining needs. Lower elevations along adjoining slopes and valleys contained the timber used for these operations. Historic accounts found that lumber was cut in the lower elevations and transported to the higher elevations were mining occurred.

9. **Boundaries**
Claim boundaries and private property boundaries are found within this landscape. In particular, claim boundaries markers are found in this landscape from historical periods which show the patterns of claim boundaries that vary from period to period.

10. **Small-Scale Elements**
Small-scale elements add to the historic setting of a rural landscape. Their presence within this Chisana-Gold Hill Landscape give indication of the daily lives of the mining pioneers who once occupied this landscape.

11. **Buildings**
Human response to natural features influenced construction styles and the spatial orientation of the buildings in the Chisana-Gold Hill Landscape.

IV. THE ANALYSIS OF A RURAL LANDSCAPE THAT HAS BEEN SHAPED BY MINING

1. Introduction

This section includes a description of the landscape and the way it has changed through historical periods. This section also contains a discussion of the character-defining features relevant to this landscape and it describes their significance within the landscape. Each discussion of character-defining features is followed by an analysis of the integrity of these significant landscape characteristics.

Character-defining features are made-up of physical characteristics and landscape processes that have shaped the land. The physical characteristics discussed are circulation, views, geology as related to land use, topography, mining infrastructures, cluster arrangements, vegetation as related to land use, boundaries, small scale elements and buildings. Also investigated is the change of these physical characteristics because of landscape processes including land use, spatial organization, response to the natural environment and cultural traditions. The changes of the Chisana-Gold Hill history characterizes the evolving landscape, one clearly acted upon by cultural and natural processes.

2. Circulation

Two levels of scale are necessary to describe the circulation and transportation routes in the Chisana-Gold Hill Landscape. First, the "big picture" or the context of the district contributes to the "sense of place" and awareness of the challenges experienced because of location. Second, transportation routes within the district form a picture of human movement within the mining district. Both outlooks contribute to an understanding of the development of human circulation in the study area.

2.1 The Context of Circulation

Circulation into and within the landscape is a by product of isolation and is further impacted by difficulty of transport over topography, across water and vegetation and during climatic and weather extremes. Few movements can be made spontaneously over a year but rather require planning and preparation. Historically and today, to depart any base of operations whether in the district or outside it, is to extend oneself beyond routine assistance and normally reliable "fall back" routines of safety.

In this sense the context of circulation has

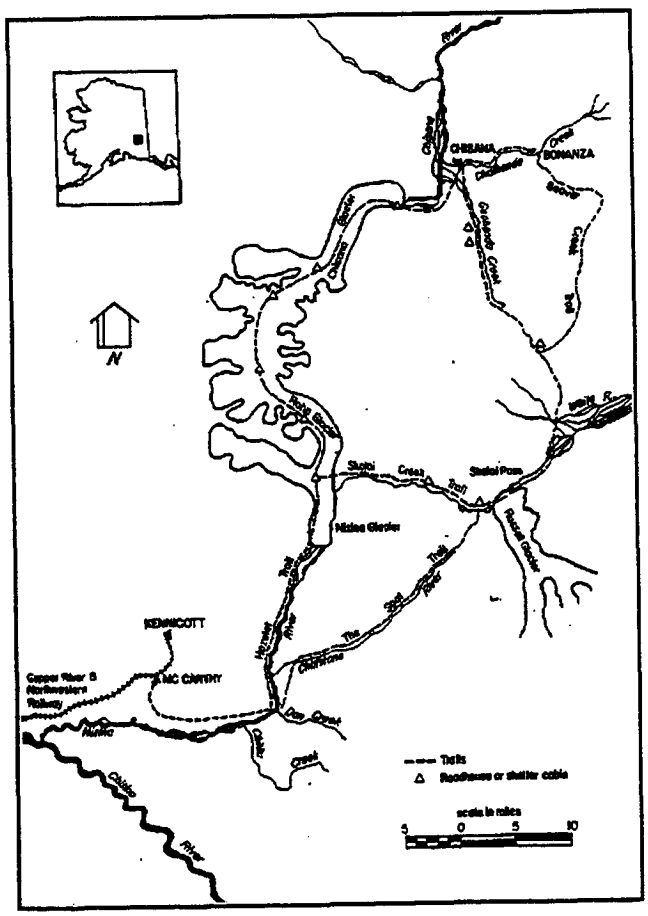


Figure 9. Stampede routes into the Chisana-Gold Hill area from the south. From: A History of the Chisana Mining District, Alaska, 1890-1990.

changed little since the beginning of mining operations. What has stabilized to a large degree is the reliance today on air transport into the area, which in some ways underscores for today's residents and visitors the difficulties that faced the miners who accessed it originally.

The Chisana-Gold Hill Landscape lies in a sparsely populated area of Alaska, between the Wrangell and the Nutzotin mountain ranges. This isolated location contributes to the adversity experienced in the area. Specifically, the isolation and difficult access impede the development of the mining district. Primarily mountains, glaciers and distance severely separate the site from other communities.

The stampeders of 1913-14 approached the Chisana district from every possible direction (Bleakley, 1996). Most routes followed foot and pack animal trails as well as river routes. The ruggedness and poor surface conditions of these routes limited the supplies that stampeders were able to bring with them. Thus, most stampeders were poorly equipped and many failed to reach the mining district at all. Of those who did, the scarcity of supplies caused few to remain for more than a few days (Cairnes, 1915).

During the "Recovery" period of 1933-1945, technological improvements altered circulation routes to the district. Regular air service brought a new mode of access to Chisana City. However, this transportation improvement failed to alter the isolation of the place, much like other mining districts (Francaviglia, 1991) Chisana-Gold Hill remains an isolated district, even with additional transportation improvements.

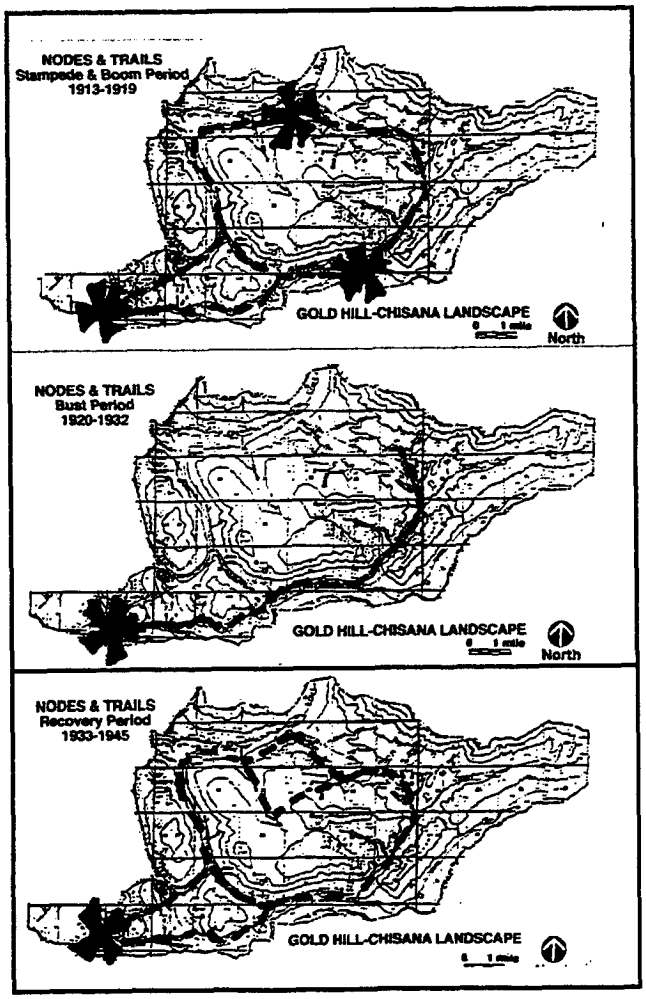
2.2 Circulation Within the District

Broad circulation patterns occur as a result of the transportation and supply trails to the Chisana-Gold Hill mining area. These transportation trails are the routes of the inhabitants and as a result, today they are vestiges of a cultural presence. An examination of mining patterns, topography, climate and the relationship between the mining areas and supply centers leads to an understanding of the cultural forces which have contributed to the character, the location and the longevity of these routes.

2.2.1 Land Use Activities and Their Impact on Circulation Patterns

Historic trails followed and facilitated the mining activities of Gold Hill. Supply routes connected trade centers to the mining areas (see map 8). Some individuals that used these routes include, "Too Much" Johnson who freighted lumber and food to the claims during the teens and 1920s, or Charles Simons who was a Chisana City merchant in the 1920s. Miners and other individuals also used the trail to traverse between mining areas and the town sites.

Trade centers and lumber production typify the land uses associated with supply centers. The mining district organized around various types of land uses including mining, lumbering and trading. This differentiation in land use was typical of a mining district (Francaviglia, 1991) and these differences in land use brought about the circulation patterns. Both historic and current circulation patterns found in the Chisana-Gold Hill Landscape followed the trails which connected the lumbering and trading areas with mining areas.



Map 8. Circulation routes of trails within the landscape. Top: Stampede and Boom Periods (1913-1919) Middle: Decline Period (1920-1932) Bottom: Recovery Period (1933-1945). USGS base maps. Routes and nodes added by the author.

2.2.2 Response to the Natural Environment and its Impact on Circulation Routes

As noted, the character of the district's circulation routes developed in response to the natural environment. For example, rugged topography along drainages forced the miners to traverse steep banks. As a result, canyon trails, such as the one along the lower portion of Horse Trail, developed as narrow paths that followed the contour of slopes above the rocky canyon creeks (figure 10). Trails avoided difficult hiking routes like lowland tussock areas.

Seasonal supply routes are the result of extreme differences between long cold winters and short mild summers. Summer trails, such as Simons Trail and The Red Hill Creek Trail, traverse the hillsides, while the winter sled routes follow the frozen Chathenda and Chavolda Creeks. Spring break up eliminates any evidence of these winter routes. Historic photos, however, verify that both dog and horse teams pulled the winter sleds (figures 11 and 12). Other indications of these winter routes are sled remnants, corrals and the dog houses associated with cabins. Thus, the diverse climatic differences found in this mountain terrain shaped the circulation routes.

2.2.3 Spatial Organization and Circulation Patterns

The location of supply nodes and mining areas shapes the spatial organization of each historic period. Lynch (1960) says that the legibility of space can be identified through paths, edges, districts, nodes and landmarks. Paths (circulation routes), nodes (supply centers) and districts (mining areas)[1] form the spatial organization of the Chisana-Gold Hill landscape and the hill itself functions as a landmark defining the spatial organization (Lynch, 1960) (refer to Views section). The location of supply nodes, circulation routes and mining areas forms the spatial organization in each historical period.

During the Stampede and Decline eras, the nodes or supply centers are identified as Bonanza City, Chisana City, Hamshaw's Camp and the sawmill center on Chathenda Creek (Woodrow City). The mining areas consist of linear claims that follow the drainages of Gold Hill. The mining areas of the Stampede and Decline Periods are Little Eldorado Creek and its tributaries, Bonanza Creek and its tributaries, Gold Run Creek and its tributaries, Glacier Creek and its tributaries, Big Eldorado Creek, Chavolda Creek and Chathenda Creek.

During the Decline Era, mining activities lessened and the need for supply centers decreased. Bonanza City remained, but its size dwindled to only a few buildings. Chisana City remained an important node in the district as a sawmill location as well as a trade center. Mining during the Decline Period concentrated on Bonanza Creek, although some mining was done on Big Eldorado and Gold Run Creeks.

The installation of the airstrip at Chisana City marked the beginning of the Recovery Period. Since its construction, most supplies were brought into Chisana City by air and dispersed from this location. Chisana City served as the primary node within the district during the Recovery Period and continues as such today. Trails connect this node to the mining areas of Bonanza Creek, Coarse Money Creek, Little Eldorado Creek, Skookum Creek, Snow Gulch, Gold Run Creek, Poorman Creek, Discovery Creek, Glacier Creek and Big Eldorado Creek.

2.3 Analysis of Chisana-Gold Hill Circulation

Access to the district remained difficult through all the historic periods. Even today, difficult access to the district contributes to the historic experience of the site. The evolution of the circulation patterns of the Chisana-Gold Hill Landscape is the direct result of changing locations of supply centers and the mining areas. Early circulation routes followed drainages and originated from Bonanza City, Woodrow City or Chisana City. In the later Decline Period, supplies were transported from Bonanza City or Chisana City to the Bonanza Creek drainage where mining operations were concentrated. Chisana City became the single supply center during the Recovery Period and all supplies were transported from this node to the Bonanza Creek, Little Eldorado Creek, Gold Run Creek, Glacier Creek and Big Eldorado Creek drainages.

These nodes and land use areas reflect the patterns of historic routes within the district. Existing trails that follow these circulation patterns retain historic integrity in their location.

Two historically significant trails—Simons Trail and the Red Hill Creek Trail—originate at Chisana City and lead to the Gold Hill area. The Red Hill Creek Trail separates into the northern Dry Gulch route to Chavolda Creek and the southerly Alder Gulch route to Chathenda Creek and on to Bonanza City. These trails retain good integrity in terms of location, setting, feeling and workmanship but in

[1]Lynch's term 'district' is referred to in this document as 'mining area' so that it is not confused with the National Register definition of District.

some stretches the current physical condition is poor. Lack of use has caused the trails to become overgrown and in some cases unidentifiable.

Horse Trail follows the Bonanza Creek river drainage. This significant trail dates from the Stampede days. It has good integrity in terms of location, setting, feeling and workmanship.

In recent years, the historic trails have been used for mechanized traffic. These modern "two rut" character disrupts the historic integrity, especially where these altered trails cross open tundra. Although the trail crossing from Bonanza Creek to Chicken Strip retains integrity of location, the trail has become an ATV trail and no longer retains historic integrity other than its location.

Archeological records report that the trail following the upper ridge of Big Eldorado Creek has good historic integrity. Aerial maps substantiate these findings.

The trail that follows the lower reaches of Gold Run and Glacier Creeks has good integrity in terms of location, setting, feeling and workmanship. The trail requires continued use to maintain its physical condition.

A trail crossing Gold Hill from Gold Run Creek to the upper areas of Big Eldorado Creek is a likely route from the historically significant periods. However, no documentation has been found to substantiate its existence. The trail has become an ATV trail and no longer retains historic integrity other than, possibly, location.

The airstrip at Chisana City has good historic integrity. Its river rock material is similar to that used during its construction in 1932. Improvements to the airstrip have been similar in kind. The origin of the Chicken Strip air runway on Gold Hill has not been established. Some think that it was opened after the significant historic periods and is considered a non-contributing resource in the landscape. This feature warrants additional study.

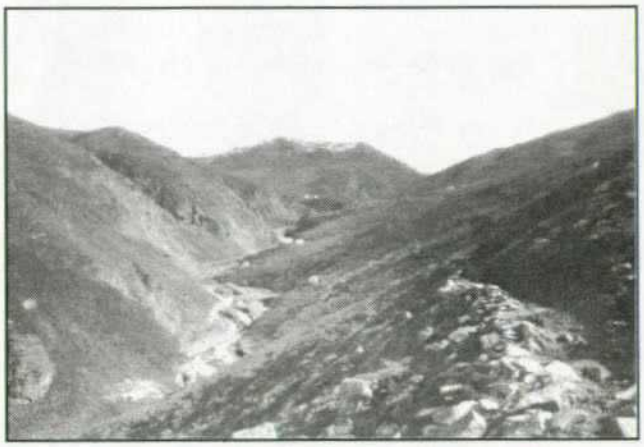
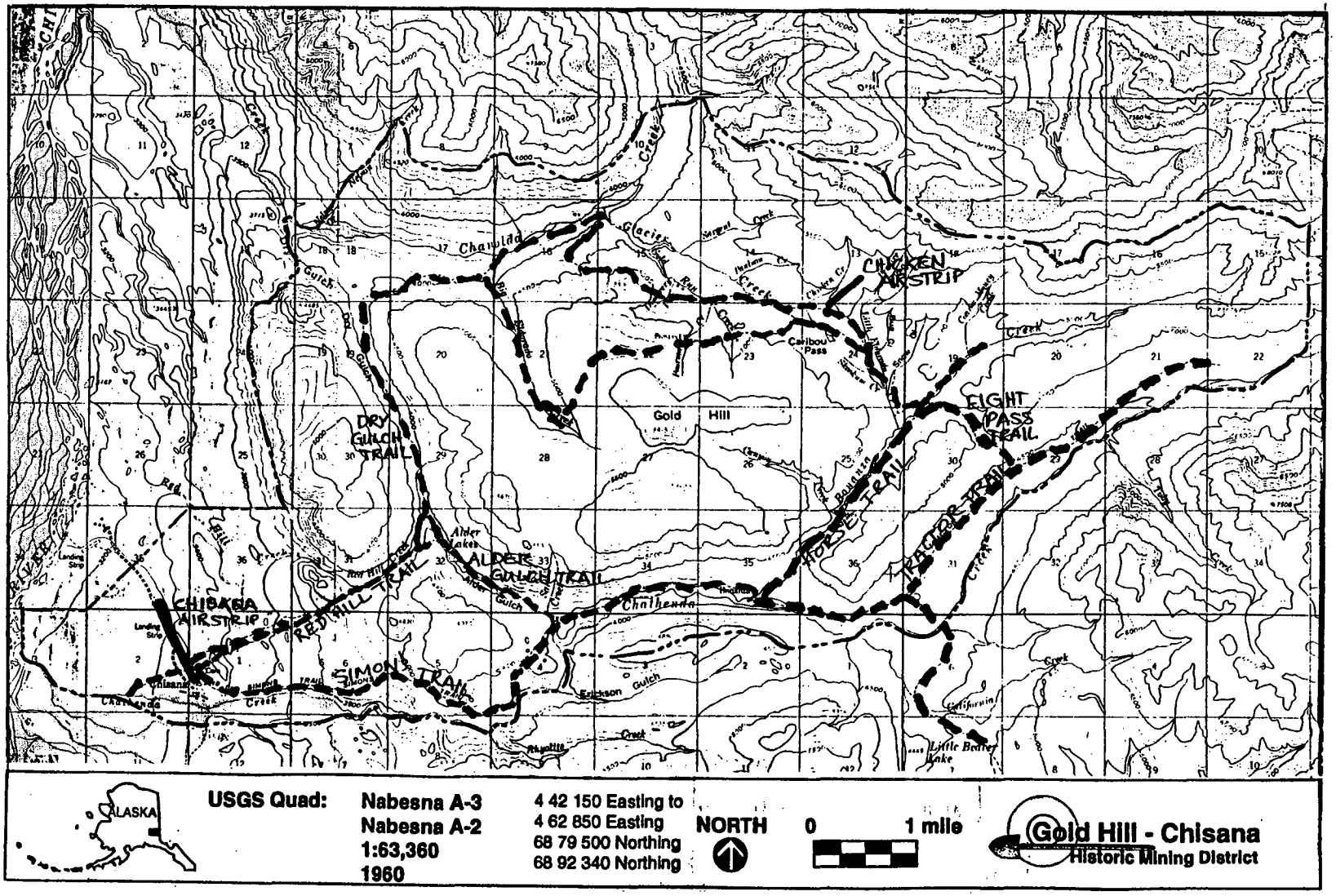


Figure 10. Horse Trail on right, Bonanza Creek, 1914. Photo courtesy: USGS, Capps collection.

Figure 11. Freight heading to the mining area on the winter route, Chathenda Creek, 1914. Photo courtesy: Tacoma Public Library, Stanley-Mason collection.

Figure 12. Dog sleds in front of the Miner's Home Bar, downtown Chisana City, 1913. Photo courtesy: Alaska State Library, Zacharias collection.



Map 9. Trails of the Gold Hill-Chisana Historic Mining District. USGS base map. Trails added by author.

3. Views

3.1 Introduction

Landscape views not only influence the ways in which visitors perceive the landscape, they reflect the behavioral patterns of early inhabitants. In this section, a background of landscape views is presented as they affect and influence cultural landscapes. Next, this section examines the way in which the visual landscape orients the viewer within it. This landscape visually oriented the miners during the historic years and can be used to visually guide today's visitors. This section also describes how the natural environment forms the visual landscape.

3.2. Background

Landscape views are formed from a viewer's perspective and sense of scale within the landscape. A historic landscape combines the views of today with perceived views from the historic period. Melnick (1981) explains visual qualities of a historic landscape this way:

> Cultural landscapes exhibit perceptual qualities which present a connection to the cultural significance of the place. Among these are views into the landscape, out of the landscape and within the landscape, as well as the over viewshed of the landscape. Large, encompassing views visually connect various elements of the landscape. Smaller scale, more intimate views also serve to define the limits of immediate cultural landscapes (Melnick, 1981).

Visual connections help categorize the landscape. Litton defines landscape types based on visual characteristics in "Visual Vulnerability of forest Landscapes[2]. Outdoor Recreation Research: Applying the Results" (1974). Litton develops landscape types from the landscape view and the viewer's corresponding connection to the landscape that results from that view. These landscape types—panoramic landscape type, enclosed landscape type, feature landscape type and ephemeral landscape type—are found throughout the Chisana-Gold Hill Landscape.

Landscapes with little or no boundary restriction make up the panoramic landscape type. The visual characteristics of this landscape type include open, wide views which connect the viewer to the organization of the landscape. These also are called over viewsheds of the landscape by some scholars.

Landscapes that enclose one's vision with sides describe the enclosed landscape type. These landscapes have visual wall and floor characteristics that focus the viewer on the immediate landscape.

Landscapes that are dominated by feature objects or groups of feature objects make up the feature landscape type. The visual characteristics of this landscape type are feature objects that catch the viewer's eye and form an interpretation of the object's meaning.

A landscape that is dependent on transitory effects makes up the ephemeral landscape type. Animal sightings, reflected images, sunrises and sunsets are examples of the visual characteristic of ephemeral landscapes. These ephemeral landscape views reward those who delight in the unexpected.

3.3. Spatial Orientation and the Visual Landscape

Mountain ranges form the visual edges of the Chisana-Gold Hill Landscape. These visual edges correspond to Melnick's (1981) "views out of the landscape" and Litton's (1974) "panoramic landscape type" and include views such as those of the Nutzotin Mountains which provide a visual edge in the north and east skyline. Additionally, the Wrangell Mountains provide a visual edge for the southwest skyline.

Gold Hill's visual prominence designates it as a landmark within the landscape.[3] Specifically, this landmark provides spatial orientation for the visitor within the Chisana-Gold Hill historic district. Placer mining occurred in the drainages radiating from the hill which Capps, in 1916, described this way:

> Gold Hill, a high, smooth-topped mountain, lies about in the center of the producing placer claims and is drained by Canyon, Bonanza, Little Eldorado, Skookum, Poorman, Glacier and Big Eldorado creeks, a group comprising all the streams that have been shown to contain workable placers (1916).

Miners also attached symbolic meaning to Gold Hill. The hill represented the source of their hopes—the origin of the gold. They thought that gold originated in the tertiary gravels of the hill's cap (Capps, 1916).

---

[2]The categories defined by Litton are: 1) Enclosed landscape; 2) Feature landscape; 3) Panoramic landscape; 4) Focal landscape; 5) Detail landscape; 6)Ephereral landscape.

[3]Using the Lynch definition of 'landmark' (Lynch, 1960).

Exclusive of a few claims from which some gold was taken during prospecting operations, all the gravels which have been profitably mined can be included within a circle only 5 miles in diameter, with Gold Hill as its center (Capps, 1916).

3.4 The Natural Environment and its Impact on the Visual Landscape

Natural features are prominent in the panoramic landscape type, the enclosed landscape type and the ephemeral landscape type. Existing conditions at Chisana-Gold Hill reveal broad views of the natural topography that have changed little since the historic eras. The relevance of these views is the connection that the historic miner felt with the landscape, either consciously or unconsciously.

The upper reaches of the site's drainages contain primarily panoramic views, defined as those landscapes with wide horizons. These views connect the viewer to the isolation, a feeling prevalent in mining landscapes. "This isolation, which is often reinforced by the seeming inhospitableness of the surroundings, makes a strong impression on the traveler—and nonresidents of mining districts" (Francaviglia, 1991).

Visual walls which enclose one's view define the enclosed landscape. This type of landscape is found among the spruce forest lowlands and in the lower canyons of the Gold Hill drainages.

Sightings that come and go within the landscape make up the ephemeral landscape. Animal sightings remain as an existing condition within the district. Historical accounts from the Decline Era refer to the dwindling size of big game populations and small game depletion, such as the ptarmigan (Capps, 1914). The locations and the frequency of this type of viewing experience are unpredictable, but the opportunity remains prominent within this landscape.

Historic photos supply evidence of views relevant to the Stampede and Boom Period miner. Amateur photographer Fred Best, USGS recorder S. R. Capps, professional photographer Lewis V. Stanley and other photographers left a visual legacy of the area, including:

Figure 13: This is a panoramic view of Bonanza City, taken during the Boom Period. The photo point is on the bluff of the Bonanza Creek "Horse Trail" that connects the mining areas to Bonanza City. Using this trail, miners walked down from the mining areas to Bonanza City for supplies and an occasional game of cards (Prescott). We can assume that this view was a welcome sight to the weary miner.

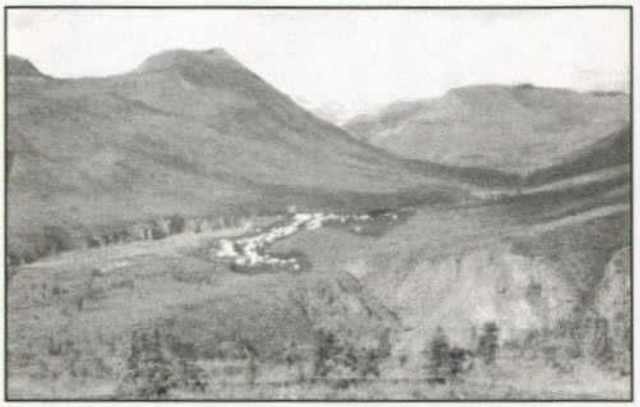


Figure 13. Panoramic view of Bonanza City, 1914. Photo courtesy: USGS, Capps collection.

Figure 14. Panoramic view of the Bonanza City area, 1995. Photo: the author.

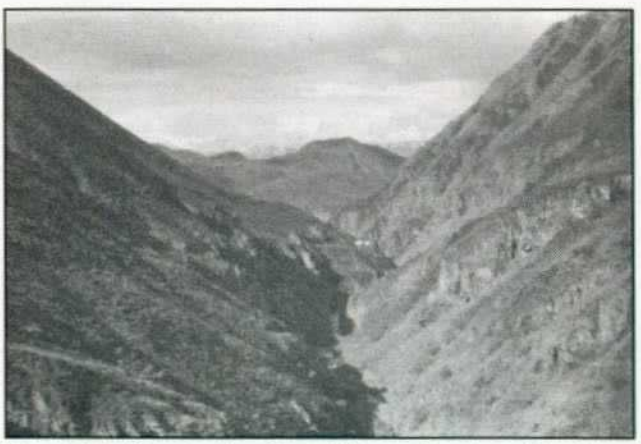


Figure 15. Panoramic view of lower Bonanza Creek, 1914. Photo courtesy: USGS, Capps collection.

Figure 14: This is a panoramic view of the same Bonanza City view, today from the bluff of "Horse Trail".

Figure 15: This panoramic view of the lower Bonanza Creek canyon area connects the viewer with the length and depth of the canyon.

Figure 16: This is a present day photo representing an enclosed landscape in Chisana City. Cabins located in the spruce forest would have a viewshed limited to the surrounding trees and the forest floor. The inhabitant's focus becomes concentrated by these closer visual boundaries. The eye would focus on the birds in the trees, the vegetation of the forest floor, or the activities of the cabin.

Figure 17 and 18: This is a panoramic view of Hamshaw's Camp on Bonanza Creek claim No. 6, taken in 1914. This is a composite of two historical photos taken by S. R. Capps. Apparently, he realized that the frame of a single photo did not take in the whole scene. The two photos appear to be taken consecutively from the same location, with the camera being moved along the horizon line. The visual edge in this view is the Nutzotin Mountains. (A 1940s photo [not shown] shows the same area as the photo of Hamshaw's Camp from the northeast, rather than the southwest. On this photo mining operations have cleared the area of any indication of the Hamshaw camp.)

Figure 16. An enclosed landscape focuses on the extant cabin remains, Chisana City, 1995. Photo: the author.

Figures 17 and 18. Panoramic view of Hamshaw's Camp at the convergence of Bonanza Creek and Little Eldorado Creek, 1914. Photo courtesy: USGS, Capps collection.

Figure 19: This is a photo view into an enclosed mining area. In contrast to the panoramic landscape views, the enclosed landscape is typical of the lower drainage areas. These views are restricted by the vertical side walls of the creek banks. Although this photo is an over viewshed of the canyon area, views from the tentframe shown in the canyon would have been limited by the surrounding canyon walls.

Figure 20: This is a photo of mining on Historic Bonanza No. 7, showing the enclosure of creek banks. This viewpoint connects the viewer with the close-up realities of a placer miner. The sounds of rushing water, the rocks, the tools and the work required of the miner identify this enclosed view. From this enclosed view, a visitor can begin to understand the passion and the tenacity required of these miners on a daily basis.

Figures 26 to 28: These photos show the Earl Hirst hydraulic system at NAB-061, documented in both the Boom and the Recovery periods. A panoramic over viewshed (figure 27) shows the site of this mining camp in 1914. The same photo view (figure 28) taken in 1995, provides an understanding of the land modifications that have occurred as a result of the hydraulic mining that occurred there. The same hydraulic mining site was recorded by Wayland in 1940, but the photo was taken from the enclosed landscape viewpoint (figure 26). The enclosed viewpoint provides a close-up of the landform modification.

3.5 Land Use and the Visual Landscape

A closer view of landscape features at Chisana-Gold Hill expose changes to the topography, structures and specific natural and cultural features. These closer views comprise the feature landscape in Litton's landscape types (1974). Photographs provide evidence to compare measurable changes in the landscape. Further more, feature landscape photo comparisons provide insight into the effect of human intervention in the evolving landscape.

Figure 22: This photo of mining activity shows the location where gold was discovered. Here, at the mouth of the Little Eldorado Creek, the mining operations form the visual focus of the landscape.

Figure 23: This photo at the mouth of Little Eldorado Creek, today, shows little mining activity and few remaining artifacts. Only the flattened creek bottom remains as evidence of prior mining.

Figure 21: This is a photo featuring a view of mining operations on the Little Eldorado Creek bench area. Note the northeastern skyline boundary in the background.

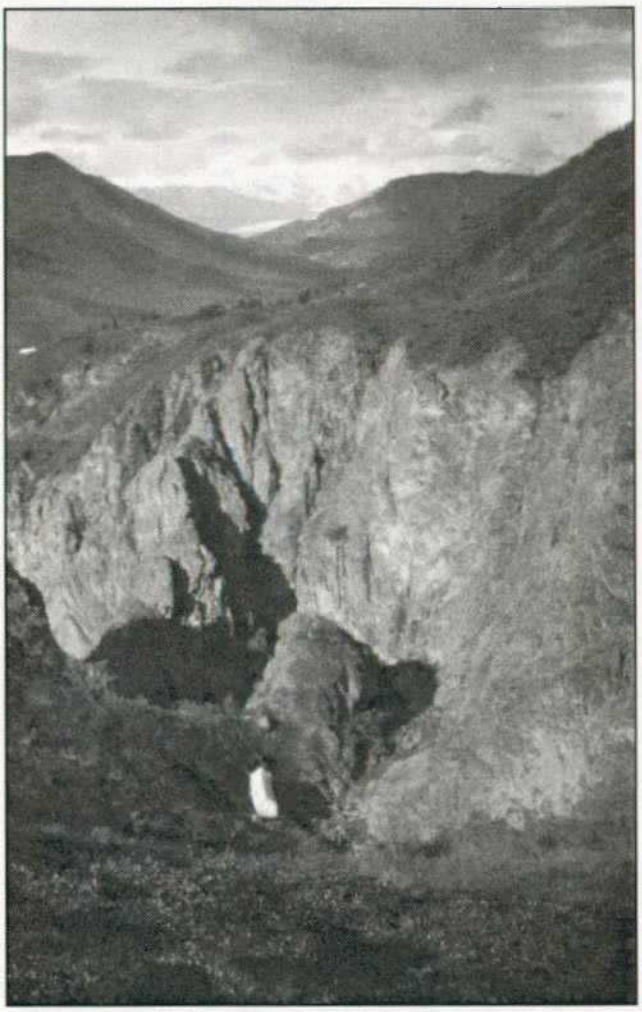


Figure 19. An over viewshed of a mining camp in the lower canyon area of Bonanza Creek, 1914. Photo courtesy: USGS, Capps collection.

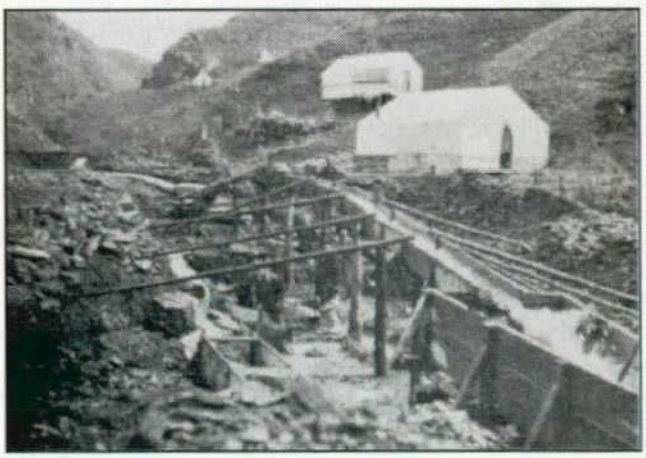


Figure 20. Enclosed view of a shoveling-in operation on Historic Bonanza No. 7, July 1914. Photo courtesy: Tacoma Public Library, Stanley-Mason collection.

Figure 24: This photo of the bench workings location on Little Eldorado Creek shows that today, the view is no longer the feature view that it was in 1914.

Figure 25: This photo shows the bench workings on Bonanza No. 6. This hydraulic mining technique was typical of the 1940's Recovery Period. Buildings, structures, landform changes and small scale elements of mining activities dominate in this feature landscape. Although all the drainages contain these feature elements, Bonanza Creek provides the greatest concentration of scattered remnants. In addition, both Chisana City and Bonanza City contain elements of the feature landscape type. At this location scattered remnants remain as testimony to the activities that once were part of these feature landscapes.

3.6 Analysis of Gold Hill Views

Gold Hill serves as a landmark in this landscape. Its visual prominence orients the visitor within the landscape. Views of Gold Hill contribute to the character of the landscape and they contain integrity of setting.

Any panoramic landscape views which contain non-historic features deter from the overall character of this landscape. Modern obstructions detract from the overall feeling of isolation on Gold Hill. Over viewsheds with historic integrity include views of the lower Bonanza Creek canyon and the view of Bonanza City from the trail. Views of mining features retain the integrity of setting and feeling. Bulldozing and extensive mining eliminated the historic view of the Hamshaw Camp area. It lacks the integrity of the Stampede, Boom and Decline Era mining periods. It does, however, retain integrity from the later period in that it displays the topography changes from the 1940s.

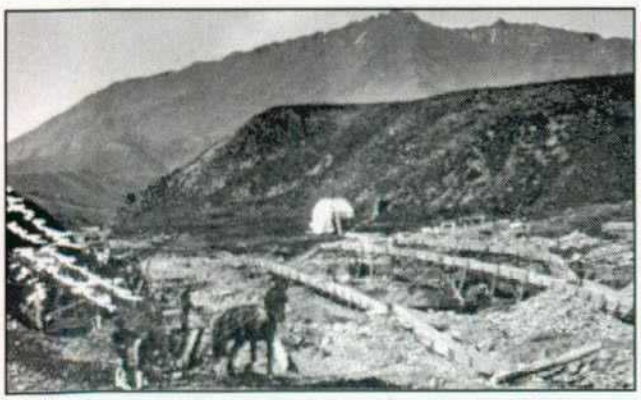


Figure 21. Feature view of shoveling-in workings on Little Eldorado Creek, 1914. Photo courtesy: Tacoma Public Library, Stanley-Mason collection.

Figure 22. Feature view of Hamshaw's shoveling-in mining operation at the mouth of Little Eldorado Creek, July 1914. Photo courtesy: Tacoma Public Library, Stanley-Mason collection.

Figure 23. Feature viewpoint shows only the flattened creek bottom. Same location on Little Eldorado Creek as the historic photo above. 1995. Photo courtesy: G. Bleakley.

Figure 24. Today's view is no longer a feature view. Bench workings location on Little Eldorado Creek, 1995. Photo: the author.

Again, an enclosed landscape focuses on views of the nearby landscape and in the case of Chisana-Gold Hill, enclosed landscape views assist the viewer in understanding the experience of the historic miner, contributing to the integrity of feeling within the landscape. Specifically, the enclosed views of close canyon walls along lower Bonanza Creek focus the viewer on the details of the creek and the enclosed landscapes formed by the lowland wooded areas focus the viewer on details such as the domestic living spaces.

Views of the placer mining activities within the drainages of lower Bonanza, lower Glacier and Big Eldorado Creeks are from trails and other upper viewpoints. Photographers, Best, Capps, Wayland and others captured the mining activities within the drainage claims. The same feature views, today, help the viewer to understand historic activity such as the abundance of scattered remnants indicating the Stampede Era of mining activity. Views of the incredible amount of "stuff" left here contain historic integrity and retain feeling for the setting.

To understand the feature landscape, a view perspective is selected to fit the landscape feature. For example, Wayland's detail view (figure 26) of Earl Hirst's hydraulic mining operation makes it difficult to be seen as a mining operation. Details of the same site when shown as an over viewshed in the comparison of the 1914 and 1995 photos (figures 27 and 28) provide a greater understanding of the mining techniques of the period.

Figure 25. Feature view of Don Greene's hydraulic workings on Bonanza Creek, 1940. Photo courtesy: USGS, Wayland collection.

Figure 26. Feature view of Earl Hirst's hydraulic pit, 1940. Photo courtesy: USGS, Wayland collection.

Figure 27. Panoramic view of the Earl Hirst mining area prior to the hydraulic mining, 1914. Photo courtesy: Tacoma Public Library, Stanley-Mason collection.

Figure 28. Panoramic view of the Earl Hirst mining area in 1995. Photo: the author.

4. Geology as Related to Land Use

4.1 Geology Reports of Gold Hill

The location of mineable ores drives land use and its patterns within mining landscapes. Without gold, for example, the Chisana-Gold Hill Landscape would have developed quite differently. Miners attempted to understand the location of ores before applying earth moving mining techniques. Therefore, the "current" hypothesis of geologists establishes the historic patterns of exploration. Fortunately, several geologic investigations are available from geology reports made throughout Chisana-Gold Hill's historic periods.

4.1.1 The Exploration Period (1910-1913)

The first geologic investigations of the area were the observations of C. W. Hayes in 1891, Alfred Brooks and W. J. Peters in 1898 and F. C. Schrader and W. C. Mendenhall in 1902. Moffit, Knopf and Capps extended the geologic and topographic mapping of the area. Their report indicated the presence of small quartz veins and expressed the possibility of placer gold in the Gold Hill mining district (Moffit, et al., 1910). This report of ore and verbal reports from the native population may have prompted the exploration of the area by Billy James, N. P. Nelson and Fred Best. James and Nelson, with the aid of Matilda Wales, are credited for the discovery of gold in the region in 1913.

4.1.2 The Stampede Period (1913-1914)

Canadian geologist D. D. Cairnes visited the district early in August 1913. His reports identified the Little Eldorado Discovery Claim and claims below on Bonanza Creek as the richest in the district. Cairnes also identified the source of the gold as old creek channels. The reports found that new channels cut through the old creek channels and projected that gold lay on the bedrock of the new channels.

4.1.3 The Boom Period (1914-1919)

While the complete findings were not published by Cairnes until 1915, portions of his data was first published in the USGS publication by Alfred Brooks in 1914. These first attempts to identify the source of gold deposits located them next to the bedrock in the alluvium of pre-glacial channels.

> The bedrock of the district is chiefly closely folded gray and black shale with some intercalated beds of sandstone and conglomerate. Some of the shales are calcareous. Intrusive rocks occurring in dikes are abundant. These formations are similar to those that make up much of the Nutzotin Mountains and are presumably Mesozoic in age (Brooks, et al., 1914).

The report expended belief that the mineral was widespread throughout the district and could most likely be found within pre-glacial channels. The report did not indicate the location of these pre-glacial channels but suggested detailed prospecting to locate them.

S. R. Capps investigated the Gold Hill mining district in 1914 describing the work and the "current" understanding of the geologic development (Brooks, 1915). Capps believed that the Chisana and Nutzotin Glaciers were once part of a much larger glacier that extended from the White River valley to the Nutzotin Mountains, although broken by a few projecting mountains (Brooks, 1915). These glaciers with their immense erosive power profoundly altered the shape of the land, forming new valleys and drainage patterns. Capps indicated that the gold originated in the pre-glacial stream courses, although, the location of the streams was lost when the glacial action formed the new valleys and stream beds (Ibid.). Theoretically, if the miner could predetermine the old stream bed locations, he could predict the locations of gold as well. Capps included principles that those prospecting in the Gold Hill district might follow:

> Placer gold should be sought only in those places where gold occurs in the bedrock, or where material derived from such gold-bearing bedrock has been brought by streams.
>
> In those areas in which glacial erosion was severe the pre-glacial concentrations of placer gold are likely to have been removed and preserved, but their discovery is likely to result only from thorough prospecting.
>
> In such severely glaciated regions postglacial placers will be present only in those places in which postglacial erosion has been sufficient to form new concentrations of gold, derived either from bedrock from the scattered gold of pre-glacial placers, or from pre-glacial gold-bearing gravels which were not removed by ice erosion. In most places the postglacial erosion of bedrock have been too little to concentrate gold in sufficient quantities to form workable placers, although such a concentration seems to have taken place on Big Eldorado Creek.

> In the Chisana district most of the stream placers have been formed by concentration of gold derived originally from veins in the Carboniferous rocks near intrusive masses, somewhat concentrated in Tertiary gravel deposits and later re-concentrated by streams before the last great period of glaciation. The glaciers scattered the stream concentrations of gold, but the postglacial streams have accomplished a later concentration into the deposits now being mined (Brooks, 1915).

Capps' report suggests that excellent places to prospect were near the intrusive rock or dikes found in the drainages on Gold Hill. It also indicates that the Big Eldorado Creek drainage contains characteristics different from those found in other areas of Gold Hill, while gold found on the Bonanza Creek, Little Eldorado Creek, Skookum Creek and Glacier Basin "is characterized by its smoothed, worn appearance and has apparently been subjected to considerable handling by stream action" (Brooks, 1915). The gold of Big Eldorado Creek, however, was found to be much brighter, more angular and with no evidence of stream wear:

> This gold appears to be a primary concentration, for if it had been much handled by streams its sharp angles and crystalline faces would have been worn away. The gold placer mines on Big Eldorado Creek are all in that portion of its basin that lies entirely within the area of Carboniferous pyroclastic rocks and granitic intrusives and if the angular gold is a primary concentration, its bedrock source must have been in the materials of those rocks or in veins which cut them (Brooks, 1915).

These reports imply that the Big Eldorado Creek drainage had a geological history that was different from the other drainages of Gold Hill. The gold in this drainage was not disturbed or concentrated by the postglacial erosion of streams. This gold appears to originate from pre-glacial gold bearing gravels. Prospecting here would require having deeper shafts and searching in areas with larger gravels and with intrusive rock outcroppings.

4.1.4 The Decline Period (1920-1932)

Geological reports from the Decline Period built on the previous information, but increased the detail. A geological survey report from 1921, (MacKay) discussed the factors that led to the distribution of gold in the placer deposits. Acknowledged was the widely accepted belief that coarse gold did not travel far from its original source and that fine gold could be traced great distances downstream from its source.

In addition, gold rapidly works its way to the bedrock level of stream channel. The movement of coarse gold does not necessarily stop at the bedrock if there are insufficient crevices and projections in bedrock to serve as a lodging place. In the Klondike district, if the paystreak was not found in the bedrock, it was expected to have taken a horizontal movement, lodging on the hillside opposite the area were creek gravels are lean.

The discussion included ore concentration patterns present as a result of variants such as narrow valley bottoms, creek curvatures, islands, boulders, pot holes and grade changes. The same patterns were expected in pre-glacial channels, however, the direction of the glacial ice flows would affect these patterns. Stream channels perpendicular to the glacial flows were affected less than those in the same direction as the glacial flow.

This report encouraged the prospecting miner of the time to investigate already mined areas with increased intensity. In addition, with this information, the miner would probe creek curves, tributary intersections and the benches located across from creek gravel areas with little gold.

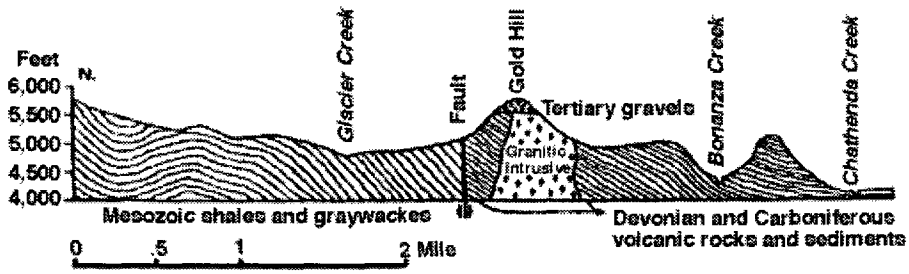


Figure 29. Diagram of the Chisana-Gold Hill area. From: S. R. Capps, The Chisana-White River District, USGS Bulletin No. 630, 1916.

4.1.5 The Recovery Period (1933-1945)

In 1940, J. B. Mertie, Jr. wrote an article, "Placer Gold in Alaska," for the Washington Academy Science Journal in which he noted that "some operators in Alaska failed to recognize the depth to which gold can penetrate in bedrock" and as a result, some mines were being reworked at a good profit (Mertie, 1940). Mertie summarized that he felt that no general hypothesis of placer accumulation could be made (Mertie, 1940). But, he added that miners could be expected to widen their search, looking to the benches for old channel deposits. In addition, there might be a re-searching of the bedrock areas to confirm that the bedrock layers had been completely cleaned.

R. G. Wayland investigated the Chisana-Gold Hill area in 1940 and provided a series of photographs providing insight into that period (1943). He confirmed that the mining in Bonanza Creek was mostly on the benches or old creek channels, which Mertie had expected. Wayland, also felt that there was not a simple explanation of the origins of the ore:

> These channels bear testimony to the complicated history of the glacial retreat and probably are dependent in part on the deposition and removal of gravel deposits that occupied the bottom of the valley from time to time (1943).

4.2 Analysis of Geology as Related to Land Use

Experts thought that gold originated within the alluvial gravels of the cap of Gold Hill. They reportedly found the gold next to the bedrock in alluvial deposits from pre-glacial channels. As a result, original explorations stayed close to the Little Eldorado Creek paystreak. Later exploration simply moved laterally and mined the benches of the previously mined drainages. Late in the Recovery Period, reports indicated that gold penetrated the bedrock to a greater depth than the operators thought. Miners reworked these areas, taking the bedrock to greater depth. Placer mining remained the dominant type of mining in the Chisana mining district during the Recovery Period and mining activities were predominantly in the creeks on Gold Hill.

The "Discovery" claims of each of the creeks represent the original exploration and discovery of gold on that particular creek. The Discovery claim on lower Bonanza Creek for example marked the first discovery of gold on the creek by Nelson. The Discovery claim on Little Eldorado Creek proved to be the most lucrative in the area. In addition, Discovery claims on Gold Run and Big Eldorado creeks demonstrate the pattern of the Exploration Period on Gold Hill. The locations of these historic claims have not retained their identity as discovery claim areas, but as mining areas they contribute to the integrity of the landscape.

Bench mining locations indicate the response to the geologic information of the Recovery Period. Bench mining occurred during other periods but the bench mining that occurred during this period reflects the trend of the period in particular and of the life cycle of a mining area, in general. Bench mining locations from the Recovery Period are evident on Lower Bonanza Creek (NAB-060, isolate #132, isolate #136, NAB-061), the Earl Hirst Hydraulic System Cluster, The Fred Best Camp Cluster, Eikland-Green Camp Cluster, Upper Bonanza Creek (Upper Bonanza Mining Camp Area)and on Gold Run Creek at NAB-068. These character-defining features reveal the human response to the geologic information of the era.

5. Topography

5.1 Spatial Orientation and Topography

The topography surrounding the Chisana-Gold Hill area contributes to its isolation. The Nutzotin Mountains, which comprise the eastern terminus of the Alaska Range, lie northeast of Chisana-Gold Hill. The Wrangell Mountain range crosses diagonally from Northwest to Southeast forming the southwestern skyline of the area. These mountains are extremely rugged, littered with glaciers and contain at least seven peaks reaching over 12,000 feet. The Chisana River divides the valley from north to south and cuts a barrier immediately west of the cultural landscape area. Constantly moving channels, swift waters and silt-laden, icy waters impede crossings.

The natural topography found in the Chisana-Gold Hill Landscape is characterized by rolling, vegetated hills and steep creek canyons. The highest reaches of the landscape form the northeastern boundary of the landscape. This ridge top reaches an elevation of 6500 feet.

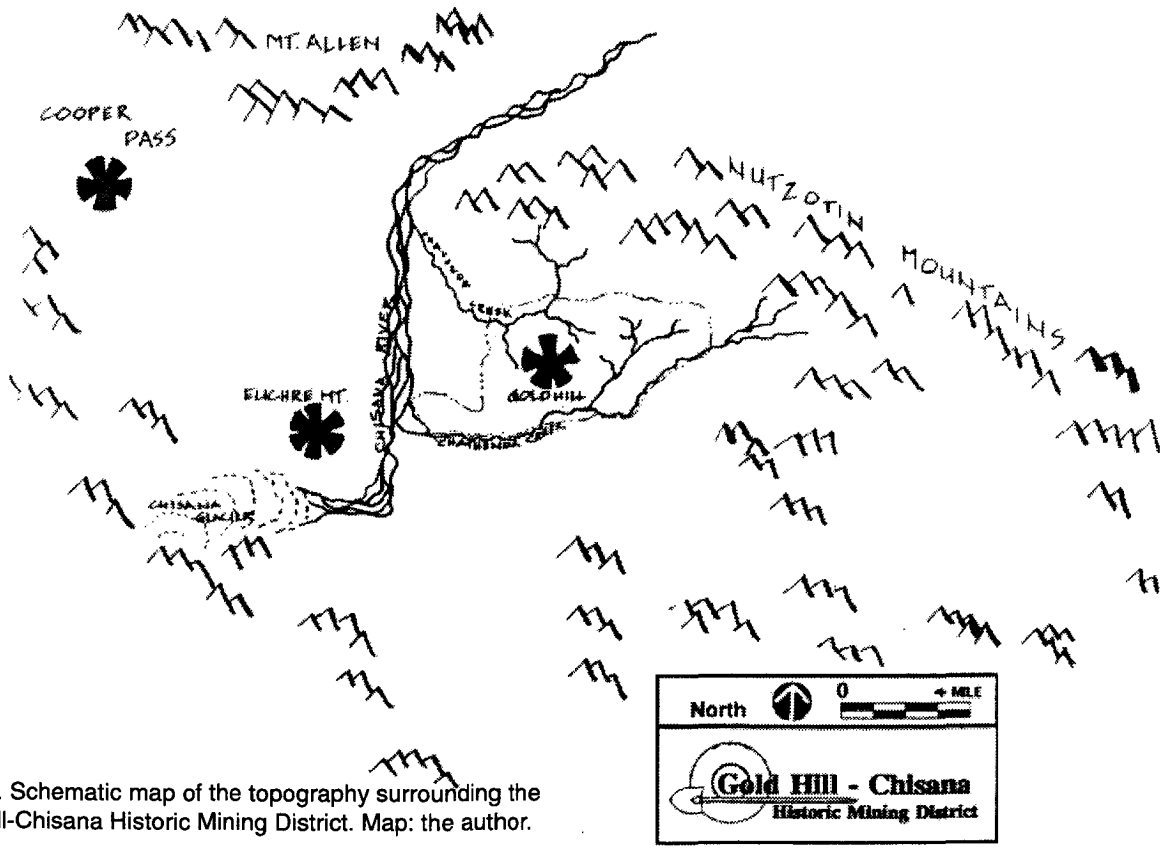
Creeks surround Gold Hill, which reaches to 5940 feet. The lowest reaches of the area are at the western edge at the mouth of Chathenda Creek which is at an elevation of approximately 3200 feet.

5.2 Land Use and Its Impact on Topography

In general, changes in topography caused by mining are significant. "Tailings piles, such as the ones at the Socorro Mines in Catron County, New Mexico, can be important landscape features that contribute to the significance of a mining property" (Noble and Spude, 1992). In this report such topographical modifications are referred to as "landform modifications." [4]

Placer mining is the collection of gold while excavating and transporting gold bearing gravels. The actual moving of gravels from their original place is the principal concern of the miner and often the gold-saving is entirely incidental to the working of the deposit (Gardner and Johnson, 1934). Most placer operations excavate gravels to the bedrock level and require washing of those gravels to recover the gold minerals. In placer mining, washing operations take the smaller and lighter weight materials and wash them downstream. Generally, placer mining greatly disturbs the natural layers of soil in the creek bottoms.

Although detailed contour maps are not available for the periods during or prior to the Stampede Era, one can understand landform modifications from the accounts of the USGS Mineral Investigations of the area. One such account on Bonanza



Map 10. Schematic map of the topography surrounding the Gold Hill-Chisana Historic Mining District. Map: the author.

Claim No. 3 in 1914 noted that:

> Mining was begun at a point six hundred feet below the upper line of claim and progressed during the summer until the upper part of the claim was worked out. The ground mined averaged only twenty feet in width and ranged from two to four feet in depth. Large "bowlders" were very abundant, many of them were too large to move by hand and were not taken from the cut, but the finer gravel was removed from around them (Brooks, et. al., 1915).

Operators worked this 1914 mining operation in the normal manner, from downstream working up the creek. This procedure allowed the washed gravels to be deposited on ground already worked. In this example, miners excavated gravels from the creek twenty feet wide and two to four feet deep. At this location, the miners came across bedrock at a shallow two to four feet and then removed approximately six inches of bedrock, because that was where most of the gold was found. These miners encountered rocks that they moved by hand to a location where they would not have to be handled again. Because the bedrock was shallow, numerous large boulders were not moved, but gravels were removed from beneath them.

Placer mining excavates gravels and other alluviums from one location and re-deposits them to another place. "Stream courses are frequently redirected; the surface and bedrock topography redefined. The size and shape of the excavations and the tailings dumps suggest the scale of the operation and are frequently indicative of specific placer mining methods" (Ritchie, 1981).

Specifically, types of landform modifications found on Gold Hill are those associated with the mining operations: 1) exploration; 2) shoveling-in; 3) ground sluicing; 4) drift mining; 5) hydraulic mining; and 6) bulldozing.

Common prospecting or exploration techniques exhibiting evidence of use on Gold Hill include: test pits; trenching; drifting; shaft sinking; drive pipe sampling using a churn drill machine; and, later bulldozers (Gardner and Johnson, 1934).

Figure 30. Shoveling-in operation on Bonanza Creek, 1914. Note hand stack pile to the left of the flume. Photo courtesy: USGS, Capps collection.

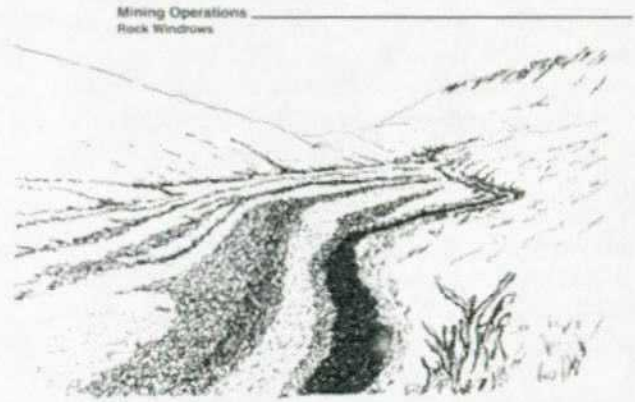


Figure 31. Drawing of the windrows on Skookum Creek. Windrows are evidence of shoveling-in or ground sluicing. Drawing: the author.

Figure 32. Stacked rock on Lower Bonanza Creek, 1995. Stacked rock is evidence of shoveling-in or ground sluicing. Photo: the author.

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[4] Some scholars have referred to mining related topographical changes as 'landscape modifications' (Hovis, 1990.) This is true under limited definitions of 'landscape.' To other scholars, landscape and nature are not considered synonymous (Yi-Fu Tuan, 1974; Meinig, 1979; Bourassa, 1991.) A landscape under other definitions could include man-made or natural features. Buildings, structures, objects, etc. could then be perceived as 'landscape modifications.'

Exploration landform indications found on Gold Hill include: shallow excavations made to test the subsurface gravels; open cuts representative of trenching techniques; tunnels and pits from drift mining operations; cribbed shafts used in shaft sinking operations; churn drill holes from drive pipe sampling; washed banks from hydraulic test operations; and, bulldozer scrapes (Hovis, 1990; Gardner and Johnson, 1934).

In the mining technique known as shoveling-in, gravels were hand dug and shoveled into sluice boxes. Sluice boxes lined up end to end and extended to where the tailings would be out of the way of future mining operations. On one or both sides of the sluice boxes a pit was dug to bedrock only wide enough to comfortably shovel into the boxes (usually twelve feet). Water ran through the boxes taking the dirt to the lower location. Work usually began at one edge of the deposit and proceeded across it by regular cuts. Rocks too large for the sluice boxes were stacked out of the way. After the first cut, operators threw the boulders and rocks onto the cleaned-up bedrock. Occasionally, they stacked rocks at the lower end of the operation. Landform indications of shoveling-in mining techniques include windrows of rocks which run parallel to the sluice boxes (and most often parallel to the water course)and stacks of dry stone walls which were used in narrow stream beds to dispose of the rocks (Gardner and Johnson, 1934).

The ground sluicing mining method excavates stream gravels with narrow streams of running water that were not under hydraulic pressure. Work usually began at one edge of the deposit and proceeded across it by regular cuts. Operators hand piled oversize rocks that were not moved by the water into one of the following landform configurations: windrows parallel to the water channel; dry walls stacked at the edge of the stream; or, rock piles at the lower end of the work (Ibid.).

Drift mining was the winter mining technique used on Gold Hill. In winter, prospectors dug the gravels from the shaft and hoisted these gravels to the surface. Later, during the spring and summer months, they sluiced these gravels.

The landform indications associated with drift mining are often hard to read. Shafts and audits usually collapse once they are abandoned. Evidence that gravels were washed in quantities is helpful in identifying a collapsed shaft from drift mining (Hovis, 1990; Gardner and Johnson, 1934).

Hydraulic mining techniques use water under pressure to excavate gravels. Large nozzles or giants direct the water to the area of gold bearing gravels. The series of wing dams direct the water/ gravel flow into the sluice boxes. The landform feature most often identified with the hydraulic mining technique is the area where the gravels were excavated, or the mining pit. The pit can vary greatly (Hovis, 1990). Pits found in the Gold Hill mining district are most often positioned in high benches located in the existing stream channels. Tailings piles from the lower end of the sluice boxes are frequently conical in shape and regularly spaced throughout the pit (Hovis, 1990). Miners washed boulders through the sluice boxes but those too large to be moved with high water pressure were broken up with hammers or blasting.

Bulldozer technology enabled extensive landform excavation. This type of earth moving operation moved massive amounts of earth leaving areas stripped of overburden and other areas where the bulldozers dumped the debris.

The contribution of water supply systems associated with all types of placer mining also resulted in landform modifications. Miners used ditches to acquire additional water or divert water around a shoveling-in operation. Some of these ditches reached for miles in the landscape.

5.3 Analysis of Topography of Chisana-Gold Hill

Mountain ranges form the edges of the Chisana-Gold Hill Landscape on three sides. Gold Hill is the center of this landscape and the apex from which the creeks radiate.

Conditions in the creek canyons were rugged. Since most of the mining (other than exploration) was done within creeks, these rugged circumstances required the miners to have tenacity. The spatial organization of the mining camp reflects this tenacity. Structures took on unlikely characteristics, such as being erected in precarious locations, reflecting the creative determination of these miners.

In the Boom Period years, the rugged canyon topography required mining techniques that took the fast flowing creek waters around the mining areas. Ironically, these fast flowing waters were necessary for hydraulic mining techniques in the Decline and Recovery Periods. These canyon terrain techniques for controlling water were found on the lower Bonanza Creek, lower Glacier Creek and lower Big Eldorado Creek.

Areas with gentler slopes include the upper creeks such as upper Bonanza Creek, Little Eldorado Creek, Coarse Money Creek, Canyon Creek, Gold Run Creek, Shamrock Creek, Paulson Creek, Sargent Creek, Chicken Creek, upper Glacier Creek, Discovery Pup Creek, Alder Gulch, Dry Gulch, Red

Hill Creek and upper Big Eldorado Creek. Water flow is gentler in these topographical areas and often not sufficient for sluicing. Here, miners used dams to reservoir the water for sudden release, creating the water force necessary to sluice.

All parts of the natural topography of this landscape contribute to the integrity of setting and integrity of association. In other words, the changes in landform indicate the type of mining that occurred, important information in understanding the mining landscape. In nearly all instances, the resulting landform alterations around Gold Hill have integrity of association.

Topography shaped by manmade (mining) forces reflect the original topographic conditions encountered by miners during the various periods. These results include exploration pits (hand dug and machine dug,) drift pits, windrows, stacked rocks and hydraulic pits. Exploration test pits are found at Bonanza City, with six on Bonanza Creek between Bonanza City and the mouth of Little Eldorado Creek, two on Canyon Creek, one at the mouth of Glacier Creek, two on upper Glacier Creek, one on Gold Run Creek, two on Poorman Creek, eleven on Big Eldorado Creek and four on Little Eldorado Creek. In addition, other test pits probably have not been recorded. These unrecorded test pit areas warrant further research.

The only recorded hand dug exploration trench is found on upper Big Eldorado Creek. Historic reports indicate hand trenches at other locations such as Chicken Creek Nos. 3 and 4.

Exploration bulldozer cuts are found on upper Bonanza Creek, Big Eldorado Creek and on Gold Run Creek. Historic references indicate bulldozer equipment in the Chisana district during the late Recovery Period, however, the age of these exploration cuts have not been determined.

Drift pits which were used both in winter mining and in exploration mining, are found on upper Bonanza Creek, Coarse Money Creek, one at the mouth of Glacier Creek, four on Gold Run Creek, five on Big Eldorado Creek, two at Alder Gulch, three on Little Eldorado Creek and one on Skookum Creek. Historic reports identify others at the mouth of Dry Gulch and on historic Bonanza No. 18. These areas warrant further research.

Windrows of rocks and stacked rocks are indicative landforms of shoveling-in and ground sluicing techniques. Four windrows are found on lower Bonanza Creek, one on upper Bonanza Creek, one on Gold Run Creek, three on Big Eldorado Creek, one at the mouth of Little Eldorado Creek and an easily "readable" windrow land modification on Skookum Creek.

Three stacked rock formations are found on the lower Bonanza Creek, two on upper Bonanza Creek, three on Glacier Creek, four on Gold Run Creek, twelve on Big Eldorado Creek, one on Skookum Creek and one on Little Eldorado Creek. Two rock piles indicative of being deposited at the lower end of a shoveling-in operation are located on Gold Run Creek.

An unusual conical type rock pile is located on Gold Run Creek. This rock pile warrants further research.

Hydraulic pits indicative of the hydraulic mining operation can be found on Gold Hill. Four are on the lower Bonanza Creek and one on upper Bonanza Creek.

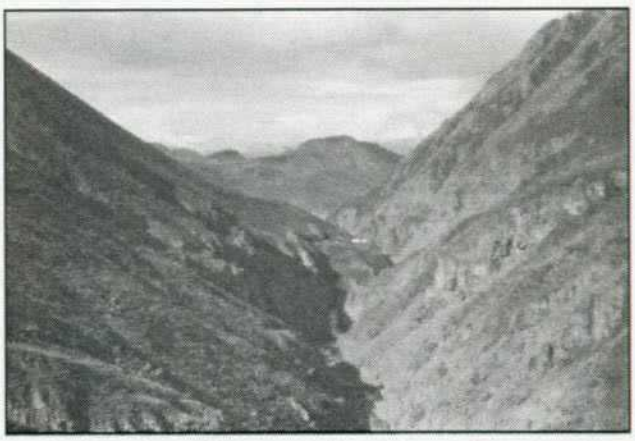


Figure 33. Rugged topography of lower Bonanza Creek, 1914. Photo courtesy: USGS, Capps collection.

Figure 34. Gold Run Creek was diverted to direct water to the mining site, NAB-068, 1995. Photo: the author.

6. Mining Infrastructure

6.1 Introduction

Placer mining infrastructure played an important role in this historical landscape, because placer mining required harnessing water to carry out the mining process. For the most part, the creeks supplied water for mining in the Gold Hill mining district. The creeks, however, varied in volume and velocity of water.

> Structures associated with water acquisition for placer mining involve water impoundment, diversion and supply systems. . . Containment, wing and boomer dams; ditches, flumes and penstocks (pipelines) with their associated head gates, trash weirs, turnouts, regulators and head boxes; as well as the subsidiary systems of ditches, pipes, flumes and hoses distributing water from the primary supply to the various parts of the workings (Hovis, 1990).

These structures and objects formed the infrastructure that manipulated the location of water flow, the velocity of water and the volume of water.

Construction of dams and water acquisition structures varied as to the mining type associated with them. Dams consisted of containment dams, wing dams and boomer dams (also referred to as automatic or splash dams). Figure 37 on page 75 shows some prevalent types of dams and their use in the Chisana-Gold Hill Landscape. Examples of flumes in the Chisana-Gold Hill Landscape are shown in figures 35, 36 and 38. The flume trellis drawing shown in figure 38 is an impressive example of these water acquisition systems. Turnouts, regulators and head boxes served as valves from the flumes.

Pipelines (also called penstocks) were another possible component of the water acquisition systems. These metal pipes varied in size and in construction which also is used to determine the age of the pipe stock. In this landscape, miners probably did not bring the metal piping into the district until the Recovery Period when transportation into the area was easier.

Figure 35. Flume and dam on Coarse Money Creek, 1995. Photo: the author.

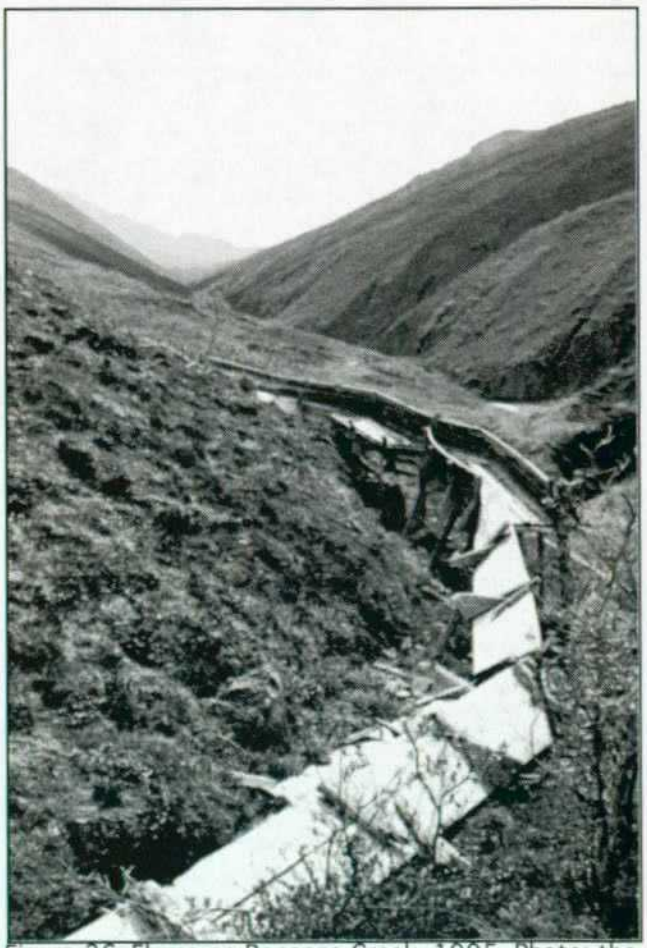
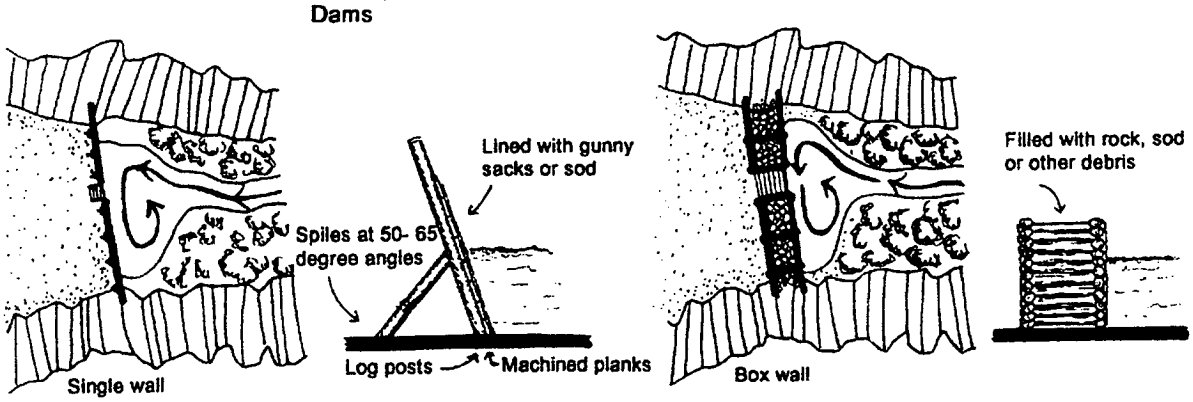


Figure 36. Flume on Bonanza Creek, 1995. Photo: the author.

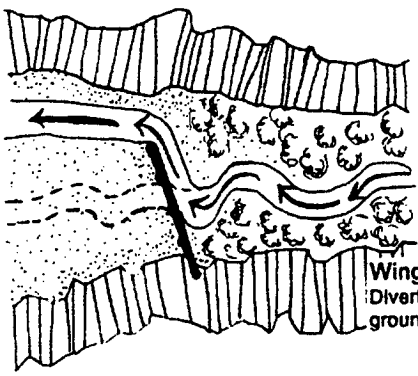
Mining Operations

Dams

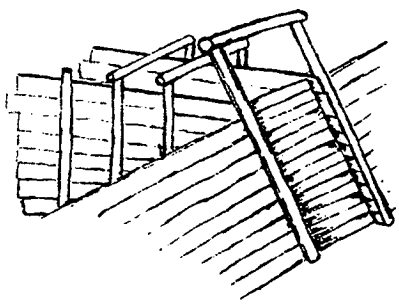


Construction types

1. Dams utilized rock outcroppings, whenever possible, to stabilize the ends.

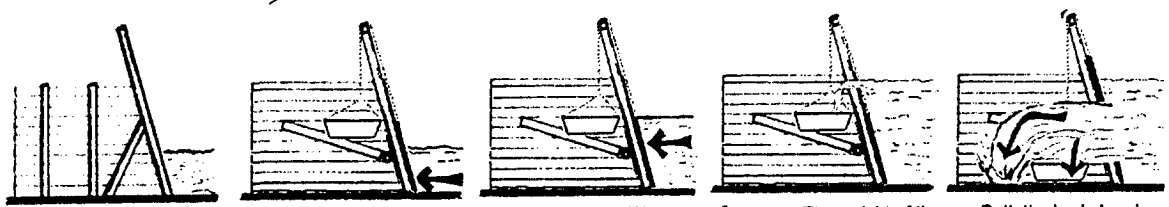


Wing Dam
Diverts the creek to a ground sluice operation.



Boomer Dam

1. Useful where water sources are limited.
2. Used to remove overburden and in ground sluicing operations.
3. Different types of automatic opening mechanisms are used, the example was most commonly used at Gold Hill.



The opening of the gate releases a flash flood that falls on the deck built to keep the rush of water from under cutting the dam. The resulting sound is the 'boom.'

Chisana - Gold Hill
Historic Mining District

Figure 37. Mining Operations, Dams. Drawings: the author.

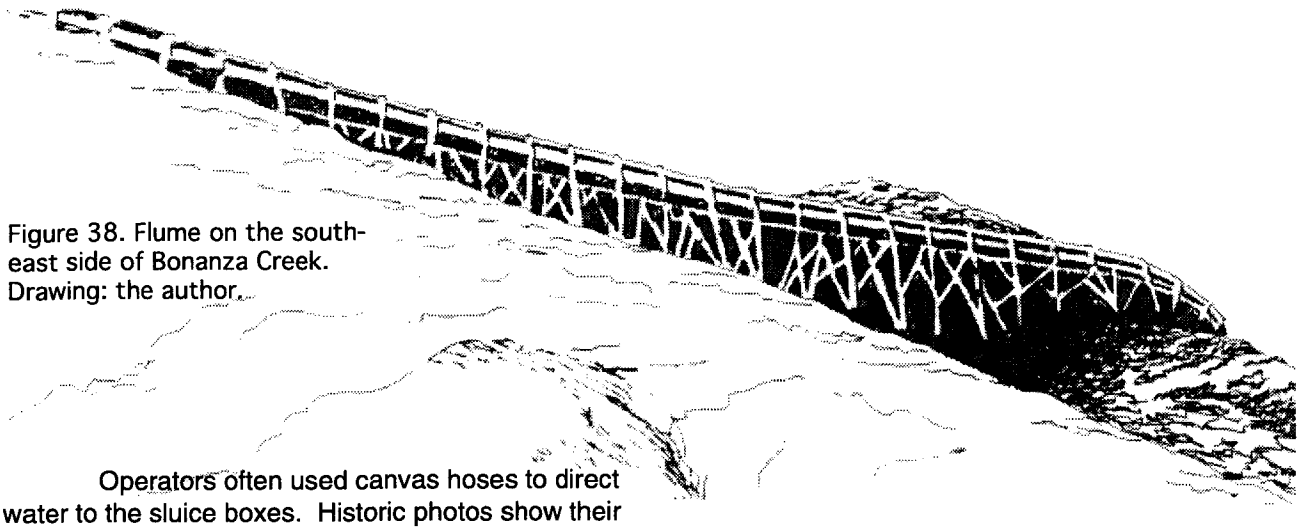


Figure 38. Flume on the south-east side of Bonanza Creek. Drawing: the author.

Operators often used canvas hoses to direct water to the sluice boxes. Historic photos show their use in many shoveling-in operations (see figures 22 and 30).

Normally on Gold Hill, ditches were small but followed the Alaskan norm for ditches. Side slopes of forty five to sixty five degrees were common and most were sod lined or bare soils. Flumes were used alternatively with ditches in many cases. Together, dams, flumes, ditches, regulators, turnouts, pipelines, hoses and ditches formed an infrastructure that manipulated the location, velocity and volume of water.

6.1.1 The Exploration Period (1910-1913)

Accounts indicated that prospectors in 1913 limited their exploration efforts to placer mining and used the existing creeks for water.

> . . . the gravels do not seem to be favorable to underground mining, hence probably no great amount of prospecting was accomplished in the winter. The coming summer will undoubtedly witness more thorough prospecting of the known placers and a further search for other gold-bearing areas (Brooks, 1914).

The next year, the mineral resource findings reported prospecting throughout the district. They reported mainly prospect holes and ditches, but also spoke of drift mining shafts at Alder Gulch and upper Dry Gulch (Capps, 1915).

These early exploration techniques focused on panning the existing streams. Drift mining shafts thawed frozen ground by using small amounts of water for portable boilers and steam points. Water was used, however, for sluicing the drift mine tailings. If miners drift mined during the winter months, they sluiced tailings in the spring after the creek thawed.

6.1.2 The Stampede and Boom Periods (1913-1919)

Initially, mining consisted of panning and ground sluicing, with the existing water channels supplying water for the mining operations. Capps (1915) cited numerous accounts of shoveling-in and ground sluicing used in the Chisana mining district as early as the 1914 mining season. During the Boom Era, ground sluicing, booming and shoveling-in operations prevailed. All these operations required manipulation of the water channels.

Operators constructed flumes and ditches to bring additional water to the mining sites. James and Nelson constructed a water supply infrastructure consisting of a ditch line, a splash dam (boomer dam) on Coarse Money Creek, a flume line one thousand feet long and a flume bridge that provided water to Bonanza No. 9. They later extended the flume line to Bonanza Nos. 6 and 4.

Skookum Creek lacked the water necessary to sluice the fourteen feet thick overburden. In 1914, operators constructed a ditch and flume line to the head of Little Eldorado Creek. Gold Run Creek also needed additional water flow. Operators constructed a half mile long ditch to the upper part of Discovery Pup in order to provide additional water for sluicing.

Workers rerouted creek channels in order to work the areas beneath the natural channel. In the lower Bonanza Creek canyon, operators diverted the creek through flumes, ditches and diversion dams around the sluicing area. In 1914, miners on Bonanza No. 2 diverted the creek to one side and used canvas hoses to take the water from the diversion dam to the sluice boxes. On Bonanza No. 3, the same year, a three-hundred-feet-long flume diverted the water around the mining area. Another flume on

Bonanza No. 3A also carried the water past the pick and shovel area. In other words, there was too much water in these canyon areas.

Automatic dams or boomer dams controlled the water velocity at the mining site. In 1914, Poorman Creek miners constructed two dams to store water and then released the water intermittently to sluice the area. In 1916, Nelson installed a hydraulic mining operation on Bonanza Creek but failed operate the operation because they lacked water for the operation (Brooks, 1918). Operators used an elaborate boomer dam on Bonanza No. 5 in 1919. There was not enough water velocity to sluice the areas.

6.1.3 The Decline Period (1920-1932)

Basically the same types of mining used in the Boom Era were used during the Decline Period. Water shortages plagued the area and water acquisition became a high priority. These water shortages limited the use of hydraulic mining techniques, although the technology was available.

During this period miners increased the size of their water acquisition infrastructure to compensate for the shortage of water. The operators collected water from a new source by constructing ditch systems to drain the moist Alpine tundra hillside. Some developed a ditch parallel to Canyon Creek to drain the area. The water collection system on Big Eldorado Creek consisted of a dam and ditches draining the hillside.

Automatic or boomer dams were used extensively because of water shortages. In 1921, operators ground sluiced on Bonanza Nos. 4 and 6 using automatic dams to remove the overburden. During other years the lowest Bonanza Creek claims had excessive water for sluicing. However, in 1931, state geologists reported that James employed an automatic dam on the Bonanza Discovery claim for ground sluicing. During the same year, workers put to use a splash-dam (boomer dam) on Bonanza No. 11 in order to ground sluice. Even with a boomer dam, the lack of water hampered mining operations on Gold Run No. 1 Above during the summer of 1930.

6.1.4 The Recovery Period (1933-1945)

Mining types of this period include shoveling-in, ground sluicing, booming, hydraulic mining and finally the use of a bulldozers. Hydraulic mining characterizes the mining technology of the period, however.

Water limitations hampered the early use of hydraulic mining techniques on Gold Hill. Hydraulic technology was available, but Gold Hill miners neglected to use the technique extensively at until 1936.

Extensive water supply systems were needed to facilitate this type of mining. At Gold Hill extended flume systems were built during this period (Smith, 1937). During the 1934-1935 seasons, Nelson built a ditch and flume system that started about a half mile below the confluence with Coarse Money Creek and extended downstream past the mouth of Little Eldorado Creek to his claim on Bonanza No. 5 (Smith, No. 868, 1937; Peterson, 1977).

During the 1939-1940 mining seasons, Earl Hirst diverted water from the upper end of the claim, Bonanza No. 2 and transported it to this hydraulic operation via an elaborate wooden flume (Wayland, 1943). On Bonanza No. 3, Greene operated another hydraulic operation. He obtained his water form a gulch to the west of Bonanza Creek using an inverted siphon to bring it to his hydraulic pit (Wayland, 1943).

Operators used boomer dams for the shoveling-in and ground sluicing operations. The Peterson brothers operated the only known boomer dam in the district during this period on Big Eldorado Creek in 1936, although others probably existed.

6.2 Analysis of Mining Infrastructure

Mining technology varies throughout the historic periods and infrastructure has changed accordingly, specifically, the mining infrastructure which acquires and controls water. As noted earlier, placer mining requires water to carry out the mining process. The dams, flumes, ditches, regulators, turnouts, pipelines, hoses and ditches which result from this process form an infrastructure which manipulates the location of water flow, the velocity of water and the volume of water.

Many of the historic hydraulic infrastructure systems remain in varying conditions on Gold Hill. During the Boom Era (1915), James and Nelson constructed a boomer dam on Coarse Money Creek, a flume line one-thousand-feet long and a ditch line for hydraulic mining on Bonanza No. 9. At the time, Bonanza Creek claims Nos. 4, 5 and 6 were being operated by the Hamshaw organization. Shortly after, when James, Nelson, Wales and Johnson retrieved their claims from Hamshaw, they extended the water system with a ditch on the northwest side of the creek. The system crossed Bonanza Creek on the upper limits of No. 6 and continued down to Bonanza No. 4. A shortage of water hampered operations in 1916, however and the miners were not able to

operate the hydraulic operation (Brooks et. al., 1918).

This system remains intact (NAB-064), particularly the 1915 portion that includes the dam and flume on Coarse Money Creek. Recent ATV travel has destroyed the ditch line between Bonanza No. 6 and 9. 1930's miners reused or re-built the older water infrastructure below Bonanza No. 6 for another water system.

A ditch and flume line constructed to provide water for the 1914 Skookum Creek operations extended to the head of Little Eldorado Creek. The ditch and supports that held the flume line remain. Taller vegetation along the water route aid in identifying the system's location. Nothing remains of the connecting dam on Little Eldorado Creek or a connection directly identifying the sluicing area on Skookum Creek.

A ditch line starting at the upper reaches of Discovery Pup and traveling for a half mile in a southeasterly direction to Gold Run No. 1 Above is referenced in the literature. However, no current documentation identifies the ditch line on the ground. Documentation of this ditch line warrants further investigation.

No legible remnants are found of the flumes used to divert the creek in the lower Bonanza Creek canyon. Most likely flooding has destroyed these flumes.

The Canyon Creek Water Supply system (NAB-090)—determined to be of the Recovery Period by archeologists—has no reference in historical reports. This system incorporated pond collection areas as well as the familiar components such as, ditch segments, flume remnants and a headbox.

Nelson built a ditch and flume system (NAB-059) in 1934-1935 that originated at a dam at Castle Rock and extended downstream to his claim on Bonanza No. 5. This flume included an impressive trestle along the creek's steep slopes. Much of this flume system remains. Regulator boxes and spillways also are included in this water supply system. Parts of this system covered or reused the earlier Coarse Money system (NAB-064).

Many other water collection systems consisting of ditches, dams and other components are found on Gold Hill. No specific historical references have been found to pinpoint their exact use.

In 1919, Billy James and Ole Farstvedt built an elaborate boomer dam on Bonanza No. 5. Located at the upper limit of the projected Bonanza No. 5 claim, the remains can be found of a boomer dam remnant (isolate no. 139) that probably was built by James and Farstvedt. Archeologists who surveyed the site gave the remnant an origin date of approximately 1914-1919 (verbal communications with Logan Hovis, Feb. 19-21, 1997). No other associated components to this boomer system are evident.

Two automatic dams operated on Poorman Creek in 1914. No archeological documentation identifies the location of these boomer dams so it is assumed that they no longer exist. Also, nothing remains of a boomer dam referenced in historical reports found on Gold Run No. 1 Above.

Historic reports indicate a boomer dam on Bonanza No. 11 being used in the 1931 season. Remnants of a dam remain in the area, but they are not enough intact to determine their type and age. (Please refer to the following Appendix III for a complete listing of Mining Infrastructure elements found in the Chisana-Gold Hill Landscape.)

7. Cluster Arrangements

7.1 Introduction

Cluster arrangements in the Chisana-Gold Hill Landscape are associated with mining operations, mining habitation and supply centers. A placer mining operation does not operate from a single building or structure but rather, requires a "system" of features to execute the operation. These systems are clusters of structures and objects that collectively perform a task or operation. The type of mining operation being carried out and the topography are among factors which determine the clustered components and the spatial arrangements.

Mining camps are the collection of buildings associated with mining operations. These camps generally retain close proximity to the mining operations or are intregal to the mining operation. The clustering of these structures in the Chisana-Gold Hill Landscape is typical of clustering found in other mining landscapes.

The following chapter identifies mining and habitation clusters in this landscape. These cluster have been identified by present day researchers who determined associations based on location and identification. The cluster names are based on historic references if possible, but are named at the time this report was written.

7.2 Cluster Arrangements Associated with Mining Operations

The types of mining found on Gold Hill which lend themselves to the cluster arrangement pattern are:

1) Placer mining operations associated with prospecting and exploration;

2) Placer mining operations associated with drift mining;

3) Placer mining operations associated with ground sluicing;

4) Placer mining operations associated with booming;

5) Placer mining operations associated with shoveling-in; and,

6) Placer mining operations associated with hydraulic mining.

7.2.1 Placer Mining Associated with Prospecting and Exploration

Prospecting and exploration methods are mining operations that determine the availability of gold in specific areas. Many methods of sampling are available, including the simple panning of gravel from natural exposures, drifting, test-pitting or trenching, shaft-sinking and churn drilling (Gardner and Johnson, 1934). Remnants of all these methods have been found on Gold Hill.

Drift mining is a method of prospecting and also is a winter mining method. (Refer to section 7.2.2 where drifting is discussed as a winter mining method.)

The tools used in the panning method of prospecting include the pan, pick and shovel, which are frequently supplemented with a short section of sluice or a rocker (Hovis, 1990). These items usually are found in close proximity to each other.

Test-pitting and trenching methods are used for shallow gravels from where dirt could be thrown by hand. Prospectors would excavate these pits to bedrock. The rectangular test pit shafts usually measured three-by-four to four-by-six feet in size. Shafts are "cribbed" or supported where necessary (Gardner and Johnson, 1934). Near locations where prospectors sunk test shafts, wooden sinking buckets and windlasses can be present. Winter prospecting and test pits in frozen ground involved small, portable boilers and steam points, sweaters, hose, small diameter pipe and a variety of pipe fittings and pipe fitters' tools (Hovis, 1990). The boilers, buckets, windlass and steam points usually are nearby the pit, while other tools; pipe, fitters' tools and fittings, can be found at the habitation site rather than the test pit location.

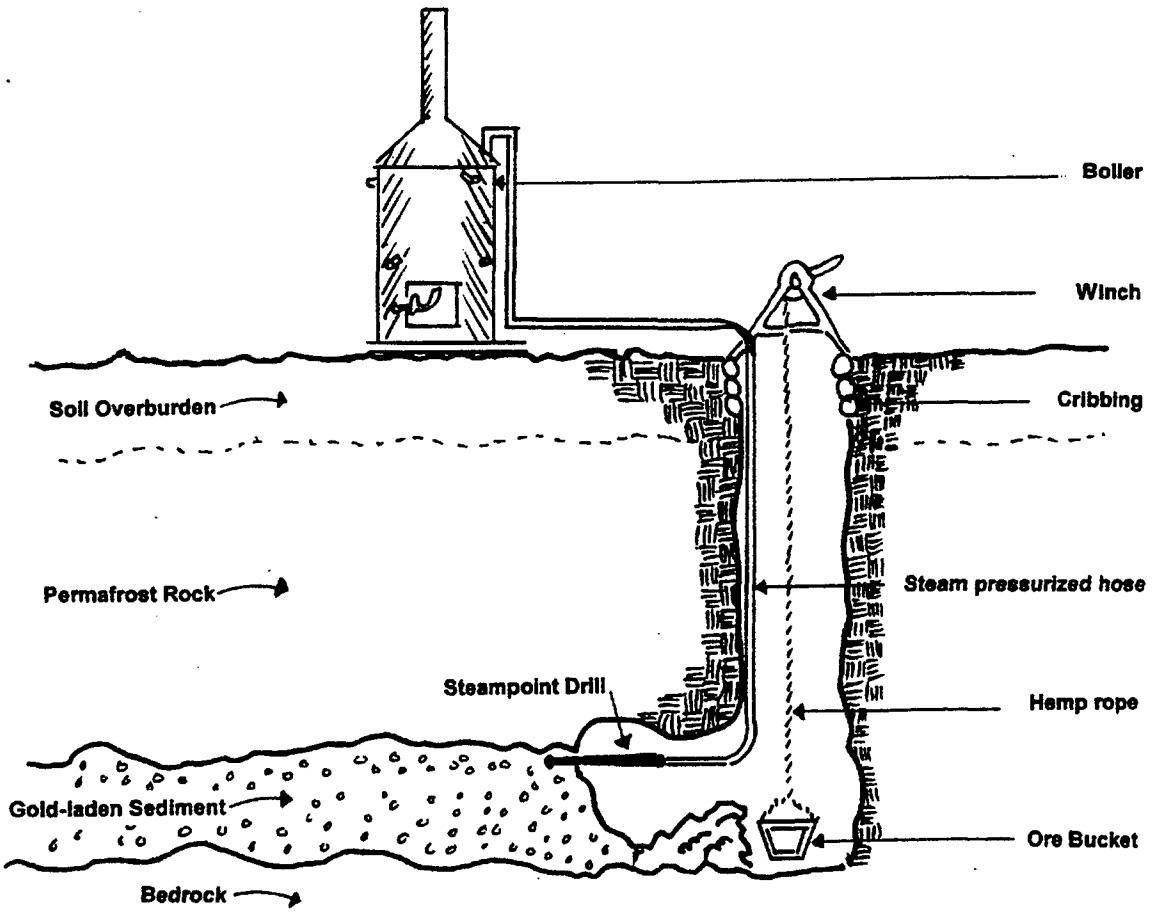
Churn drilling is a method of drive-pipe sampling. Keystone churn drill machines similar to those found in California are found on Gold Hill. Drill casings are six inches in diameter, leaving drill holes seven and a half inches in diameter in the ground (Gardner and Johnson, 1934). If prospectors systematically tested an area with a churn drill, the drill or some associated tools can be present; otherwise, the major evidence will be the occasional drill hole casing stuck in the ground and un-recovered (Hovis, 1990).

The following prospect mining cluster arrangements have been identified in the Chisana-Gold Hill Landscape. As stated above, the names given to these cluster arrangements are contemporary and should not be considered historic nomenclature. In addition, single isolates that are not part of a cluster, indicate that these types of mining existed at other locations in the landscape.

Canyon Creek Prospect Cluster, (undated), Canyon Creek. Components which indicate the test pit method of prospect mining include two prospect pits, a rocker box and sluice remnants.

Snow gulch Exploration Cluster, 1930s, Snow Gulch

Mining Operations
Drift Mining



Drift Mining

1. **Drifting is a common method of prospecting a deep placer deposit when conditions are favorable.**
2. **Shafts are lined with cribbing to keep the hole from collapsing.**
3. **Steam loosens the frozen sediments and allows the miner to remove them.**
4. **Once the ore is brought to the surface via the ore bucket, it is washed and sluiced to extract the gold.**

Chisana - Gold Hill
Historic Mining District

Figure 39. Mining Operations, Drift Mining. Original in NPS files. Re-drawn: the author.

Creek. Components that indicate the test pit method of prospect mining include three characteristic test pits, a rocker box, a ditch line, boiler and drift pit locations.

Upper Glacier Creek Prospect Cluster, 1918, Glacier Creek. Components which indicate the test pit method of prospect mining include a prospect pit, only. Nearby habitation components include: a stone cache or cairn, lumber scatter from a tent frame and trash scatter.

Big Eldorado Prospect Cluster, 1913-1919, Big Eldorado Creek. Components which indicate the test pit method of prospect mining include prospect pits, posts for cribbing and a diversion ditch, that might have brought water to the site to sluice the test gravels. The ditch might also have been a test trench rather than a diversion ditch. More investigation is suggested.

NAB- 067, 1930s, Gold Run Creek. This site has a component which indicates churn drilling. The churn drill located here is an isolated object, however, and there are no other associated components to define it as an operation at that location.

7.2.2 Placer Mining Operations Associated with Drift Mining

Drift mining consists of working buried strata of gold bearing gravels by underground methods. The operator hoists the excavated material to the surface and washes it in sluice boxes or treats it in other gold-saving devices (Gardner and Johnson, 1934).

The cluster arrangement of a Gold Hill drift mine operation is typical of that shown in figure 39. The following description spells out the components of this type of mining operation.

> Hoisting equipment, either hand or mechanical, is the best physical indicator, but care must be taken to differentiate between drift mining shafts and test pits.....Thawing equipment — boiler, steam points, sweaters and pipe fittings —is often present in Alaska but it is not necessarily diagnostic since frozen ground was a common occurrence in many types of northern placer mining (Hovis, 1990).

Drift miners most often used a windlass as the hoisting equipment to lift dirt from the pit in the Gold Hill district. In this mining operation, operators cut vertical shafts that reached to bedrock, then cut laterally along the bedrock. The drift pit contrasts the test pit since the test pit is normally not as deep, nor would it take a lateral direction. The following drift mining clusters have been identified in the Chisana-Gold Hill Landscape. In addition, single isolates that are not part of a cluster, indicate that drift mining existed at other locations in the landscape.

Upper Bonanza Habitation and Drift Mining Cluster, (undated) Upper Bonanza Creek. Components that indicate drift mining are a characteristic drift pit, a shovel, a pit and ditches that might have taken surface water away from the drift pit or brought water to sluice the gravels from the pit. Nearby mining related components include sled remains, fuel tins and tailings from a bulldozer cut.

Drift Mining Camp Cluster , Mid 1920s, Chavolda Creek. A characteristic drift pit indicates that drift mining was used here. Nearby habitation and prospect components include a log cabin, dog houses, outhouses, a stove, a collapsed audit, associated artifacts and a prospect pit.

Skookum Creek Drift Mining Cluster, (undated) Skookum Creek. Components that indicate that drift mining was used are a characteristic drift pit and dump boxes.

Snow gulch Exploration Cluster, 1930s, Snow Gulch Creek. Components that indicate that drift mining was used include three characteristic test pits, a rocker box, a ditch line, boiler and drift pit locations.

Big Eldorado Drift Mining Cluster, 1920-1940, Big Eldorado Creek. Components that indicate that drift mining was used are a characteristic platform and windlass with frame.

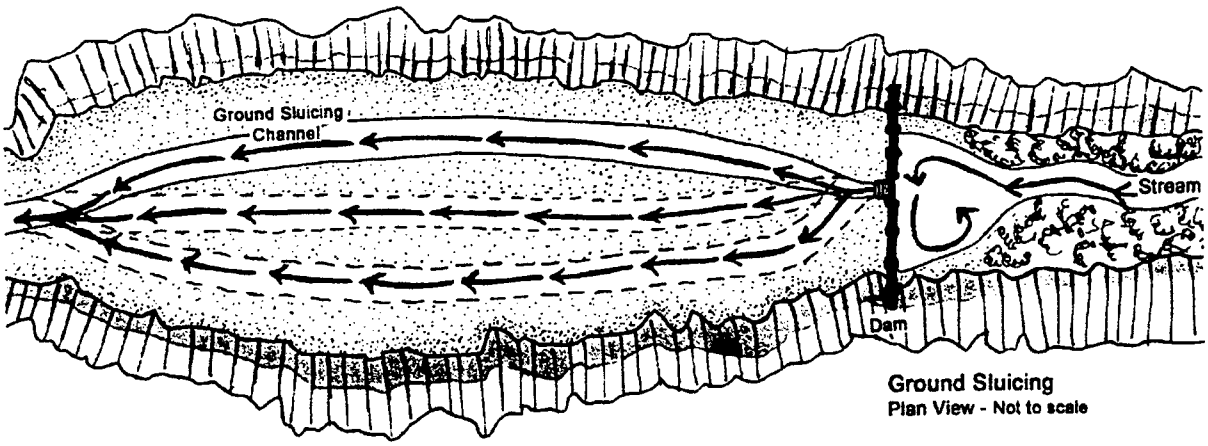
Upper Big Eldorado Drift Mining Cluster, 1913-1919, Big Eldorado Creek. Components that indicate that drift mining was used are a characteristic windlass, wood scatter, a wheelbarrow, a galvanized tub and sluice boxes.

Dipples Mining Camp Cluster, 1913 and 1940s, Gold Run Creek. Components that indicate that drift mining was used are two characteristic drift pits, a ditch, a portable boiler, wood buckets, a windlass, a dump box and rock wing dam. Nearby habitation and prospecting components include a cabin, an outhouse, a skid shack, a shed, two doghouses, a tent frame, a blacksmith shop, buried cans and other scattered artifacts.

NAB-043 Cluster, (undated) Alder Gulch. Characteristic drift pits indicates that drift mining was used here. Additional components probably exist, but more information is required from archeological files.

NAB-085 Cluster, (undated) Alder Gulch. Characteristic drift pits indicates that drift mining was used here. Additional components probably exist, but more information is required from archeological files.

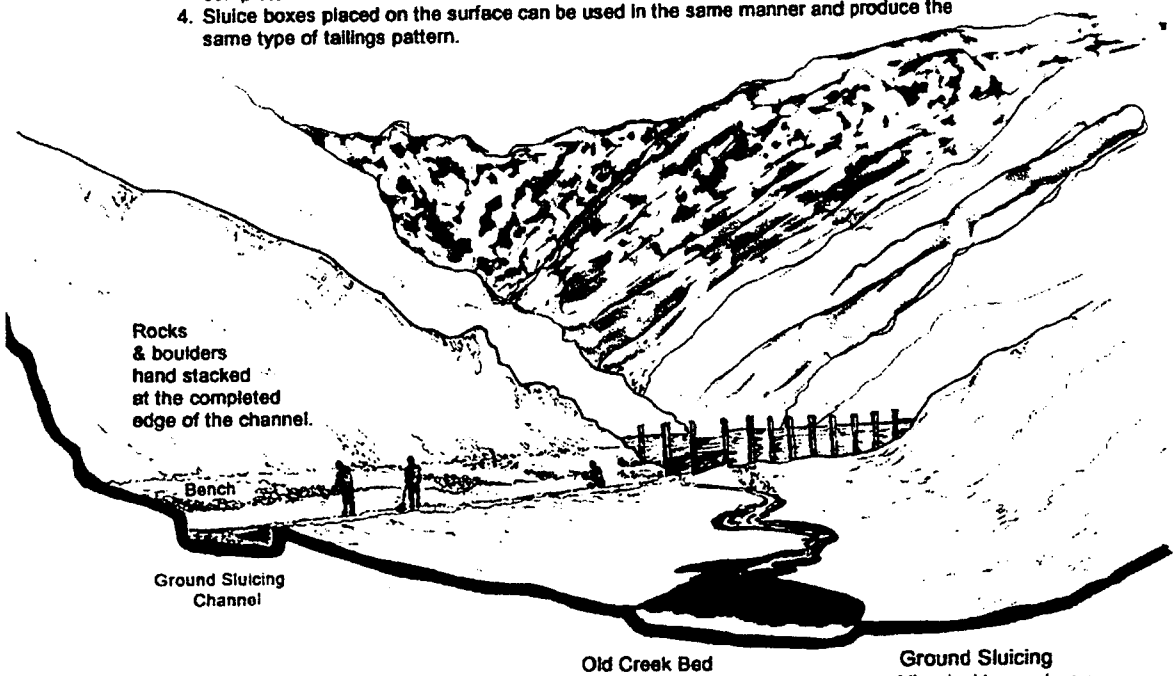
Mining Operations
Ground Sluicing



Ground Sluicing
Plan View - Not to scale

Ground Sluicing

1. Requires steeper grades than for removal of overburden.
2. Works best on the benches and upper reaches of the creeks.
3. The operators move the ground sluicing channel to a parallel position when the area is completed. This creates a wind-row pattern of tailings.
4. Sluice boxes placed on the surface can be used in the same manner and produce the same type of tailings pattern.



Ground Sluicing
View looking upstream

Gravel at the bottom of channel acts as a natural riffle. Ground sluicing can be taken to bed rock, if bedrock is rough and slabby to form a natural riffle.

Excess water carried past the site via the old creek bed, ditch, or by flume.

Figure 40. Mining Operations, Ground Sluicing. Drawing: the author.

7.2.3 Placer Mining Operations Associated with Ground Sluicing

Ground sluicing is a placer mining method in which miners excavate gravels by using running water that is not under hydraulic pressure. Hand work or a jet of water under pressure can augment the action of the ground sluice water. However, if hydraulic monitors perform most of the work, the method becomes hydraulicking (Gardner and Johnson, 1934).

Ground sluicing removes much of the gravel, leaving the balance to be finely worked by shoveling-in (Wimmler, 1927). Operators moved boulders by hand, or blasted the large ones. They tossed smaller stones free of the pit to the side where sluicing started (Gardner and Johnson, 1934).

In some ground sluicing operations, the miners stored water in reservoirs to increase flows. When the water is discharged for short periods, the mining method is generally known as "booming". Booming is described as a cluster type in the next section.

The cluster arrangement formed by ground sluicing is typical of that shown in the plan view in figure 40. Tools and components associated with ground sluicing include hand digging tools, short flumes, containment dams, wing dams and scrapers for tailings disposal (Hovis, 1990). Water is necessary for this type of mining operation and water infrastructure components such as flumes, ditches and pipes also are likely to be present. Rock windrows, rock piles and shallow eroded areas (often described in archeological reports as ground sluice areas) are landform indications of this cluster type.

Ground sluicing clusters in the Chisana-Gold Hill Landscape are listed below. Features indicating a ground sluicing operation are similar to those used in shoveling-in operations. In fact, the two methods often were used in conjunction and as a result, the cluster components are similar in the two mining operations. Some of the clusters listed below also are included in the section on shoveling-in operations (see section 7.2.5). Isolated components indicate that ground sluicing was not limited to the locations of the clusters in the Chisana-Gold Hill Landscape.

Bonanza Mining Cluster, 1913-1919, Lower Bonanza Creek. Components that indicate ground sluicing or shoveling-in include characteristic windrow tailings, a dam remnant, a short ditch and excess wood pieces.

Canyon Workings Cluster, 1913-1919, Lower Bonanza Creek. Components that indicate ground sluicing include a dam remnant, disturbed ground and wood pieces. Nearby habitation and prospect components include a tent floor, habitation scatter and a test pit.

Mid Bonanza Ground Sluicing Cluster, 1914-1918, Lower Bonanza Creek. Components that indicate ground sluicing or shoveling-in include a characteristic stacked rock pile and a dam remnant.

Little Eldorado Bench Mining Cluster, (undated) Little Eldorado Creek. Components that indicate ground sluicing or shoveling-in include characteristic ditch line, a ditch gate, a sluice area and pole riffles.

Skookum Creek Mining Cluster, 1914-Recent, Skookum Creek. Components that indicate ground sluicing include a characteristic ground sluicing pit or windrows (see figure 31, page 71), a sluice box in place, a channel blasted in rock, hand-stacked rock piles, boomer dams and water supply ditches.

Historic #2 Below Mining Camp Cluster, Early Rush Years, Gold Run Creek. Components that indicate ground sluicing include a characteristic dam remnant, a ditch, a ground sluicing area, sluice boxes and piled stone. Nearby habitation and prospect components include sled remains, two structure foundations, a tent frame, associated trash scatter and a prospect pit.

Carroll Mining Camp Cluster, 1920s, Gold Run Creek. Components that indicate ground sluicing or shoveling-in include a rocker box, a boomer dam, stacked rock, sluice sections, a water supply ditch and another dam remnant. Nearby habitation and prospect components include a cabin, a work table, stairs, a shed, post scatter, a retaining wall, a storage area, dog houses, a bunkhouse, a meat cache, an outhouse remain and associated camp scatter.

Poorman Creek Mining Cluster, 1940s, Poorman Creek. Components that indicate ground sluicing or shoveling-in include three dams, two ditch remnants, some penstock pipe, a flume scatter and a tailings pile. Nearby habitation and prospect components include a two room cabin, a shed ruin, a tent frame platform, two prospect pits and a rocker box.

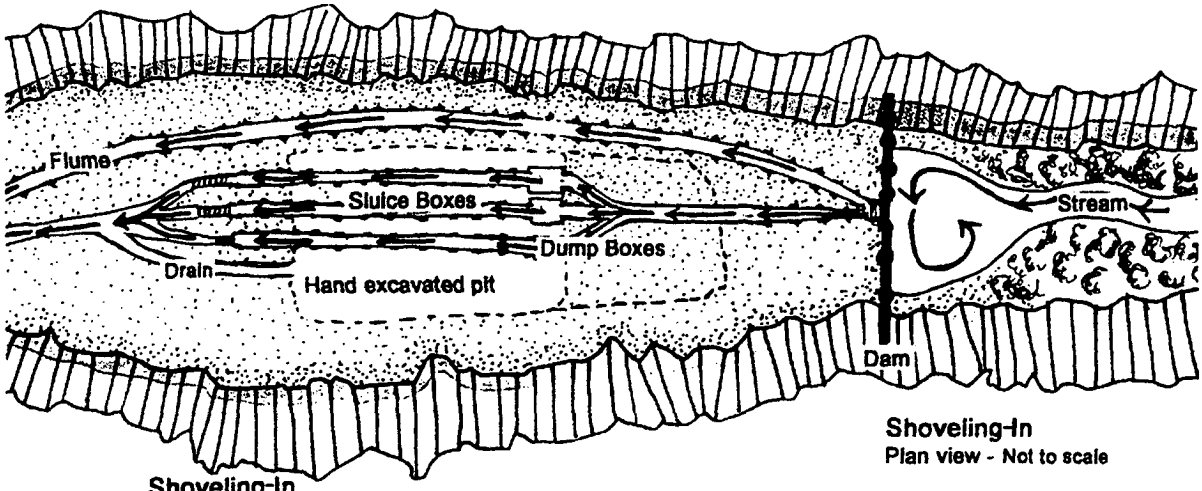
Upper Glacier Creek Mining Cluster, 1920s, Glacier Creek. Components that indicate ground sluicing include a characteristic diversion dam, a wheel barrow, other dam remnants, a flume and a prospected area.

Lower Big Eldorado Shoveling-in Cluster, 1930s, Big Eldorado Creek. Components that indicate ground sluicing and shoveling-in include characteristic hand stacked terraces and a diversion flume remnant.

Stevens/Peterson Mining Cluster, 1920s-1940s, Big Eldorado Creek. Components that indicate ground sluicing and shoveling-in include characteristic historic sluice box remains, parallel channels of stacked rock, flume support remnants, another stack rock area, sluice box sections, a ditch line, a tool stash and a hand stacked terrace. Nearby habitation and prospect components include a cabin and

Mining Operations

Shoveling-In



Shoveling-In

1. A technique for working the shallow gravels after ground sluicing.
2. Favorable conditions are a bedrock grade that is steeper than the required sluice grade. Seepage water collects in the pit and easily drains with these grades.
3. Areas with sticky clays require a dump box at the beginning of the sluice box line to wash boulders and rocks before discarding them. Dump boxes prevent an estimated 10% gold loss.
4. Water washes solid residue through sluice boxes, while the heavier gold collects in riffles of sluice boxes.
5. A smart miner begins shoveling in at the lower end of a claim and works upward. Thus, the tailings remain out of the way for mining the next section.

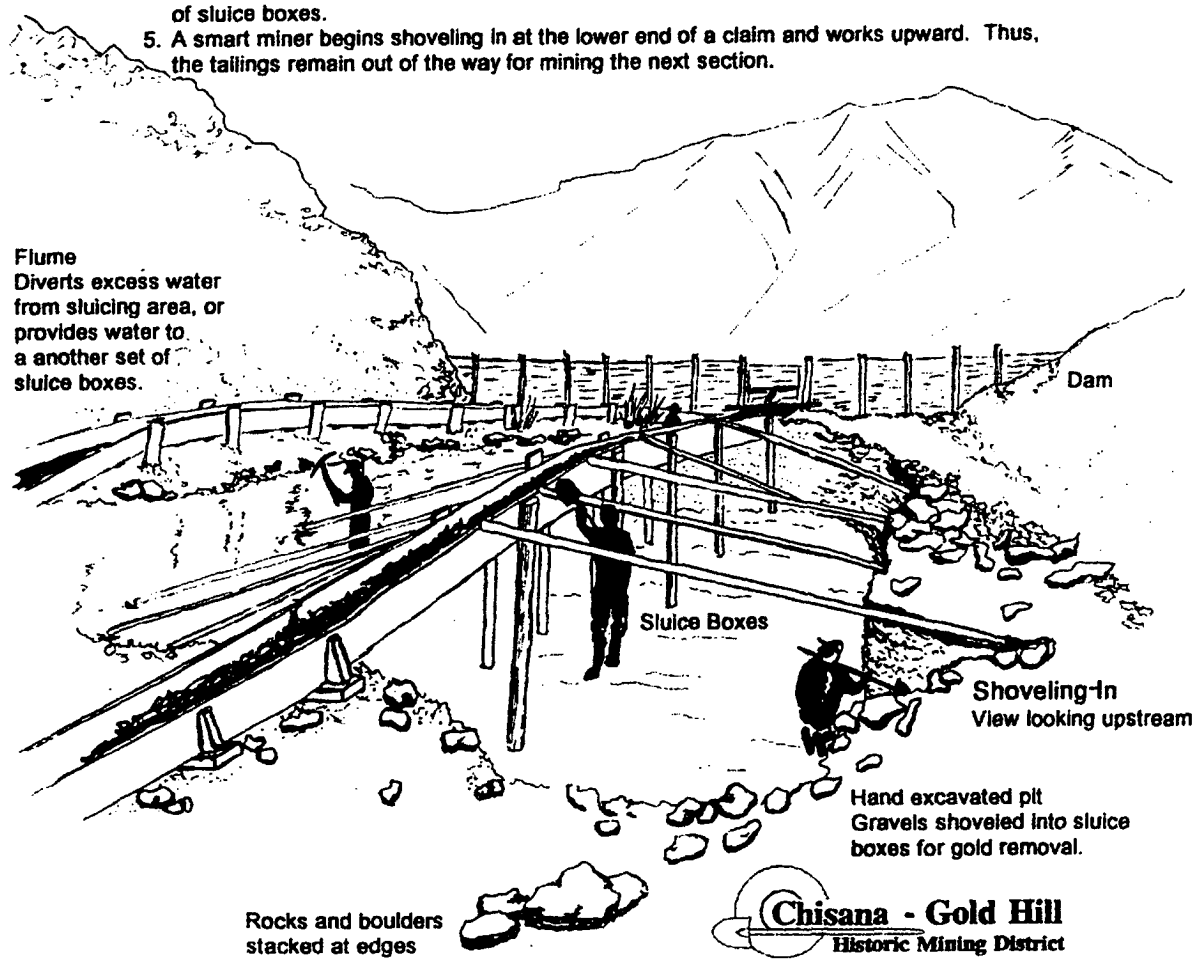


Figure 41. Mining Operations, Shoveling-in. Drawing: the author.

contents, a toolshed and contents, a tent frame, an outhouse, associated camp scatter and a prospect pit.

7.2.4 Placer Mining Operations Associated with Booming

Booming uses the increased cutting and transporting power of water under flood conditions. Operators store the water in a reservoir and then release it, allowing it to flow for relatively short periods. Booming is the most important type of ground sluicing because a much larger return can be obtained per unit of water used in booming than by other forms of ground sluicing. Operators also use automatic gates with shoveling-in operations if the water supply is not sufficient for sluicing (Gardner and Johnson, 1934).

> The definitive characteristic of a booming operation is the dam with its automatic gate. Other components associated with shoveling-in or ground sluicing are apt to be present (Hovis, 1990).

Booming cluster arrangements in the Chisana-Gold Hill Landscape are listed below. In addition, single isolates that are not part of a cluster, indicate that booming existed at other locations in the landscape.

Skookum Creek Mining Cluster, 1914-Recent, Skookum Creek. Components that indicate ground sluicing include characteristic boomer dams, a ground sluicing pit or windrows (see figure 31, page 71), sluice boxes in place, a channel blasted in rock, hand stacked rock and water supply ditches.

Carroll Mining Camp Cluster, 1920s, Gold Run Creek. The component that indicates the booming form of ground sluicing was used is the boomer dam. Other components include a rocker box, stacked rock, sluice sections, a water supply ditch, another dam remnant and tools found at the habitation area. Nearby habitation components include a cabin, work table, stairs, shed, post scatter, retaining wall, storage area, dog houses, bunkhouse, meat cache, outhouse remains and associated trash scatter.

7.2.5 Placer Mining Operations Associated with Shoveling-In

Shoveling-in or more specifically, shoveling-into-boxes is a small-scale placer mining method where miners loosen the gravels by picking and then hand shovel the gravels into sluice boxes. The quantity of water available influences the scale of operations and the size of sluice. Operators augmented small water flows by reservoiring the water (Gardner and Johnson, 1934).

Sluice boxes are usually twelve-to-fourteen inches wide, in telescoping sections with riffles. Pole riffles are most commonly found on Gold Hill, although other types of riffles also are found. Where the bedrock grade is less than the required sluice grade, operators mount the sluice boxes on low trestles or posts and brace the posts to the bedrock or the sides of the cut as shown in the drawings of shoveling-in in figure 41. The practical width of the cut for shoveling directly into the sluice boxes is six feet on either side, which established the practical unit of the "box length" or an area twelve-feet wide and the length of one box (twelve feet). Only the lighter material is shoveled in; the larger rocks, about five inches or over, are piled on cleaned bedrock (Wimmler, 1927).

The cluster arrangement of shoveling-in is an arrangement typical of that shown in the plan view shown in figure 41. Components of this type of operation are described below.

> The components associated with shoveling-in include hand digging tools, basic carpentry tools, sluice boxes with riffles of various designs, ditches, short flumes or smaller diameter riveted pipe to the boxes, containment dams to regulate the water supply, wing dams to keep unwanted water out of the workings, trestles to support the boxes, pitch forks to clean large stones from the boxes and horse-drawn scrapers for tailings disposal (Hovis, 1990).

Other components are tools for cleaning the bed rock, such as, brushes and hand scrapers. The characteristic land modifications typical of shoveling-in operations are rock windrows, stacked rock and ditches.

The following shoveling-in clusters have been identified in the Chisana-Gold Hill Landscape. Again, these clusters have been given contemporary names that reflect either the process, it's location, or historic content and were not used during historic periods. Features indicating a shoveling-in operation are similar to those used in ground sluicing operations. In fact, he two methods often were used in conjunction and as a result, the feature components are undifferentiated. Some of the clusters listed below also are included in the listing of ground sluicing operations. In addition, single isolates that are not part of a cluster, indicate that shoveling-in operations existed at other locations in the landscape.

Bonanza Mining Cluster, 1913-1919, Lower Bonanza Creek. Components that indicate ground sluicing or shoveling-in include characteristic windrow tailings, a

dam remnant, a short ditch and excess wood pieces.
Canyon Workings Cluster, 1913-1919, Lower Bonanza Creek. Components that indicate shoveling-in include a dam remnant, disturbed ground and wood pieces. Nearby habitation and prospect components include a tent floor, habitation scatter and a test pit.
Upper Bonanza Mining Cluster, 1914-1919, Upper Bonanza Creek. Components that indicate shoveling-in include a dam remnant, a sluicing area and eroded windrows in the stream. Nearby habitation components include two tent locations with associated trash scatter.
Upper Bonanza Shoveling-in/Camp Cluster, 1930s, Upper Bonanza Creek. A cabin ruin, a sluice area and a ditch are included in this mining cluster.
Snow Gulch Mining Cluster, (undated) Snow Gulch. Components that indicate shoveling-in include characteristic handstacks, a ditch, sluice section and flume parts.
Little Eldorado Bench Mining Cluster, (undated) Little Eldorado Creek. Components that indicate ground sluicing or shoveling-in include a characteristic ditch line, a ditch gate, a sluice area and pole riffles.
Upper Snow Mining Cluster, (undated) Snow Gulch. Components that indicate ground sluicing or shoveling-in include a characteristic dam remnant with a flume, a ditch and a steam point. Nearby habitation components include a camp site.
Historic #2 Below Mining Camp Cluster, Early Rush Years, Gold Run Creek. Components that indicate shoveling-in include a characteristic dam remnant, a ditch, a ground sluicing area, sluice boxes and piled stone. Nearby habitation and prospect components include sled remains, two structure foundations, a tent frame, associated trash scatter and a prospect pit.
Carroll Mining Camp Cluster , 1920s, Gold Run Creek. Components that indicate shoveling-in or ground sluicing include a rocker box, a boomer dam, stacked rock, some sluice sections, a water supply ditch and another dam remnant. Nearby habitation and prospect components include a cabin, a work table, stairs, a shed, post scatter, a retaining wall, a storage area, dog houses, a bunkhouse, a meat cache, outhouse remains and associated camp scatter.
Poorman Creek Mining Cluster , 1940s, Poorman Creek. Components that indicate shoveling-in or ground sluicing include three dams, two ditch remnants, some penstock pipe, a flume scatter and a tailings pile. Nearby habitation and prospect components include a two room cabin, a shed ruin and a tent frame platform, two prospect pits and a rocker box.
Lower Big Eldorado Shoveling-in Cluster, 1930s, Big Eldorado Creek. Components that indicate shoveling-in include characteristic hand stacked terraces and a diversion flume remnant.
Stevens/Peterson Mining Cluster, 1920s-1940s, Big Eldorado Creek. Components that indicate shoveling-in include characteristic historic sluice box remains, parallel channels of stacked rock, flume support remnants, another stack rock area, sluice box sections, a ditch line, a tool stash and a hand stacked terrace. Nearby habitation and prospect components include a cabin and contents, a toolshed and contents, a tent frame, an outhouse, associated camp scatter and a prospect pit.

7.2.6 Placer mining Operations Associated with Hydraulic Mining

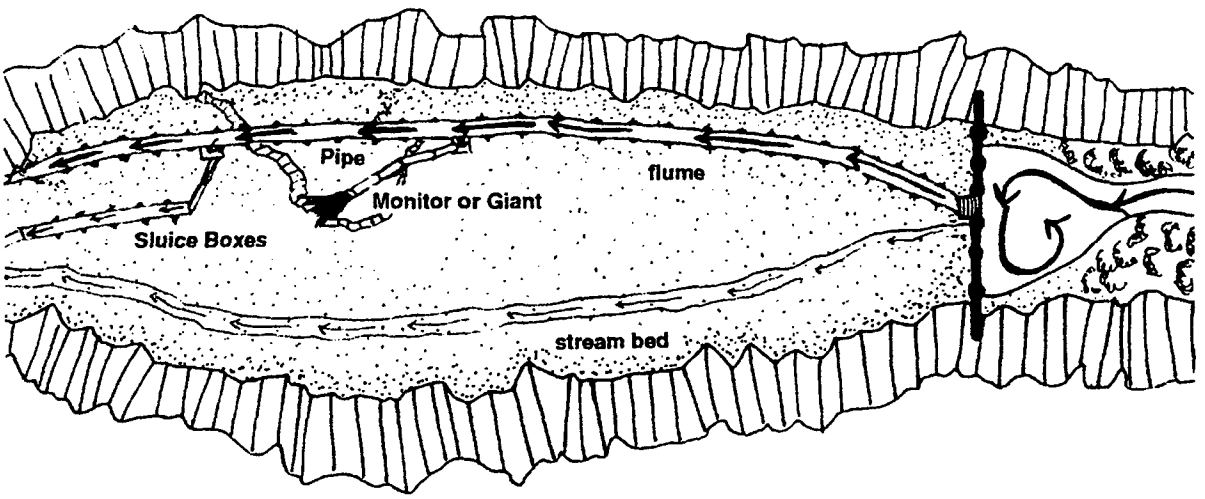
Hydraulic mining uses water under pressure from a nozzle for cutting gravel and sweeping it into sluice boxes. From there, the gravel passes through to a suitable dumping ground. Additional water not under pressure generally is used to assist in moving the washed material through the sluice boxes (Gardner and Johnson, 1934). A series of wing dams directs the water/gravel flow into the sluice boxes.

The cluster arrangement from hydraulic mining is an arrangement typical of that shown in the Plan View shown in figure 42. Components of this type of operation are described below:

> Elaborate water diversion and supply systems are frequently associated with hydraulic mining. Ditches, flumes and pipelines are common methods of bringing water under pressure to the workings. Riveted pipe, slip joints, T's, Y's, elbows and gate valves are associated with the final distribution of the water. The hydraulic monitor (giant) is the workhorse of the system; it is used for nearly all applications involving the moving of material (Hovis, 1990).

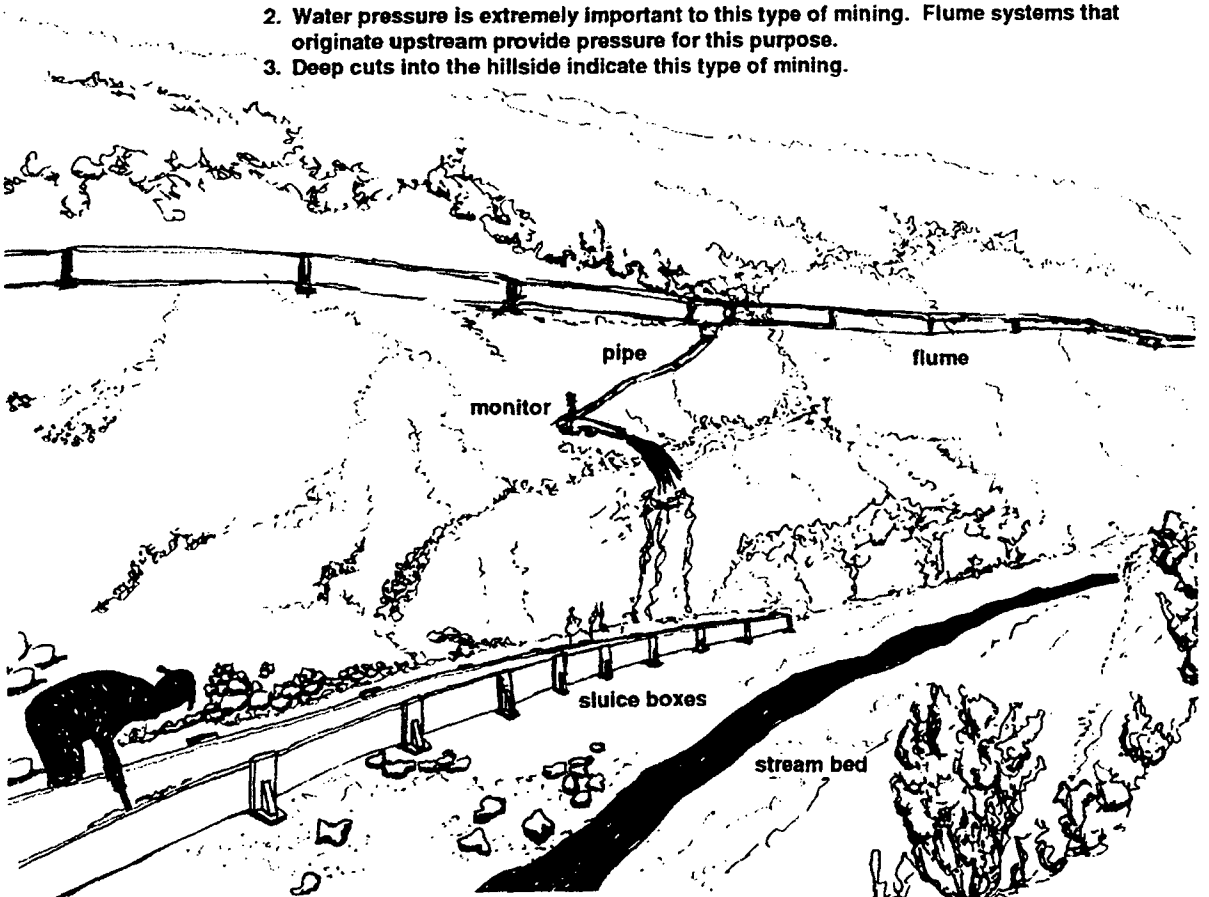
The landform features most often identified with the hydraulic mining are the mining pits—sites where the gravels were excavated. The pit can vary greatly (Hovis, 1990) nevertheless, the hydraulic pits found in the Gold Hill mining district most often are found on high benches located on the banks of the existing stream channels. The hydraulic method of gravel excavation usually leaves tailings at the lower end of sluice boxes. These piles are frequently conical in shape and regularly spaced throughout the pit (Hovis, 1990). Spoils larger than gravels—such as

Mining Operations
Hydraulic Mining



Hydraulic Mining

1. **Water thrown against a gravel bank while under pressure loosens the gravel so that it falls or 'caves.'**
2. **Water pressure is extremely important to this type of mining. Flume systems that originate upstream provide pressure for this purpose.**
3. **Deep cuts into the hillside indicate this type of mining.**



Gravels are thrown directly into sluice boxes if optimal grades and conditions exist.

Figure 42. Mining Operations, Hydraulic Mining. Drawing: the author.

boulders—are washed through the sluice boxes, but those too large to be moved with water pressure were broken up with hammers or by blasting.

The following cluster arrangements have been identified as sites of hydraulic mining in the Chisana-Gold Hill Landscape. These names were assigned to these groupings and are not historic names. In addition, single isolates that are not part of a cluster, indicate that hydraulic mining existed at other locations in the landscape.

Canyon Workings Cluster, 1919-1932, Lower Bonanza Creek. Components that indicate hydraulic mining include a dam remnant, a mining area, wood boxes and blazo cans (blasting). Nearby habitation and prospect components include a tent floor, artifact scatter, a table, other camp items and a test pit.

Earl Hirst Hydraulic System Cluster, Mid 1930s, Lower Bonanza Creek. Components that indicate hydraulic mining include a characteristic hydraulic pit, a regulator or giant and wheelbarrows. Nearby habitation and prospecting components include a shed, two tent frames, two stoves, a cache, a doghouse, an outhouse and remains of a boardwalk.

Eikland-Green Camp Cluster, Early 1930s, Lower Bonanza Creek. Included in this mining cluster are the characteristic hydraulic pit, a windlass, a boiler, a sled, coils, a gold pan and a nearby mining camp that includes a cabin, six doghouses and trash scatter.

Nelson's Hydraulic Mining Cluster, Mid 1930s, Lower Bonanza Creek. Components that indicate hydraulic mining include a characteristic hydraulic pit, two monitors, sluice boxes, sluice supports, equipment scatter, another hydraulic pit and the associated water infrastructure system which supplied water for the operation.

Upper Bonanza Hydraulic Cluster, 1930s, Upper Bonanza Creek. Components that indicate hydraulic mining include a characteristic hydraulic pit, pipe sections, a low ditch and an area of piled rocks.

7.3 Mining Habitation Cluster Arrangements

Mining camps are the collection of habitation structures associated with mining operations. Components of a mining camp can include tent frames, cabins, sheds, caches, doghouses, outhouses, walkways and associated trash scatter. These camps generally retain close proximity to the related mining operations. Refer to the conceptual drawing on page 91 for a typical mining camp configuration on Gold Hill.

Arrangements varied because of natural conditions. For example, in the lower Bonanza Creek canyon area, there was little room to put a tent frame or cabin in the creek bottom next to the mining operation. Miners set their mining camp on the upper bluff with a trail leading to the mining operation below.

The following habitation cluster arrangements have been identified in the Chisana-Gold Hill Landscape. These names were assigned to these groupings and are not historic names.

Upper Glacier Creek Prospect Cluster , 1918, Glacier Creek. Components that indicate a camp cluster include a prospect pit, a stone cache or cairn, lumber scatter from a tent frame and trash scatter.

Canyon Workings Cluster, 1919-1932, Lower Bonanza Creek. Components that indicate a camp cluster include a tent floor, artifact scatter, a table and other associated camp items. The mining components associated with the site include a characteristic dam remnant, the mining area, wood boxes, blazo cans and a test pit.

Earl Hirst Hydraulic System Cluster, Mid 1930s, Lower Bonanza Creek. Components that indicate a camp cluster include a shed, two tent frames, wheelbarrows, two stoves, a cache, a doghouse, an outhouse and remains of a boardwalk. The mining components associated with the site include a characteristic hydraulic pit and a regulator or giant.

Eikland-Green Camp Cluster, Early 1930s, Lower Bonanza Creek. Components that indicate a camp cluster include a cabin, six doghouses and trash scatter. The mining components associated with the site include a characteristic hydraulic pit, a windlass, a boiler, a sled, coils, and a gold pan.

Fred Best Camp Cluster, 1913-1914, Lower Bonanza Creek. Components that indicate a camp cluster include two tent frames, a motor and a stove. The mining components associated with the site include flume sections, a boiler, timber scatter, a wheelbarrow, a flume remnant, a hand stacked rock pile and a flume.

Shushanna Joe Camp Cluster, Latter 1930s, Lower Bonanza Creek. The only component included in this habitation cluster is a tent frame.

Steinberger Cluster, 1913-1917, Lower Bonanza Creek. Components that indicate a camp cluster include a tent pad outline and a ditch.

Canyon Creek Habitation Cluster, 1930s, Lower Bonanza Creek. Components that indicate a camp cluster include a tent platform, a chisel, a stove, a stove door, a stove, a chopping block, a shovel and other habitation tools.

Upper Bonanza Habitation Cluster, Mid 1940s, Upper Bonanza Creek. Components that indicate a camp cluster include a tent frame ruin, a tent frame, three dog houses, wood scatter, tools and trash scatter. The mining components associated with the site

include a dam remnant and flume ruins.

Coarse Money Confluence Habitation Center, 1915-1930s, Upper Bonanza Creek. Components that indicate a camp cluster include a main cabin, a cache, three sheds, an outhouse and scattered equipment.

Upper Bonanza Shoveling-in/Camp Cluster, 1930s, Upper Bonanza Creek. Components that indicate a mining camp cluster include a cabin ruin, a sluice area and a ditch.

Upper Bonanza Habitation and Drift Mining Cluster, Upper Bonanza Creek. Components that indicate a camp cluster include a sled remain, a shovel and fuel tins. The mining components associated with the site include a pit, tailings from bulldozer cut, a drift pit and ditches.

Upper Bonanza Mining Cluster, 1914-1919, Upper Bonanza Creek. Components that indicate a camp cluster include two tent locations with associated trash scatter. The mining components associated with the site include a dam remnant, a sluicing area and eroded windrows in the stream.

Upper Bonanza Mining Camp Cluster, 1930s, Upper Bonanza Creek. The only components that indicates a camp cluster is the campsite. An associated mining camp is indicated by a characteristic hydraulic pit in the bench area, a ditch, a dam remnant, stacked rock and a dam site.

Coarse Money Habitation Cluster, 1913, Coarse Money Creek. Components that indicate a camp cluster include a tent foundation, a can scatter and two structure outlines. The mining components associated with the site include a stone dam and a dam gate.

Coarse Money Habitation Cluster #2, 1940s, Coarse Money Creek. Components that indicate a camp cluster include two cabin foundations, a shed, a lumber pile, three doghouses, a cot frame and bellows. The mining components associated with the site include a drift pit and a wheelbarrow.

Little Eldorado Mining Camp Cluster, 1920s, Little Eldorado Creek. Components that indicate a camp cluster include various camp buildings, structures and a fire pit.

Drift Mining Camp Cluster , Mid 1920s, Chavolda Creek. Components that indicate a camp cluster include a log cabin, dog houses, outhouses, a stove and associated artifacts. The mining components include a collapsed audit, a prospect pit and a drift pit.

Historic #2 Below Mining Camp Cluster, Early Rush Years, Gold Run Creek. Components that indicate a camp cluster include a sled remain, two structure foundations, a tent frame and associated trash scatter. The mining components associated with the site include a characteristic dam remnant, a ditch, a ground sluicing area, sluice boxes, piled stone, and a prospect pit.

Dipples Mining Camp Cluster, 1913 and 1940s, Gold Run Creek. Components that indicate a camp cluster include a cabin, an outhouse, a skid shack, a shed, two doghouses, a tent frame, a blacksmith shop, buried cans and other scattered artifacts. Mining components of the site include two drift pits, a ditch, a portable boiler, wood buckets, a windlass, a dump box and a rock wing dam.

Carroll Mining Camp Cluster , 1920s, Gold Run Creek. Components that indicate a camp cluster include a cabin, a work table, outdoor stairs, a shed, post scatter, a retaining wall, a storage area, several dog houses, a bunkhouse, a meat cache, an outhouse remain and associated camp scatter. Characteristic mining components at the site include a rocker box, a boomer dam, a stacked rock pile, several sluice sections, a water supply ditch and another dam remnant.

Upper Gold Run Habitation Camp Cluster, Recent, Gold Run Creek. Components of this habitation cluster include a cabin, a bunkhouse, a storage shed, a diesel engine, a pump, an outhouse, a terrace, a roadway, a tent site and associated artifact scatter. Mining components of the site include a dam and a ditch.

Poorman Creek Mining Cluster , 1940s, Poorman Creek. Components of this habitation cluster include a two room cabin, a shed ruin and a tent frame platform. Mining cluster components at the site include three dams, two ditch remnants, some penstock pipe, two prospect pits, flume scatter, tailings pile and a rocker box.

Upper Glacier Creek Prospect Cluster , 1918, Glacier Creek. Components of this habitation cluster include a stone cache or cairn, lumber scatter from a tent frame and trash scatter. The only mining cluster component is a prospect pit.

Lower Big Eldorado Habitation Cluster, 1930s, Big Eldorado Creek. Components of this habitation cluster include sill logs for two tent frames and a cache. Mining components at the site include a rock dam, a stacked stone pile, two ditches and a hand stacked stone wall.

Stevens/Peterson Mining Cluster, 1920s-1940s, Big Eldorado Creek. Components of this habitation cluster include a cabin with its contents, a toolshed with its contents, a tool stash, a tent frame, an outhouse and associated camp scatter. Mining components at the site include flume support remnants, historic sluice box remains, parallel channels of stacked rock, another stack rock area, a prospect pit, several sluice box sections, a ditch line and a hand stacked terrace.

7.4 Analysis of Cluster Arrangements in Chisana-Gold Hill

Components of mining systems are scattered throughout this landscape. Mining clusters are the assemblages of these components into an understandable system. Placer mining operations do not uses a building to facilitate their operation, but rather require a system of features to execute their operation. Mining clusters also reveal the type of mining operations used in each of the significant periods.

The clusters have been given names in order to collectively associate them as a mining system. The names relate to the mining operation, the location or the historic reference but are contemporary names selected for the ease of identification.

There are prospect mining clusters of the Stampede and Boom Periods on Canyon Creek, Glacier Creek and Big Eldorado Creek. All three of these clusters indicate the use of the test pit method of exploration.

Canyon Creek Prospect Cluster contains the components necessary for understanding the prospecting type of mining exploration. According to historical records, Steinberger prospected the area in 1914 and Aaron Nelson prospected the area in 1915.

The Big Eldorado Prospect Cluster lacks only the moveable items (such as sluice boxes and rocker boxes) necessary for an interpretation of prospect mining. According to historical records, Matilda Wales staked Big Eldorado No. 2 Above and this cluster probably lies on Wales' claim.

The Upper Glacier Creek Prospect Cluster lacks the components necessary to understand prospect mining. In addition, no historical references are made to this site.

The churn drill at NAB-067 is in a condition good enough for interpreting the churn drill method of prospecting. However, it need not remain in its present location because there is nothing about the site that identifies it as a churn drill operation. No historical references are made to this site.

There is a drift mining cluster of the Stampede and Boom Periods on Big Eldorado Creek. Even though the pit has not been located, the Upper Big Eldorado Drift Mining Cluster contains components necessary to understand drift mining. No historical references are made to this site.

There is a drift mining cluster of the Decline Period on Chavolda Creek. This Drift Mining Camp Cluster contains a good example of a drift pit. Other component tools can be found in the habitation area. Historical references specifically refer to a sixty five feet tunnel at this location.

There is a drift mining cluster of the Recovery Period on Big Eldorado Creek. The Upper Big Eldorado Drift Mining Cluster contains a windlass and a platform necessary to interpret a drift mining operation. The contour elevations also place this cluster at the location where the Peterson brothers filed for the "Monte Carlo Lode" prospect.

There are drift mining clusters of undetermined dates on Upper Bonanza Creek and Alder Gulch. Historic references indicate that there were active drift mining operations in Alder Gulch in 1914 and in 1931. Additional information from the archeological files is necessary to make an analysis on these drift mining operations. As it is, the Upper Bonanza Habitation and Drift Mining Cluster lacks the components necessary to understand the drift mining operation.

There are ground sluicing and shoveling-in mining clusters from the Stampede and Boom Periods Upper Bonanza Creek, Gold Run Creek and three on Lower Bonanza Creek. Three of the clusters are located on the properties previously held by Nelson, James, Wales and Johnson.

The Bonanza Mining Cluster components could indicate a ground sluicing operation because the high velocity of water at this location suggests that ground sluicing is feasible. The type of dam is unidentifiable, but it likely was a wing dam. This cluster is located on the Bonanza Discovery Claim near where Nelson made his discovery.

The Canyon Working Cluster contains minimal components for understanding the ground sluicing operation. However, the components are thought to be within Bonanza No. 1, one of the historic claims held by James, Nelson, Wales and Johnson.

The Mid Bonanza Ground Sluicing Cluster contains stacked rock and a remnant dam from the early Boom years. These are among the few remnants that can be attributed to the Hamshaw operation.

The Historic No. 2 Below Mining Camp Cluster contains representative components of ground sluicing operations. In addition to the ground sluicing pit, there remain components that indicate a shoveling-in operation on the site. Historical references indicate that six men mined the area in 1914.

The Upper Bonanza Mining Cluster contains components for understanding the shoveling-in operation. There is a historic photo that shows the area during the shoveling-in operation (See figure 21).

The Upper Bonanza Shoveling-in/Camp Cluster offers little for understanding the shoveling-in operation. In addition, no direct historic reference is

made to this site.

There are ground sluicing, booming and shoveling-in mining clusters of the Decline Period on Gold Run Creek and Glacier Creek. On Gold Run Creek is one of the best examples—the Carroll Mining Camp Cluster. It contains components for representing the ground sluicing operation, the booming operation and the shoveling-in operation. Historic references indicate that Jack Carroll mined here from 1922 to 1926.

The Upper Glacier Creek Mining Cluster has the components necessary to understand a ground sluicing operation. The diversion dam is intact, which has not been the case at any other locations in the Chisana-Gold Hill Landscape. No historic references are found for this site, however.

There are ground sluicing and shoveling-in mining clusters of the Recovery Period on Poorman Creek and two on Big Eldorado Creek. The Poorman Creek Mining Cluster contains components necessary for understanding a ground sluicing operation. The site would also has potential for interpreting a shoveling-in operation. No historic references were found to substantiate the operation, however.

The Lower Big Eldorado Shoveling-in Cluster contains the components necessary for understanding the shoveling-in operation. The rock piles are extensive here. Historic references indicate that the Peterson Brothers mined here in 1934-35.

The Stevens/Peterson Mining Cluster has components that make up a ground sluicing and shoveling-in cluster. The archeological reports of this cluster are confusing and a determination whether or not a shoveling-in operation could be understood from this cluster is unclear. Historic accounts specifically reference the Stevens operation as ground sluicing in this area.

The Skookum Creek Shoveling-in operation offers the best example to understand and interpret the shoveling-in operation. It includes windrows, sluice boxes which remain in position, dams and rock piles.

There are four hydraulic mining clusters of the Recovery Period on Lower Bonanza Creek and two on Upper Bonanza Creek.

The Earl Hirst Hydraulic System Cluster provides an excellent example of a hydraulic mining operation with the cluster components in position as it might have operated. Photos are available of the historic mining operations and in addition, photos prior to the mining operation show the ground area before it became a hydraulic pit (see figures 26 through 28).

The Nelson's Hydraulic Mining Cluster has fewer components to the actual mining operation, however, the water system that supplied this operation intact and provides greater potential to connect the water infrastructure and the hydraulic mining operation.

There are two mining habitation clusters of the Stampede and Boom Periods on Lower Bonanza Creek, one on Canyon Creek, one on Coarse Money Creek, one on Glacier Creek and one on Gold Run Creek.

There are mining habitation clusters of the Decline Period on Lower Bonanza Creek, Chavolda Creek, Gold Run Creek and Big Eldorado Creek.

There are three mining habitation clusters of the Recovery Period on Lower Bonanza Creek, four on Upper Bonanza Creek, two on Big Eldorado Creek and one on Coarse Money, Gold Run and Poorman Creeks.

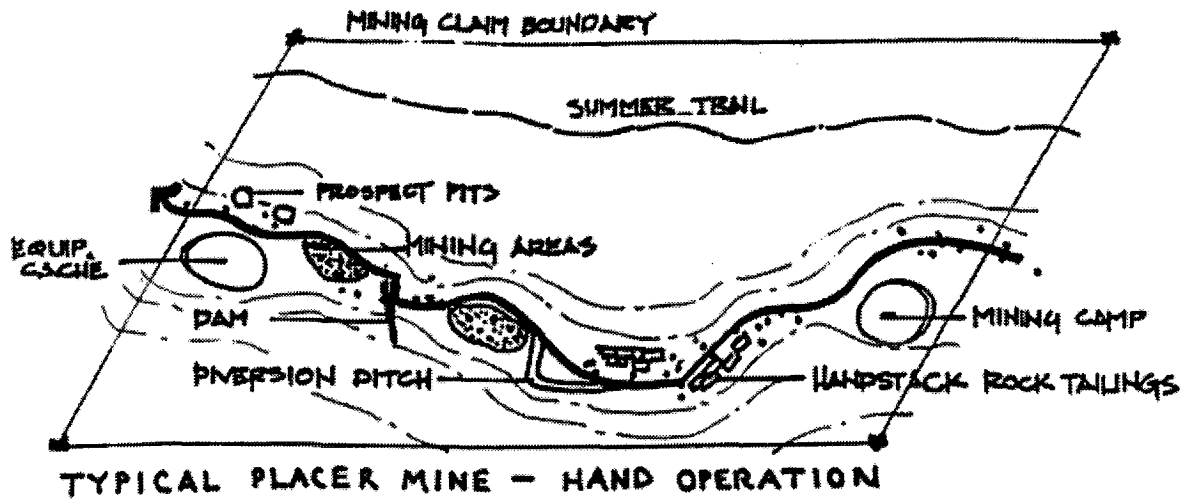


Figure 43. Typical mining camp layout on Gold Hill. Drawing: NPS files.

8. Vegetation as Related to Land Use

8.1 Introduction

Man's intervention in the growth of vegetation is one of the identifiers of a cultural landscape (Firth, 1985). "Those features of a landscape that were the result of construction and management in a historic period should be classed as cultural resources" (Firth, 1985).

It is best to consider vegetation of the Chisana-Gold Hill mining landscape in the context of its isolated location, meaning that the regions vegetative resources provided supplies for living and mining. The miners used wood for shelters, for mining structures and for fuel, therefore, the availability of this commodity was critical to their livelihood.

Accounts prior to the Stampede Era cite the presence of spruce timber on the valley floors across the Chisana River from the Chisana City site. "The best timber seen during the summer was on the flats east of Chisana River near Euchre Mountain, where a saw pit had been erected and boat material had been cut. Trees eighteen to twenty inches or more at the butt are common here" (Moffit and Knopf, 1910).

Other early accounts reveal that in the Chisana Placer District, "Timber is rather scant in the district" (Brooks, 1914). Brooks related that the timber line reached only to three hundred to five hundred feet above the floors of the main valleys and stunted willow grew in the next one thousand feet above the spruce line (1914). Another observer of the Chisana Valley saw trees two feet in diameter but most commonly did not exceed one foot in diameter (Capps, 1915). The difficulty for miners was the distant location of these trees from the mining claims.

> Much the greater portion of the region, however, is above timber line. In the placer camp wood for fuel and lumber for sluice boxes and other mining purposes must be brought several miles to the places at which it is to be used. Willow and alder brush grow in many places that are devoid of trees and furnish sufficient fuel for the prospector's camp (Capps, 1915).

A report in 1940 says that the willows "have practically disappeared where camping has been frequent on some of the streams above the altitude of spruce" (Wayland, 1941).

The miners harvested the spruce forests for mining operations as needed. Hamshaw moved a sawmill into the district at the beginning of 1914 and began cutting the lumber to be used in a large-scale sluicing operation. A year later, two sawmills were found in the district (*Dawson Daily News*, July 28, 1914). At least one sawmill remained at the Chisana City location throughout the historic periods. A mill on Chavolda (Woodrow) and Hamshaw's lumber mill at Bonanza City operated during the Boom Period. Historic photos from the Decline Era show freight sleds filled with logs and a stampeder with a cross cut saw used for cutting lumber.

Irregular growth patterns have been detected in current studies of the Chisana forest. The average age of the spruce at Chisana City was 172.8 years old for a nine inch Diameter Breast Height (DBH) in a timber study in 1987 (Beck and Connery). It can be assumed that these and the trees of seven and five inch DBH, as well, were present during the historical eras (Ibid.). Although the 1987 study did not examine trees less than five inches DBH, one can extrapolate that in 1997 seedlings of less than three inches DBH are younger than the Boom historic era. The Chisana City stand had twice the density of seedlings when compared to a control plot (Beck and Connery, 1987).

> Tree canopy removal, moss organic layer abrasion and ground substrate scarification due to logging activities can to some degree also reverse these trends (inhabitation of germination and tree regeneration). Especially in the vicinity of the Chisana City airstrip, some of the more heavily cut over portions of the stand have a moss organic layer which is absent, discontinuous or shallower than that found under a closed timber canopy. Although seedlings are usually patchy in abundance, there is a higher density of tree regeneration in these areas than in portions of the stand with more shade and a thicker moss organic layer (Beck and Connery, 1987).

Irregular growth patterns indicate human intervention of the normal vegetative patterns. Cut stumps, opened views and an increased percentage of seedlings indicate prior lumbering of the spruce.

No timber occurred near the placer mines and lumber was brought from lower Chathenda Creek or from Chavolda Creek, a distance of several mines. Two sawmills at Chisana City and one at Bonanza City operated in 1914 cutting spruce for the mining operations (Brooks et. al., 1915). Sawmill remains on Chavolda Creek suspected as being of the Woodrow community give evidence of another mill during this time period.

Variations in the types of building construction indicate the proximity of the site to the source of lumber. Structures in the mining district are those that require less wood, such as plank wood cabins and canvas tents with wood frames (referred to as

tentframes). More substantial log cabins are more likely to be found in the lower, spruce laden, elevations.

Vegetation also indicates the period of the landform disturbances. Re-vegetation of plant materials on a site can be an aid in determining the age of landform modifications. "Plants can help to date various mining-related topographic features in the absence of better indices or written records." (Francaviglia, 1991). There is little information available on natural re-vegetation of reclaimed mined lands in the subarctic (Cook, 1990). Additional study is recommended to evaluate the rate of re-vegetation upon modified landforms.

Some species of vegetation indicate previously disturbed soils. The tall willows are early successional plants of the tundra climax vegetation. These willows precede dwarf shrub-sedge tussock tundra or, in some cases, wet sedge meadow tundra (Viereck et. al., 1992). Tall willow vegetation on Gold Hill serves as a visual signal of previous ground disturbance, although it is not an exclusive indicator. Willow vegetation occurred naturally in this area prior to the cultural influx (Brooks, 1914; Capps, 1915).

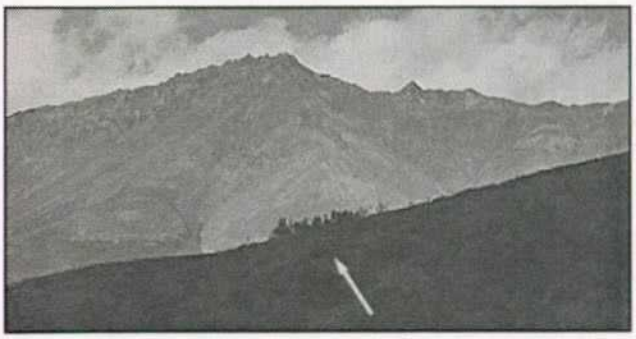


Figure 44. Willow growth on the hillside of Little Eldorado Creek; an indication of prior cultural activity, 1995. Photo: the author.

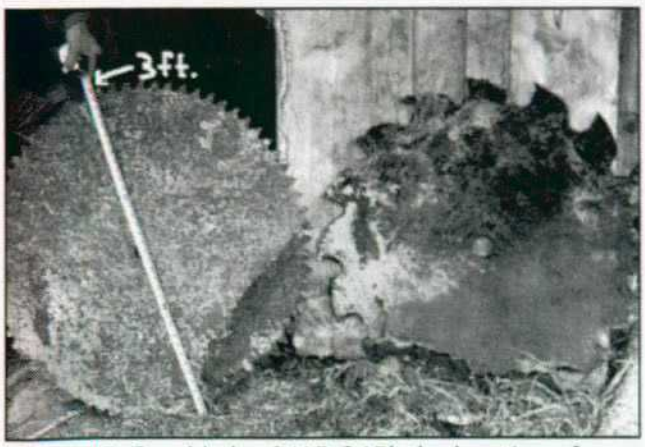


Figure 45. Saw blades (NAB-045) the location of a sawmill on Chathenda Creek, 1994. Photo: NPS files.

8.1 Analysis of Vegetation as Related to Land Use

The location of lumber resources in the valleys and its absence from the hill is significant in this landscape. Specifically, the cut stumps indicate lumbering in the historic periods. On a larger sense the proximity of the spruce forests to the mining area contributes to the understanding of the mining culture in the Chisana-Gold Hill Landscape. This demarcation between spruce forest and highland tundra contributes to the historic setting and integrity of feeling within the landscape.

As noted, willow growth can show prior land disturbance. Its location might indicate the existence of a mining feature. The ditch and flume line on Upper Little Eldorado Creek are examples. Even though very little of the flume remains today, the willow shrubs mark the location of the flume line.

Under National Register requirements this willow growth on disturbed ground has no integrity for the significant periods. However, it can contribute to the integrity of the site if used as a location indicator.

9. Boundaries

9.1 Introduction

Manmade boundaries found within of the Gold Hill Chisana Landscape reflect land use with claim boundaries being the most common boundary type. Claims were documented at the recording offices with U.S. Commissioners and recorders.[5] Today the claim boundaries are found exclusively on the drainages of Gold Hill, however during the historic periods and after, miners claimed the hillsides in as well.

A single placer claim fixed by an individual locator was limited to a maximum of twenty acres. Placer claims were to conform as nearly as possible to rectangular configurations except where the topography made it impractical to lay out rectangular claims. Land offices did require that the entries be as compact as possible yet they did not permit long, narrow or grossly irregular tracts (Gardner and Johnson). Claims could be maintained, if the claimant performed at least one hundred dollars worth of work or improvements each year.

Claim boundaries are marked on the land with corner posts. Patterns of these claim boundaries follow the drainages. Except for ownership, no significant aspects differentiate claim boundaries throughout the historical periods.

The early documents from Brooks of observations and conditions in 1913 show mining camps on Bonanza Creek, Glacier Creek and Little Eldorado Creek only (see the map 11 on page 95). The following year, general mapping of the claim areas was documented in the Capps observations (Brooks, 1915, plate IX). (See the map 12 on page 97.) Documentation of some of the claims of the Stampede Period was provided by an independent surveyor, Harold H. Waller, in 1913 (see the map 13 on page 99). The claims took on another dimension by including lode mine claims on the hillsides for an unknown time period prior to 1994. Claims covered the cap of Gold Hill as well as the drainages of the area (see the map 14 on page 101). The claims that remain today, lie within the drainages.

Privately held lands within the National Park at Chisana City represent additional boundaries. However, there is no mining on these privately owned lands, which is found in the Existing Conditions Appendix I.

9.2 Analysis

The boundaries of mining claim areas are vague when seen from the ground. Occasionally, a characteristic claim post can be seen that identifies one corner of claim boundary. Boundaries, although are present, are not a strong character-defining feature of this landscape.

The claim boundaries meant much more to the miners. For example, the water supply systems were restricted to the owner's claims. The extensive water supply systems built by James and Nelson were possible because they controlled Bonanza Nos. 4, 5, 6, 9 and Coarse Money Discovery Claim. Dams were built on Bonanza No. 9 and Coarse Money Discovery to provide water for the lower and more productive Bonanza Nos. 4, 5 and 6. In contrast, the Hirst Hydraulic Operation (1936 to 1940) was restricted to a single claim flume line. This flume line reached no further upstream than to the upper reaches of his only claim, Bonanza No. 2.

10. Small Scale Elements

10.1 Introduction

Throughout this landscape, miners' tools, scatters of mining camps and other objects can be found. They may not have an association as a "permanent place", but their presence contributes to the evidence of the multitude of stampeders that once visited this district. Small scale elements are characteristic features in this landscape and include such items as "...abandoned machinery, or fence posts, that mark the location of historic activities, but lack significance or integrity as archeological sites." (National Register Bulletin #30).

10.2 Analysis

Small-scale elements make this a landscape alive with the historic activity. The abundance of scattered remnants indicate the Stampede Era of mining activity as well as the following periods. These "Small-Scale Elements" contribute to the integrity of feeling and setting of this landscape. The presence of small-scale elements within this Chisana-Gold Hill Landscape give some indication of the stampeders that once occupied this landscape and are important to the integrity of this landscape.

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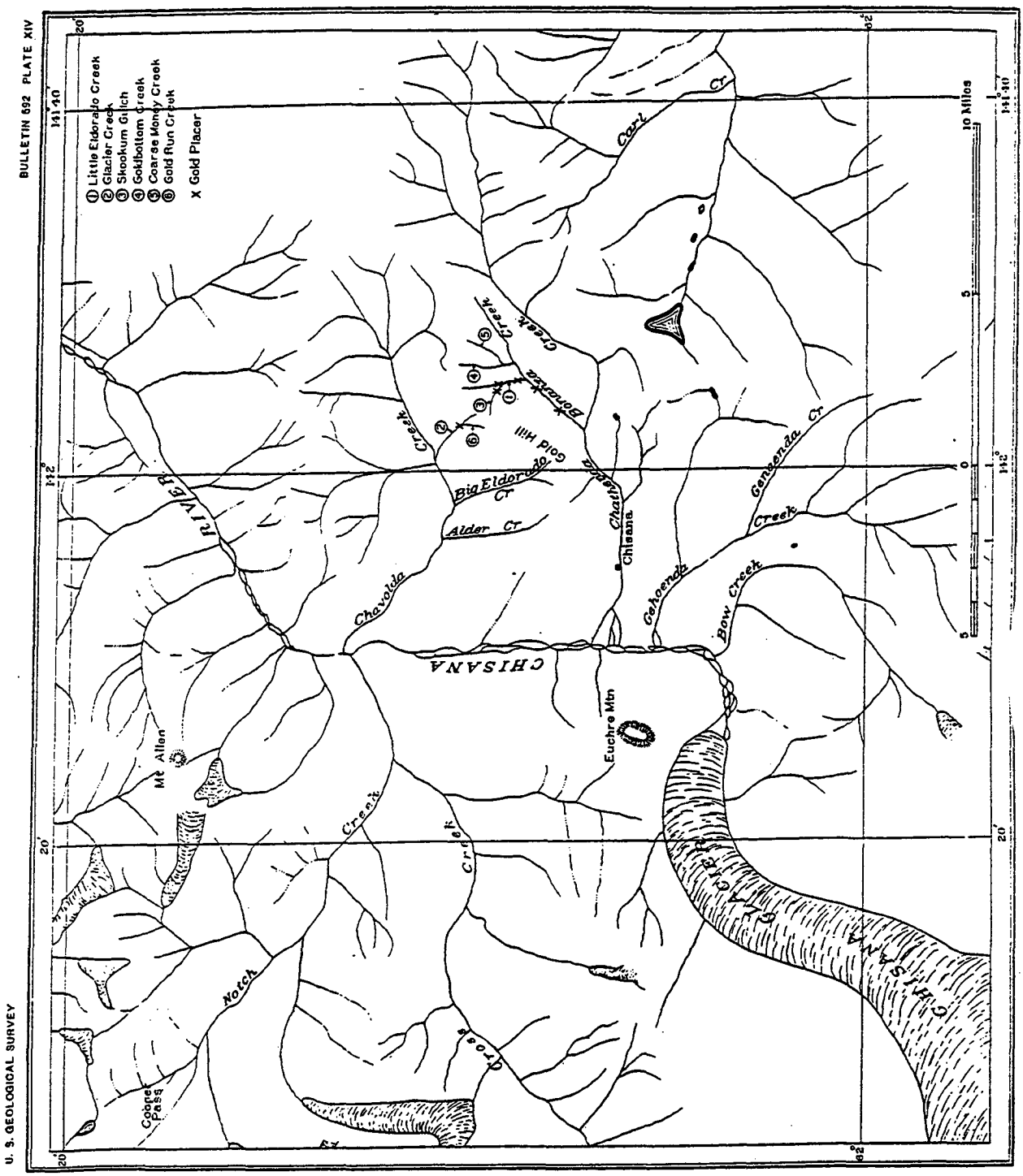
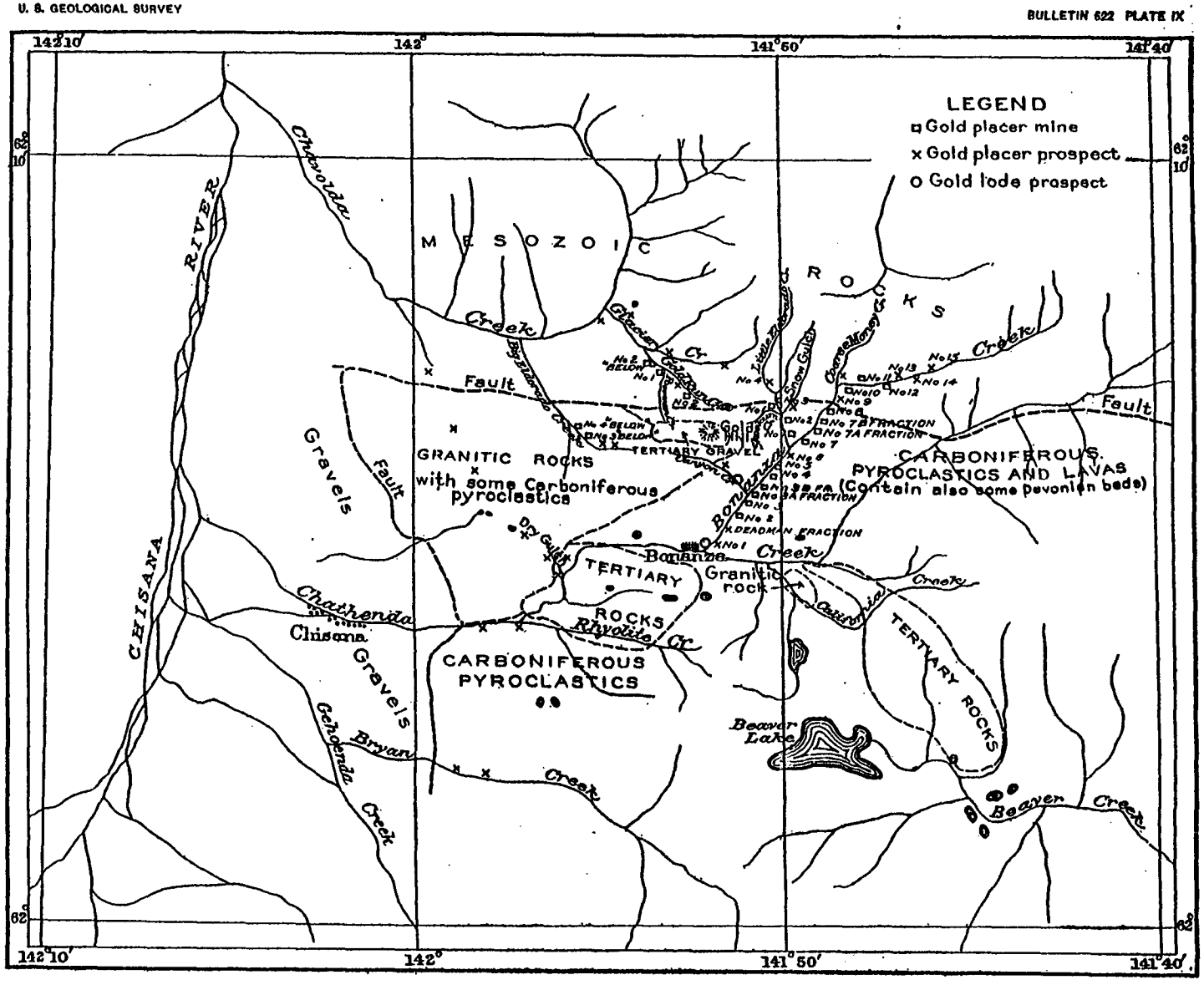
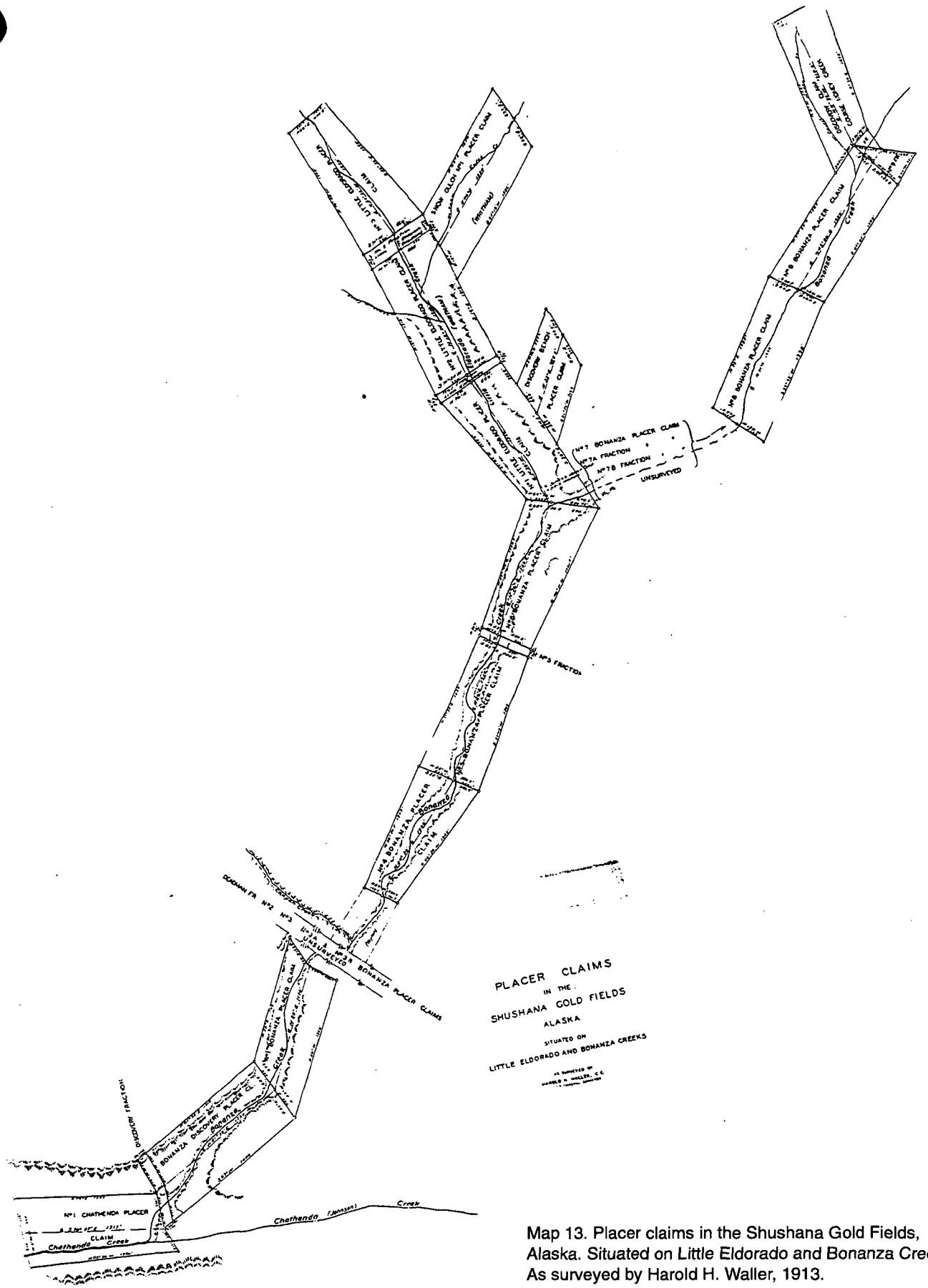
[5] Records of the Chisana District have since been destroyed by fire, at the Copper Center records office in the mid-1940's (Bleakley, 1996).



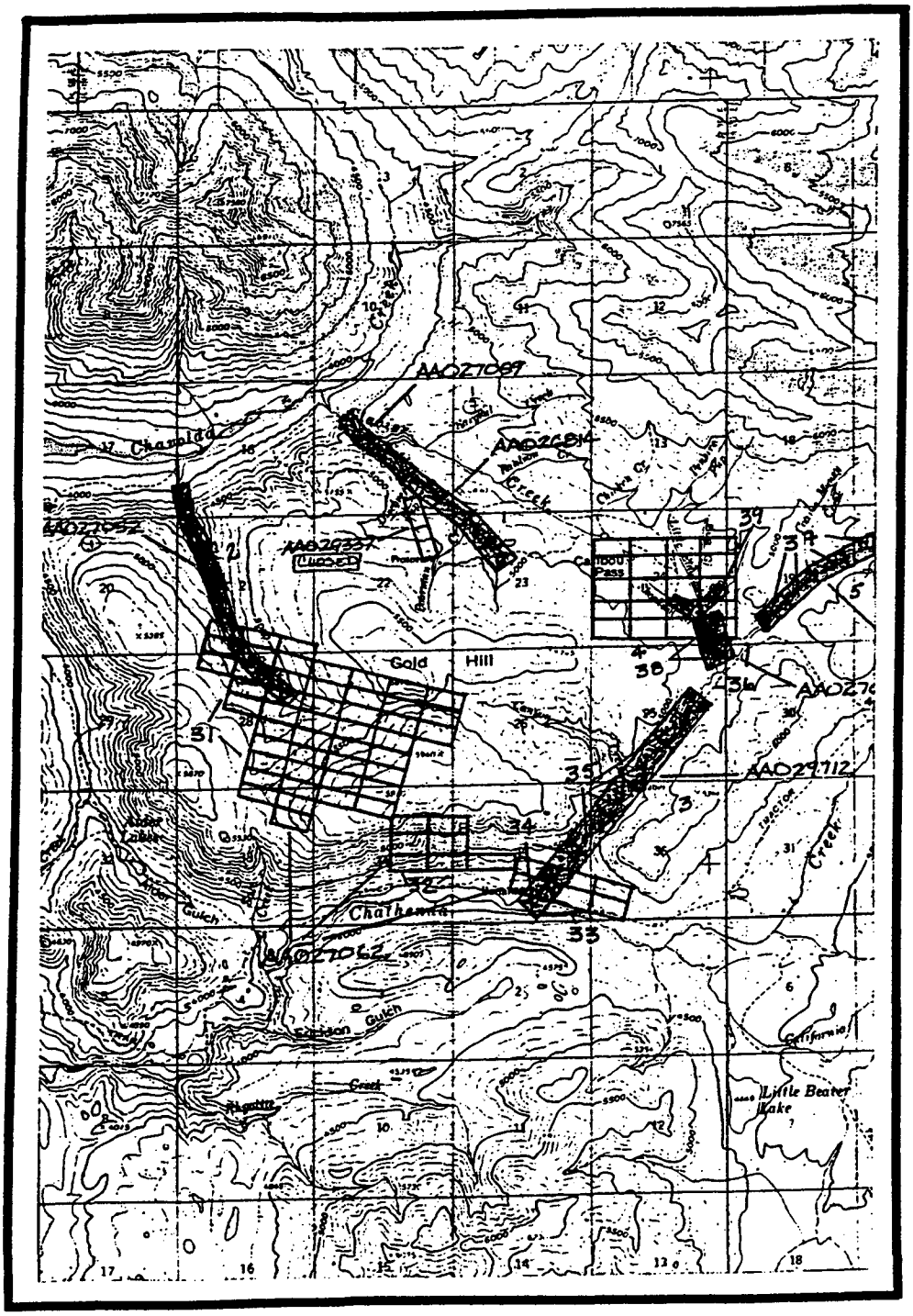
Map 11. Map of the Chisana Mining District in 1913.
Brooks, et. al., 1914.



Map 12. Map of the Chisana Mining District in 1914.
Capps, 1916.



Map 13. Placer claims in the Shushana Gold Fields, Alaska. Situated on Little Eldorado and Bonanza Creeks. As surveyed by Harold H. Waller, 1913.



Map 14. Active mining claims on Gold Hill, approximately 1989. USGS base map. Claim locations added. NPS files.

11. Buildings

11.1 Introduction

The building styles and locations of the Chisana-Gold Hill Landscape reflect the availability of timber in the district, the building traditions of the time and the patterns of mining boom towns. Buildings found in Chisana City have notably different construction styles from those found above the tree line. Chisana City buildings are of log construction while those above the tree line are generally tentframes or flat board construction. The log structures found at Chisana City reflect the traditional cabin structure found at other mining towns in Alaska (Spude, 1984). The footprint of the town site of Chisana, viewed through each of the historic periods identifies the population changes of the town of Chisana City.

11.2 Construction Style as a Response to Natural Features

The layout of Bonanza City and Chisana City are strongly affected by a response to natural features. Frequently, historic photos of Bonanza City show a single row of tent frames facing a single roadway that basically follows the contour of the hillside. The layout of Chisana City seems random but also follows the Chathenda Creek. The layout of Chisana City was altered when a creek cut was converted into the current airstrip in 1932.

11.3 Spatial Orientation as a Response to Natural Features

Construction styles vary throughout the landscape. Generally, those habitation structures found above the timber line were either tentframe structures or cut plank cabins. Those buildings found below the timber line were a log cabin construction style.

This response to the natural environment was simply a cultural response to the limited lumber in the alpine tundra. Shipping lumber to the alpine mining area was costly[6] and mining was the most important activity. The cultural response was to set the highest priority use of the lumber on sluice boxes, dams and other mining operation needs. In addition, these buildings at the mining camp normally were not used for winter habitation and thus their construction did not have to meet winterized standards.

11.3.1 The Stampede Period (1913-1914)

The development of Chisana City was swift. It was September of 1913 when seventy five miners met at the mouth of Chathenda Creek and established the new townsite that they named "Johnson City." The name was later changed to Chisana City by postal officials. By the middle of October, 1913, the town boasted two streets and two hundred cabins. Before the year was out, four hundred cabins were reported in the city.

Further developments were reported in February of 1914; structures were more elaborate, larger and some had glass windows. A two-story cabin was erected. By March, there were reports were of the camp assuming the ways of a town, including delicacies such as magazines, bath tubs, brooms and tea kettles[7] (Bleakley, 1996).

Fewer records exist for Bonanza City, but historic photos indicate many tent structures in 1914 (Stanley Collection, 1914). Included were a few cabins and several stores, a hotel and a restaurant (Best, March 15, 1914).

11.3.2 The Boom Period (1914-1919)

The winter of 1914 found two hundred individuals wintering in the mining district and most stayed at Chisana City (Martin, 1919; *Chitina Leader*, September 22, 1914). Chisana City remained a thriving town throughout the summer of 1915. Only fifty miners over-wintered in Chisana City in 1915.

Population at Bonanza City declined after 1915. Fred Best wrote in his diary of frequently visiting Bonanza City during the winter months of 1916; to visit friends and play cards (Best Collection, April 10, 1916).

Chisana City and Bonanza City followed the pattern of many mining "boom" towns. The quick establishment of merchants and stores, a rapid building period, a refinement period and then, a quick decline in population typified the pattern.

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[6] Lumber prices in 1914 were $125 to $150 a thousand feet at Bonanza City and Chisana. Cordwood was $40 a cord delivered to the mouth of Little Eldorado (Brooks, 1915).

[7] In order to focus on the growth pattern of Chisana, details surrounding this chain of events have been omitted. Refer to the account in 'A History of the Chisana Mining District, Alaska, 1890-1990,' for a full account.

11.3.3 The Decline Period (1920-1932)

In 1920, the population of Chisana City changed from a predominately Caucasian population to a predominately native population—of 148 residents, 105 were Alaska Natives (Walker, 1920). A Smithsonian expedition member in the summer of 1924 reported "452 cabins in which one man lives alone" (Medary, 1924). In 1929, the one remaining merchant died, requiring other remaining residents to trade outside the mining district (McKennan, 1959). An airstrip was built in Chisana City during the year, however, few pilots risked landing there (Walker, 1920).

No reports of Bonanza City were found for this period.

11.3.4 The Recovery Period (1933-1945)

By 1932 Chisana City began receiving regular airplane service. The improved transportation brought passengers and supplies into the area. Renewed mining opportunities brought new life to the mining district. By 1940, accounts are of a substantial Native population residing at Chisana City. They occupied several cabins grouped just northeast of the airstrip (Bleakley, 1996). The era closed with the Second World War causing difficulties with air service to the area (Bleakley, 1996). The vigor of the Recovery Era was shattered and never returned.

No reports of Bonanza City were found for this period.

11.4 Analysis of Buildings

Construction types vary within the landscape due to the varying availability of lumber in the area. Few buildings with structural integrity remain. The remnants of these buildings do have integrity of workmanship. Extant buildings also retain integrity of location and therefore reveal the patterns of settlement, particularly in the Chisana City townsite. These patterns follow traditional mining town patterns and therefore retain integrity of design.

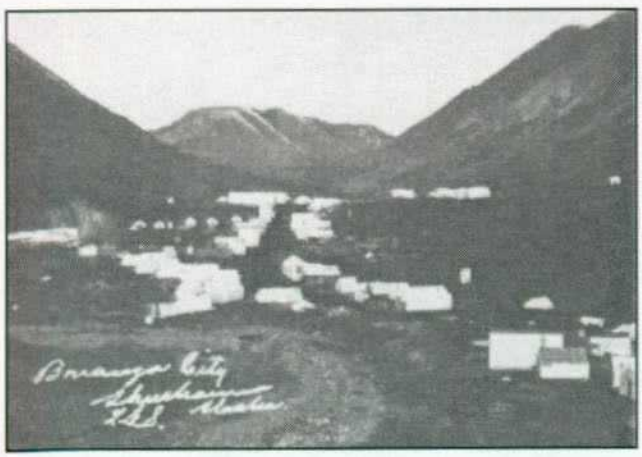


Figure 46. Bonanza City, 1914. Note the pattern of tent frames following the curve of the creek. Photo courtesy: Alaska State Library, Stanley collection.

Figure 47. Chisana City, approximately 1914. Note the curved pattern of log cabins that follows the creek. Photo from NPS historic file. Origin unknown.

V. AN EVALUATION OF THE CHISANA-GOLD HILL LANDSCAPE

Nine landscape areas emerged from the analysis of each of the features within the Chisana-Gold Hill Landscape. This section identifies each distinct historic character area and explains its contribution to the significance of the Chisana-Gold Hill vernacular landscape.

The descriptions of each landscape area also identifies the primary and secondary character-defining features that emerged from the analysis of character features. Features that are not mentioned are a lesser level of significance.

1. Introduction
2. Chisana City Historic Boom Town Area
3. Lower Bonanza Creek Historic Mining Area
4. Upper Bonanza Creek Historic Mining Area
5. Little Eldorado Creek Historic Mining Area
6. Glacier Creek Valley Historic Mining Area
7. Big Eldorado Creek Historic Mining Area
8. Alder Lake Valley Area
9. Outlying Highland Tundra Areas
10. Lowland Spruce Areas

V. AN EVALUATION OF THE CHISANA-GOLD HILL LANDSCAPE

1. *Introduction*

In the analysis of the Chisana-Gold Hill Landscape, the research examined each character feature within this landscape. From this categorical analysis emerged nine character areas within this Chisana-Gold Hill Landscape. Each of these areas has distinct historic character and specific landscape resources that contribute to the overall vernacular significance.

The following descriptions of each landscape character area identify the features that contribute to its character. The features that contribute most to the character of the area are listed as primary character-defining features. Character features with secondary importance or significance are listed as secondary character-defining features. Other features that have not been listed have significance in this historic vernacular landscape, but contribute even less to the overall character of the landscape and character areas. Additional criteria necessary for making management decisions is given as well.

This vernacular landscape developed when miners, freighters and stampeders modified its previous natural state. Even though native peoples explored and hunted this area prior to the 1913 Chisana Stampede, there is no evidence that they affected the natural landscape. The mining culture did, however, leave marks of its presence, its traditions, and its industry. The stories of prospectors, freighters, and discouraged stampeders are etched into this landscape. Every aspect of this landscape that has been altered by this culture during the historic periods is significant to this mining landscape, whether it is a ditch, a shovel, a cut stump or a flume. Each feature directly resulted from the Chisana Gold Stampede and the subsequent mining in this industrial landscape. Only those features that have been introduced since 1945 are not significant in this Chisana-Gold Hill Landscape (under Criterion A of the National Register).

Some character-defining features have *more* significance because they also meet other criteria such as association with 1) an important person, 2) distinctive characteristics of a technology, such as placer mining techniques and water infrastructure, 3) or have the potential with research, to reveal additional historical information. Cultural landscapes and character areas also are dependent on the integrity of the character-defining features within that area or landscape. If the features or character areas no longer have integrity as a historic feature then they lack historic value in the landscape.

National Register guidelines call for "professional judgments about whether a property [or feature] today reflects the spatial organizations, physical components, and historical associations that it attained during the periods of significance" (McClelland et al., 1987). If the historic character of the feature is discernible to the American public or can be made discernible by interpretation, then the feature was valued into one of three categories of significant features outlined above.

2. Chisana City Historic Boom Town Area

The Chisana-Historic Boom Town Area includes the Chisana City site. It also includes the area of historic cabin sites and the associated air strip. The town of Chisana City was established as a direct result of the discovery of gold on Bonanza Creek. This mining town continued to serve the mining district throughout the significant Boom, Decline and Recovery periods.

2.1 Primary Character-defining Features of the Chisana City Historic Boom Town Area

The character area known as the Chisana City Historic Boom Town Area represents the central hub and supply center of this mining landscape throughout the historic periods. Chisana City retains this character today as it continues to be the point of entry and exit to the Gold Hill mining landscape.

Chisana City served as the supply center or as a "node" of the circulation routes within the landscape throughout the Stampede, Boom and Decline Periods. During the Recovery Period, the Chisana City landing strip became the single main entry point into this landscape. The site served as a lumber supply center, trade center and winter residence during all periods. The existing Simons Trail and the Red Hill Creek Trail originate in Chisana City and were used to supply the Gold Hill mining area during all historic periods.

The Chisana City airstrip remains the single main entry route into the Chisana-Gold Hill landscape today. This form of access epitomizes the remote character of this mining landscape. Entering the landscape at Chisana City and reaching the mining area via supply trails is characteristic of the historic landscape. Alternate airstrip locations that are not located in Chisana City, or future roadways entering or within the district, do not contribute to the historic integrity of this landscape.

Views within this character area include: views which orient the observer in the landscape; enclosed views formed by spruce tree walls; and, feature views. Some of the feature views include

characteristic log cabin structures, patterns of cabin remnants, corrals and artifact scatter.

The topographic character of the Chisana City area is determined by its location at the confluence of Chathenda Creek and Chisana River where the lowest elevations within the landscape boundaries are found. This site served as the area of principal winter residence in the district because of climate moderating influences from spruce tree forests, landform formations and elevation differences.

The surrounding mountains serve to orient the visitor within this landscape area. Red Hill can be seen on the eastern horizon, Euchre Mountain on the western horizon and Cooper Pass to the northwest. Panoramic views that enable the viewer to identify these landmarks also aid in orienting the viewer within this landscape area.

Ever moving water channels also are characteristic of this landscape area. Early mappings reveal a "streamlet" passing through the townsite at the location of the present day airstrip (see map 12 on page 97). This observation is substantiated by historic photos showing a small stream passing through the business area (see figure 12 on page 58). Some of the historic cabins that once made up the town appear to have been washed away in the main river channel as it meandered over the years (NPS files, Chisana City Archeological Reports).

Indigenous spruce trees and corresponding understory vegetation characteristic of the area have historic significance. The area as a source of spruce lumber with the resulting sawmills is a character-defining feature. A related aspect emerges from the transportation of lumber to the mining areas. Spruce forests also form sidewalls to enclosed landscape views, particularly at pedestrian scales.

The Commissioner's Court building, "Too Much" Johnson's Cabin, the Commissioner's residence and the Woman's Jail were restored by NPS. The Service restored these buildings with the characteristic saddle-notched or v-notched log construction with gable roofs. These buildings exhibit characteristic detail work in their construction.

Other log buildings such as the saloon and the barn have not been restored. These log cabins are typical of the lower elevation building types found within this landscape. The viewing perspective for these buildings is close-up, featuring views in which construction details can be examined. Thirteen buildings within the privately owned acreage's of this character area were identified as significant and contributing structures in the 1978 Chisana historic district nomination.

The pattern of cabin foundations represents the "boom" town settlement characteristic of mining towns. Historic sources reported that four hundred log cabins existed during the Stampede and Boom periods. Today, evidence of two hundred of these extant cabins has been found in the form of cabin sills, depressions or artifact scatter.

Patterns show the settlement of the community along the contours of Chathenda Creek in an irregular (verses grid) layout and their locations indicate the rise and fall of the Chisana City population. Settlement patterns displays historic Chisana City streets by visually connecting cabin remains.

2.2 Secondary Character-defining Features of the Chisana City Historic Boom Town Area

Two cemeteries are located within this landscape area. One cemetery contains two Alaska Native grave houses while the other cemetery contains seven historic graves and their associated wooden grave markers. One of the latter cemetery's graves belongs to Charles Simons, a prominent local merchant who served as Chisana City's postmaster from 1917 until his death in 1929 and for whom the Simons Trail is named.

Small scale elements and archeological sites in this landscape represent left from the domestic lives of the community. Can scatter, implements and other artifacts contain archeological records of the lives of those who lived in Chisana City during the historical periods.

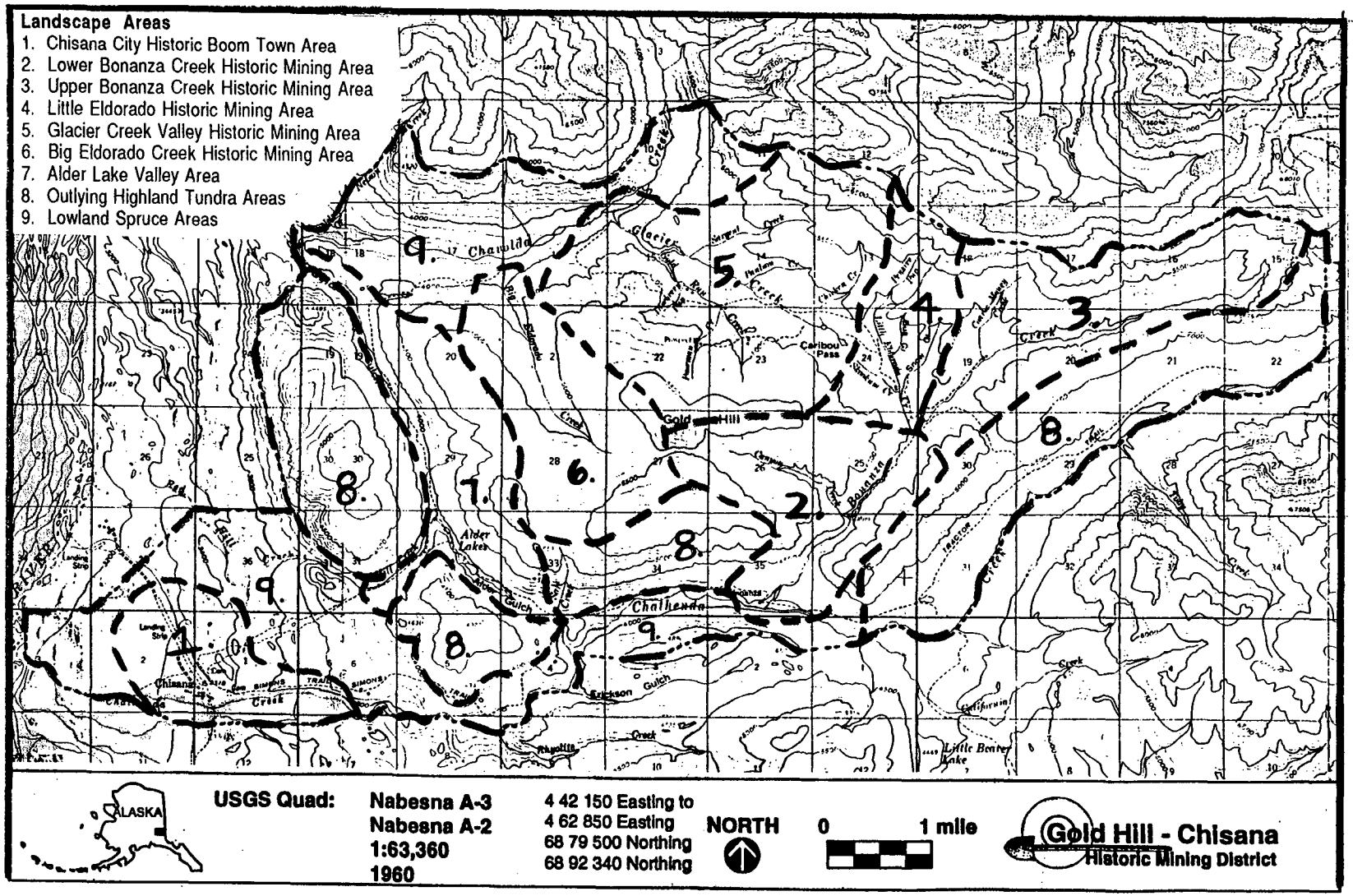
2.3 Management Considerations of the Chisana City Historic Boom Town Area

This character area contains privately owned inholdings. Defined primarily by legal descriptions on a map, the boundaries in the landscape can be erratically identified by an occasional fenceline, road, or sight line in the forest understory.

Large portions of small scale elements and cabin sites have been destroyed by post-1950 bulldozer work. This portion of Chisana City has lost integrity, however, this portion does not impede the overall integrity of Chisana City as a historic feature in this cultural landscape.

Seven additional buildings were considered non-contributing in the 1978 Chisana City historic district nomination. However, the non-contributing buildings are of log construction and do not visually distract from the overall integrity or historic feeling of the site.

Note: A privately owned sawmill is located at Chisana City. Further research is needed to evaluate its influence on the integrity of the site.



Map 15. Landscape Character Areas. USGS base map. Character areas added by the author.

3. Lower Bonanza Creek Historic Mining Area

The Lower Bonanza Creek Historic Mining Area encompasses Bonanza Creek from its mouth at Chathenda Creek, upstream to its junction with Little Eldorado Creek, Canyon Creek and their associated watersheds. The character area known as Lower Bonanza Creek has a high concentration of mining evidence from each of the historical periods. Rough canyon topography typifies this character area and at the lower end of the canyon is the community of Bonanza City.

The town of Bonanza City and the mining claims along lower Bonanza Creek were established as a direct result of the discovery of gold at the mouth of Bonanza Creek. Mining operations continued in this character area through the Stampede, Boom, Bust and Recovery eras. These mining operations in Lower Bonanza Creek embody the distinctive characteristics of placer mining. Primarily, the operations are characteristic of the hydraulic mining of the Recovery Period.

3.1 Primary Character-defining Features of the Lower Bonanza Creek Historic Mining Area

Two cabins and remains of several cabin/tent foundations from the original Bonanza City are located at the mouth of Bonanza Creek, comprising a secondary "node" within the whole Chisana-Gold Hill Landscape. Bonanza City served as a supply center, sawmill site and recreation center.

Winter movement of supplies into Bonanza City from Chisana City followed Chathenda Creek. The Simons Trail and the Red Creek Trail connected Bonanza City to Chisana City during the summer. Historic Horse Trail connected Bonanza City with the mining claim areas. The trail's location on the upper creek bank was a response to the rugged canyon topography of the area. The trail's original "single rut" construction trail followed the creek to the mouth of Little Eldorado Creek. A flume line and ditch built in the trail during the Boom Period, obstructed the route at the upper reaches of this character area.

Most of the character area is above the timber line. As a result, Bonanza City was a city of tents. A few log structures were erected, but most structures were of tent frame construction and many tent sites and artifact scatters were found here. The layout pattern of the structures followed the contours of the hillside which is typical of mining boom towns.

Character-defining views of this area include panoramic over views, enclosed landscape views and feature views. The view of Bonanza City from the bluff on the trail visually connects the mining areas to Bonanza City. The over viewshed of the lower canyon area from Horse Trail and views into the canyon area convey to the viewer the depth and length of this canyon.

A very prominent character-defining feature of this character area is the canyon topography. Difficulties getting into the canyon, increased water velocity and less overburden gravels represent some of the differences created by canyon topography. The canyon's precipitous sides forced miners to use mining operations that rerouted water around the mining operations in the natural channel which was quite different from those used in the upper reaches of the creek. Enclosed views of the canyon focus observations on immediate canyon phenomena, such as the water's velocity, remnants of the mining operations or an occasional animal sighting.

Miners' located mining camps on the upper banks of these canyons because there was no room for a building structure in the canyon (Canyon Workings Cluster). In the case of the Earl Hirst Hydraulic System Cluster, buildings and structures were altered to accommodate steep slopes. Here, a rock wall terrace supported the cabin and in addition, a "two story" outhouse structure demonstrated a creative response to the rugged canyon topography.

The 1930s Earl Hirst Hydraulic System Cluster mining operation (known as NAB-061 and NAB-048) is a prototypical hydraulic operation. Photos provide evidence of the changing sequence through the historic periods (see figures 26, 27 and 28, page 66). This site also contains a related mining camp that shows the difficulties of building in the canyon area. The camp's components include a cabin, an outhouse, a workshop, a doghouse and associated tools all of which provide insightful information to the everyday life of the miner. Both the over viewshed from the trail and a detailed view from the canyon area are necessary to gain understanding of the operation.

The 1930s Eikland-Green Camp Cluster (NAB-047 and associated isolates) provides details of the mining camp and life of the miner including several doghouses and a boiler. Its associated mining operation offers little integrity as a mining operation even with interpretation.

The Fred Best Camp Cluster from an over viewshed provides a look at the spatial layout of the mining camp. Detail views identify the characteristic tent frame construction and other aspects of the 1913-1914 mining camp.

Some isolated dams are valuable components to this Lower Bonanza Creek area, as well. Remnants of a "crib" construction dam (isolate no. 128) show a style of dam unusual for this landscape. The best example of a boomer dam (isolate no. 139)

in this character area is located on Bonanza No. 6 even though better examples can be found in the Upper Bonanza Creek and Gold Run/Glacier Creek character areas. This dam remains important because boomer dams were widely used in this Chisana-Gold Hill Landscape.

The Nelson Hydraulic Mining Cluster contains an impressive water collection system. It is a ditch and flume system that originates at the dam at Castle Rock and extends downstream to the historic claim Bonanza No. 5. The flume includes an impressive trestle along the creek's steep slopes, and much of the flume system remains. Regulator boxes and spillways also are included in this water supply system.

An over viewshed of the mining area of this same cluster exposes a later stage of mining operations. Francaviglia (1991) refers to this as the intensification stage of mining districts. Recovery Era miners extensively mined using hydraulic techniques and later land modifications were carved out by bulldozer. This spot could serve as an interpretive view point if the on-site information were to include the historical photo of Hamshaw's Camp in 1914 and the later historical photo of Nelson's hydraulic mining operation in 1940.

Detail views of the Canyon Creek Prospect Cluster reveal the prospect mining techniques used. The cluster contains all of the components necessary for understanding this type of exploration. Steinberger prospected in this area in 1914 and Aaron Nelson prospected the area in 1915.

The Bonanza Mining Cluster components could demonstrate ground sluicing operations because of the high velocity of the water at this location. Particularly demonstrable is the soil eroding propensity of ground sluicing operations. The type of dam on the site is unidentifiable, but it likely was a wing dam. This cluster is located on the Bonanza Discovery Claim near where Nelson made his gold discovery.

Claim post markers (isolate nos. 117 and 152) show the character-defining boundary markers of this landscape. Small scale elements of this landscape character area include the remains of domestic life and mining activities. Also included are tent sites and artifact scatter. Many small scale elements such as a unique mailbox, boilers, freight sleds and the ubiquitous shovel contribute to the overall character.

3.2 Secondary Character-defining Features of the Lower Bonanza Creek Historic Mining Area

Hamshaw's Camp location has lost integrity of the Boom Period because of subsequent Recovery Period mining destruction. However, the existing hydraulic pit area retains some integrity as a significant element of the Recovery Period.

The 1914-1918 Mid-Bonanza Ground Sluicing Cluster contains the characteristic stacked stone land modification typical of shoveling-in or ground sluicing operations found in the mining district. It probably is one of the few remnants that can be attributed to the Hamshaw operation, even though better examples of shoveling-in can be found elsewhere in the Chisana-Gold Hill landscape.

A 1930s windlass and ground sluicing area (isolate no. 136) and a worked prospect bench dated between 1932 and 1939 (isolate no. 132) remain as examples of prospect mining within this character area. Both of these prospect workings reflect typical responses of the Decline Period. One mining response to MacKay's geological report of 1921 was to probe benches located across from creek gravel areas that had contained little gold.

The Canyon Workings Cluster dated 1919-1932 and 1913-1919, represents the spatial arrangement of canyon mining clusters. The mining camps are located high on the creekbank, while its mining operations are located in the canyon below.

The Canyon Creek Water Diversion Cluster reveals some of the water acquisition infrastructure developed during the Decline Period (1919-1932). Water shortages were typical of this significant period.

Detail views of the Canyon Creek Habitation Cluster (1930s) reveal the domestic life of the miner on Gold Hill. A tent platform, stove remnants, with tools such as a chisel, pick head, a shovel provide intimate information of the miner's daily life.

This character area has good examples of mining infrastructure such as Nelson's Hydraulic Mining Cluster and the Canyon Creek Water Diversion Cluster mentioned above. Dam ruins, ditches and other water related structures (isolates nos. 120 and 126) also contribute to the understanding of the water systems required for mining operations.

The presence of small scale elements within this Chisana-Gold Hill Landscape give indication of the thousands of stampeders that occupied this landscape during the Stampede Period.

3.3 Management Considerations of the Lower Bonanza Creek Historic Mining Area

Active mining claims, Bonanza No. 1-6, are located in this character area. The rights of these claim holders must be upheld.

4. Upper Bonanza Creek Historic Mining Area

The Upper Bonanza Creek Historic Mining Area includes Bonanza Creek from its junction with Little Eldorado Creek to the origins of the creek, Coarse Money Creek and their associated watersheds. The Upper Bonanza Creek Mining Area can be characterized by its gently sloping topography. This headwater portion of Bonanza Creek produced mining conditions unlike those of the Bonanza Creek canyon.

The mining area along upper Bonanza Creek was established as a direct result of the discovery of gold at the mouth of Bonanza Creek. Evidence remains of historic mining techniques and/or mining camps from the Stampede, Boom and the Recovery periods. Mining is known to have occurred continuously throughout all the historic periods in this character area.

4.1 Primary Character-defining Features of the Upper Bonanza Creek Historic Mining Area

Eight Pass Trail enters the mining district and this area from Beaver Lake and Beaver Creek. This trail was recorded by Canadian geologist, D. D. Cairnes during his visit to the area in 1914. He described it as one of the Canadian entry points to the Gold Hill mining district by stampeders. Other transportation routes within this character area are located in the alluvial gravels next to the creek. As a result, these creek trails are not well defined.

The topography in this landscape component is gently sloping. As a result, there are many open, panoramic views in this component landscape and these views contribute to the feeling of isolation typical of mining landscapes. The creek widens out in its upper elevations, allowing for pedestrian movement alongside. This gentle topography also causes the creeks' water to have less volume and less velocity.

Historic photos depicting feature views of historic mining operations show a shoveling-in operation on historic No. 7 (see figure 20, page 64) and another mining operation on No. 11. These Boom Period operations are typical placer mining operations.

The vegetation of the Upper Bonanza Creek Mining Area is mainly of the low shrub cover with areas of alpine tundra. Upper reaches of the Bonanza Creek support upland barren cover vegetation (see vegetation types on site map, page 45).

The altitude difference between the Upper Bonanza Creek area and Lower Bonanza Creek is over two thousand feet. As a result, these upper claims could not be mined as early in the spring as could those at lower elevations because seasonal snow and frozen gravels remained longer in these higher elevations.

The most magnificent view in this character area is from the over viewshed of the Upper Bonanza Water Supply Cluster (1915-1930). Views exposing the length and slope of the flume line, and therefore visually connecting it to the water containment area, help to demonstrate the extent of this water system.

Gentle topography enabled mining camp clusters to be located closer to the mining operations in this Upper Bonanza Creek character area. The Upper Bonanza Habitation Cluster (1940s) presents a typical upper Bonanza Creek mining camp. Response to the natural environment can be seen in the spatial arrangement of the cluster. The camp is typically oriented next to the mining area with ditches and flumes diverting water around the living quarters.

The Upper Bonanza Mining Cluster (1914-1919) shows the resulting landforms from a shoveling-in operation. Windrows in the creek, the dam remnant, the sluicing area and tent locations are spatially clustered together, but the association is not clear from the ground. In addition, the windrows in the creek bottom area leaves potential for erosion of these windrows from pedestrian use. The trail route with ATV and foot traffic through the rock windrows could disturb the shoveling-in formation by moving the rocks from their present parallel alignment.

The Coarse Money Confluence Habitation Cluster (1930) is a typical a mining habitation site surround Gold Hill. The main cabin in this complex is unique to this landscape, however, because it is the only T-shaped cabin in the landscape. This building was once located at the confluence of Bonanza Creek with Little Eldorado Creek where it served as a postal center for the area. Overviews of the site portray the isolation of the mining district. A view of this complex with the horizon behind, reminds the viewer that this is a land of very few inhabitants.

Viewing the Upper Bonanza Hydraulic Cluster (1930s) from an enclosed perspective contributes to an understanding of the vast amount of earth moved through the hydraulic mining operation. In other locations, the natural terrain dwarfs the changes made to the topography. At the Upper Bonanza Hydraulic Cluster, the canyon effect allows a real feel for the amount of overburden moved. Entry from Bonanza Creek moves underneath a flume trestle into the eroded hydraulic pit area.

The hand stacked rock (isolate no. 229) is impressive in its quantity of stacked rock. However, there are other locations in the Chisana-Gold Hill Landscape where the rock has been more carefully stacked and placed. This and another stacked rock

land formation (isolate no. 224) are isolates because there are no sluice boxes or other features associated with them. These stacked rocks (isolate no. 224) could conceivably be the remains of the shoveling-in operation shown in the historic Stanley photograph entitled "Mining on No. 11 Bonanza, Shushana, Alaska, August 1914."

4.2 Secondary Character-defining Features of the Upper Bonanza Creek Historic Mining Area

The Castle Rock Staging Cluster serves as a mining "museum" because the objects found within it have no spatial relationships or relevance other than the site's historic use as a storage area. These objects could be moved to any location, and they are worthy of detail viewing on-site or off. The presence of these objects in this location does not detract from the historic integrity of the site.

The Upper Bonanza Creek Shoveling-in/ Camp Cluster (1930s) is representative of the type of landform modifications that are typical of ground sluicing operations. A ditch also useful in a ground sluicing operation is present too.

Panoramic views of Coarse Money Habitation Clusters #1 and #2 show the characteristic cluster patterns of the mining camps. Together, they illustrate that these development patterns changed little between 1913 (#1) and 1940 (#2). The Upper Bonanza Mining Camp Cluster (1930s) reflects characteristic mining camp spatial patterns as well.

The Upper Bonanza Habitation and Drift Mining Cluster have potential as a good place for detail viewing of a habitation site and drift mining operation. Drift mining is a low water use technique common to this area. This site requires more investigation to determine its integrity and interpretative value.

The presence of small scale elements within this Upper Bonanza Creek Historic Mining Area give indication of the thousands of stampeders that occupied this landscape during the Stampede Period. These elements contribute to the overall integrity of the site.

4.3 Management Considerations of the Upper Bonanza Creek Historic Mining Area

There are active mining claims within the Upper Bonanza Creek Historic Mining Area. These claims are named One Below Discovery, Lucky Discovery, Shamrock and Tony M. The boundaries of these claims are not well defined on the ground, and while some claim corner posts are in place, they are not obvious.

The Capps report indicated that the upper reaches of Bonanza Creek contained a number of prospect claims, numbered to Eighteen. No. 18 was said to have a shaft 85 feet deep, with a 25 feet drift or lateral channel (Brooks et. al., 1915). That portion of the landscape upstream from the current Tony M. or historic Bonanza No. 12 claim requires further research.

5. Little Eldorado Creek Historic Mining Area

The Little Eldorado Creek Historic Mining Area includes Little Eldorado, Skookum and Snow Gulch creeks and associated watersheds. This character area is distinguished as the location of Billy James and Matilda Wales Discovery Claim and the amount of gold found in its creeks.

The mining claim area along Little Eldorado Creek was established soon after the discovery of gold at the mouth of Bonanza Creek. After Nels Nelson staked a discovery claim on Bonanza Creek, Billy James and Matilda Wales traced gold to a tributary and made an even bigger discovery. They named the creek, Little Eldorado. Little Eldorado No. 1 continued to be a rich source of gold throughout the Stampede, Boom, Decline and Recovery eras.

The mining operations in this Little Eldorado Creek drainage character area contain distinctive elements of a placer mining type. The Little Eldorado Discovery Claim is the site where James and Wales made their discovery of gold. This claim continued its high gold yields through the significant historic periods.

5.1 Primary Character-defining Features of the Little Eldorado Creek Historic Mining Area

This character area is the site of the discovery of gold by James and Wales as well as, the location of the largest gold producing claim in the district. Miners recovered more gold from the Little Eldorado No. 1 claim than any other claim in the district.

The unnamed trail that passes through this character area has been heavily traveled by all terrain vehicles (ATVs). The route cuts across the hillside to the north of Little Eldorado Creek and crosses the same creek near its confluence with Skookum Creek. From there, the trail roughly follows a man-made ditch line through Caribou Pass to the Chicken Creek airstrip that lies outside of this character area. The trail becomes muddy and wet in some areas where ATV traffic caused melting of the permafrost. A complete study of the effects of ATV traffic in the area was underway in 1995 by the Environmental staff at Wrangell-St. Elias.

An over viewshed of Little Eldorado Creek from the upper areas of the mouth shows the overall leveling effect of mining. Bedrock here is flat (Capps, 1916) and the repeated reworking of overburden soils has leveled the soils to match the contour of the bedrock.

Within this Little Eldorado Historic Mining character area are extensive ditch systems that supply water to Skookum Creek for mining operations. Important viewpoints of these water supply systems are those which the viewer can connect the ditch and flume line from upper Little Eldorado Creek to the shoveling-in operation on Skookum Creek. Additionally, views of the enhanced ditch from the lakes at the head of Caribou Pass and of several ditches draining the hillsides, help the viewer to understand the extensive water supply system required for the mining operation.

Skookum Creek Mining Cluster (1914-1983) provides an excellent example of ground sluicing operation. Water was used to remove fourteen feet of overburden, which exposed the old channel. Rock was stacked at its edges, out of the way of the mining operations. Later ground sluicing operations found upstream from the first pit, are evident by the windrows, sluice boxes, boomer dams and water acquisition systems found there. Progressive shifting of the stream from the south to the north is well illustrated on the ground as a result of the ground sluicing operation.

Snow Gulch Mining Cluster shows a shoveling-in operation in this extensively mined area. A ditch, flume and handstacks represent the arrangement of the mining operation.

Included in the Snow Gulch Exploration Cluster (1930's) are components demonstrating the test pit and drift mining exploration of the area. A boiler, rocker boxes, test pits and drift pits are evidence of this operation.

The Little Eldorado Drift Mining Cluster is a drift mining operation on Little Eldorado Creek. The windlass and drift pit identify an exploration operation in this extensively mined creek. Nearby Skookum Creek Drift Mining Cluster offers a more graphic picture of a drift mining operation, however. Wood boxes used for lifting soils out of the earth provide an understanding of drift mining.

The Little Eldorado Mining Camp Cluster provides the components necessary to define a typical mining camp. The cabin, sheds and other structures make up the primary parts of this mining camp.

5.2 Secondary Character-defining Features of the Little Eldorado Creek Historic Mining Area

The Little Eldorado Bench Mining Cluster provides evidence of a mining operation that once operated here. The ditch, ditch gate, pole riffles and a sluice area that has lost it original characteristic windrow structure are evidence of a mining operation, but do not provide a complete understanding of a shoveling-in operation.

The Upper Snow Mining Cluster provides components of a mining operation. A ditch, a dam remnant with flume and steam points indicate mining, however, the components fail to provide clear evidence of the type of mining operation.

A water supply infrastucture located on Snow Gulch (Snow Gulch Water Supply Cluster) with a ditch, flume remnants and a possible dam site provide only a small amount of information for understanding the original structures. Additional isolated water supply components are found in the Little Eldorado Historic Mining. They include ditches (isolate nos. 305 and 306), a flume (isolate no. 307) and pipe (isolate no. 317).

The presence of shovels, boundary posts and other small scale elements within this Little Eldorado Historic Mining Area are remnants of the thousands of stampeders that occupied this landscape during the Stampede Period.

5.3 Management Considerations of the Little Eldorado Creek Historic Mining Area

There are active mining claims within this character area. These claims are named Little Eldorado No. 1, Little Eldorado No. 2, Little Eldorado Bench No. 1, Little Eldorado Bench No. 2, Skookum No. 1 and Snow No. 1. The boundaries of these claims are not well defined on the ground and while some claim corner posts are in place, they are not obvious.

6. Glacier Creek Valley Historic Mining Area

The Glacier Creek Valley Historic Mining Area includes Gold Run, Glacier, Poorman, Discovery Pup, Sargent, Paulsen and Chicken creeks and their associated watersheds. The Glacier Creek Valley Mining Area is situated adjacent to the richest source of gold on Gold Hill—the Little Eldorado Creek mining area. The area embodies a third but short lived community within this landscape, known as Woodrow. Mining started here during the Stampede Era and continued throughout the significant historical periods. Mining technology from all periods remain in the area today.

6.1 Primary Character-defining Features of the Glacier Creek Valley Historic Mining Area

Some historic trails through this area have been used for mechanized traffic in recent years. These recently altered trails disrupt the historic character of the area, particularly where they cross open tundra. In contrast, the trail along Glacier Creek and the lower portion of Gold Run Creek is of the historic "single rut" construction type and is in its historic location.

Views of the Chavolda Creek Sawmill Cluster are important in understanding the supporting land uses needed to maintain the mining operations. This differentiation in land use is typical of mining landscapes. The cabin on this site is in good condition. However, the sawmill lacks the components necessary to articulate a sawmill operation. Two large saw blades, a trolley wheel and a sawdust pile remain to indicate the former use. Tree stumps also are present in the landscape to indicate the sawmill site, which is located in the spruce forest area of Chavolda Creek. A significant vegetation line between the wooded area and the tundra is evident from an overview toward Gold Hill. This sawmill was probably part of the Woodrow community that existed only during the early Stampede Period.

The Glacier Creek Camp Cluster (NAB-071, mid 1930s) is located on the upper rim of the creek while the mining operations are located in the canyon areas below. Only the historic trail connects them. The camp is an excellent example of the typical cluster arrangement of buildings and structures within mining camps. Views from this location also show a significant vegetation line between the wooded area and the tundra (see figure 48).

Views of the Glacier Creek Mining Cluster (NAB-070, Early Rush Years) show an excellent example of a stacked rock terrace, associated upright steam boiler, a regulator, sluice box and remnants of a dam with box wall construction. These components tell the story of a shoveling-in or ground sluicing operation.

The over viewshed of the Dipple's Mining Camp Cluster from the downstream hillside provides an opportunity to see the landform modifications that result from the diversion of creek channels. In this case, the stream was used to remove the hill side (see figure 49 and figure 50). In the same area, ditches taking water from the Discovery Pup tributary were used to cut the bank of the old stream bank. The structures and buildings found here reflect the spatial arrangement of a typical mining camp. In addition, many other small scale features such as, boilers, dump boxes and other mining equipment contribute to one's understanding of the miner's daily life.

One of the more spectacular views of a mining operation and camp are those views of the Carroll Mining Camp Cluster (1920s). This is one of the more complete mining operations in the Chisana-Gold Hill area. The stacked rock, a boomer dam, rocker boxes, sluice sections and a water ditch from Poorman Creek, along with the integrity of the operation, make it a discernible example of a shoveling-in and ground sluicing operation. The mining camp is located nearby and is one of the best preserved early mining camps. The primary cabin of characteristic planed wood, a bunkhouse, a three sided shed, a meat cache, doghouses and an outhouse are typical of Gold Hill mining camps. Many interesting details from inside the buildings, such as a divided silverware drawer and bunk beds, make this an extremely interesting camp to view.

The Poorman Creek Mining Cluster contains components necessary for understanding a ground sluicing operation. The site also contains adequate remnants for interpreting a shoveling-in operation.

Figure 48. Panoramic view of the edge of the tree line at the mouth of Glacier Creek, 1995. Photo: the author.

The Upper Glacier Creek Mining Cluster contains the components necessary to understand a ground sluicing operation. The diversion dam is intact, which is not the case at any other location in the Chisana-Gold Hill Landscape.

Two water infrastructure isolates, a boomer dam (isolate no. 412) and a chicken wire trash dam (isolate no. 413) are unique and intact water structures that offer opportunities for interpretation. Because they are in excellent condition, they are valuable isolates.

6.2 Secondary Character-defining Features of the Glacier Creek Valley Historic Mining Area

In the wooded area near the sawmill, a mining camp (NAB-083) of the 1920s, there is an elaborate camp that may have been part of the gold rush community of Woodrow. Several doghouses and doghouse ruins indicate the winter use of dogsled transportation. The location of the camp next to Chathenda Creek further promotes the evidence of a winter transportation route to Chisana. A falls and other rock outcropping on Glacier Creek probably prevented the use of Glacier Creek as a winter route.

The Upper Glacier Creek Prospect Cluster lacks the components necessary to understand prospect mining. No historical references are made to this site.

The churn drill at NAB-067 is in good condition and provides a good opportunity for interpreting the churn drill prospect operation. However, it need not remain in that location because there is nothing about the site that identifies it as a churn drill prospect operation. No historical references are made to this site.

Water infrastructure isolates include dam remnants (isolate nos. 406, 408 and 410), ditches (isolate nos. 423 and 424) and flume remnant (isolate no. 426). These recurring elements reveal the patterns of mining that occurred in this Glacier Creek Valley Historic Mining Area.

Views of the Historic #2 Below Mining Camp Cluster are difficult to discern from the ground. Specifically, the tent site and associated camp artifacts are difficult to identify because mosses and other first generation vegetation have covered the site's features. Once identified, however, the habitation cluster retains integrity in its typical-mining-camp arrangement.

The Upper Gold Run Habitation Camp Cluster is not historic but a relatively recent construction. The construction style of this cabin is compatible with the other cabins found above the timber line within the mining district. The cluster includes a cabin, a bunkhouse, a storage shed, diesel engine and pump, an outhouse, a terrace, a roadway, a tent site and associated artifact scatter. Nearby mining components of the site include a dam and a ditch.

The presence of shovels, riffles and other small scale elements within this Glacier Creek Valley Historic Mining Area are remnants of the thousands of stampeders that occupied this landscape during the Stampede Period.

6.3 Management Considerations of the Glacier Creek Valley Historic Mining Area

There are active mining claims within this character area. These claims are named Jay No. 1, Jay No. 2, Jay No. 3 and Gold Run Below. The boundaries of these claims are not well defined on the ground, and while some claim corner posts are in place, they are not obvious.

A unique conical rock pile (isolate no. 428) requires further investigation. More knowledge is necessary to make an evaluation.

Figure 49. Old creek channel on the left and current channel on the right, 1995. Photo: the author.

Figure 50. Soils are absent from the right side of this natural bluff because of mining, 1995. Photo: the author.

7. Big Eldorado Creek Historic Mining Area

The Big Eldorado Creek Historic Mining Area includes Big Eldorado Creek and associated watershed. This mining claim area along Big Eldorado Creek was established soon after the discovery of gold at the mouth of Bonanza Creek. Big Eldorado Creek continued to be mined throughout the Stampede, Boom, Decline and Recovery eras. The mining operations in this Big Eldorado Creek drainage character area contain distinctive elements of placer mining; particularly exploration mining, such as drift and prospect techniques and lode exploration.

7.1 Primary Character-defining Features of the Big Eldorado Creek Historic Mining Area

Some historic trails through this area have been used for mechanized traffic in recent years. These recently altered trails disrupt the area's historic character, particularly where the trails cross open tundra. Another trail follows along the western side of the creek which is of the historic "single rut" construction type and in its historic location.

Gold found on this creek was considered to be unlike the gold found on all other drainages of Gold Hill. The gold of Big Eldorado Creek was brighter, more angular and demonstrated no evidence of stream wear, because no glacial action had affected the old stream channels on this creek area. Prospecting required deeper shafts and searching in areas with larger less worn gravels.

The visual impact of rock piles on this creek is impressive. There are twelve separate rock piles in close proximity in this character area. Reports from archeological surveys and personal conversations with the archeologists indicate distinctive workmanship in the stacked rock construction.

The Big Eldorado Drift Mining Cluster provides a good example of drift mining, and is located in the area where the Peterson brothers filed for a lode claim. A drift mining cluster of the Recovery Period is found on Big Eldorado Creek. The Upper Big Eldorado Drift Mining Cluster has the windlass and a platform, useful in interpreting a drift mining operation. The contour elevations also place this cluster at the location where the Peterson brothers filed for the "Monte Carlo Lode" prospect.

The Upper Big Eldorado Prospect Cluster lacks only the moveable items, such as sluice boxes and rocker boxes necessary for an interpretation of prospect mining. According to historical records, Matilda Wales staked Big Eldorado No. 2 Above and this Upper Big Eldorado Prospect Cluster probably lies on Wales' claim.

Stevens/Peterson Mining Cluster has components that make up a ground sluicing and shoveling-in cluster. Archeological reports on this cluster are confusing and a determination as to whether a shoveling-in operation could be interpreted from this cluster is undetermined. Historic accounts specifically reference the Stevens operation as a ground sluicing site.

7.2 Secondary Character-defining Features of the Big Eldorado Creek Historic Mining Area

The Upper Big Eldorado Water Collection consists of ditch remnants and a dam that provide water to mining operations on Big Eldorado Creek. Water infrastructure isolates included in this area are the stone diversion dam (isolate no. 655) and a ditch (isolate no. 673).

The Lower Big Eldorado Shoveling-in Cluster contains the components necessary for understanding the shoveling-in operation. Extensive rock piles are located in this cluster. Historic references indicate that the Peterson Brothers mined here in 1934-35.

The Lower Big Eldorado Habitation Cluster includes components that identify a habitation cluster. Mining components on the site include a rock dam, stacked stone, two ditches and hand stacked stone.

The presence of shovels and other small scale elements within this Big Eldorado Creek Historic Mining Area are remnants of the thousands of stampeders that occupied this landscape during the Stampede Period.

7.3 Management Considerations of the Big Eldorado Creek Historic Mining Area

There are active mining claims within this character area. These claims are named Ole Nos. 1-5, Rocky I and Tony I. Boundaries for these claims are not well defined on the ground. While some claim corner posts are in place, they are not obvious. Note: For this report, researches made no on-site observations of the Big Eldorado Creek. This assessment of the clusters is from archeological and other secondhand reports.

8. Alder Lake Valley Area

The Alder Lakes Valley Area includes the Alder Lake Valley, Dry Gulch and the upper portions of the Red Hill River basin. The trade routes that cross this character area represent the most important character feature even though mining was present in this character area, as well.

The old channel gravels in the Alder Lakes Valley Area are similar to those found on the peak of Gold Hill and mining began in the area soon after the discovery of gold at the mouth of Bonanza Creek. The Alder Lakes Valley Area was sporadically mined in the Boom and Recovery eras.

8.1 Primary Character-defining Features of the Alder Lake Valley Area

The topography of the Alder Lake Valley Area is an open valley with steep mountains on either side. It has scenic open valley views with typical picturesque mountain lakes. The surrounding vegetation is mixed scrub and tussock.

Important trade routes cut through this area to supply the mining areas which relied on Chisana City. The Red Hill Creek Trail divides into south Alder Gulch Trail and north Dry Gulch Trail.

The remains of two drift mining operations are found in the Alder Gulch Valley Area (1931, Nab-043 and Nab-085). These are good examples of drift mining operations. The location of these drift mining operation reflect the prospector's reaction to the geology of the site. The channel gravels found in the Alder Lake Valley Area are similar to those found on the peak of Gold Hill. This similarity would encourage a prospector to sink drift pits into these gravels searching for a gold bearing bedrock layer.

8.2 Secondary Character-defining Features of the Alder Lake Valley Area

The presence of shovels and other small scale elements within this Alder Lake Valley Area are remnants of the thousands of stampeders that occupied this landscape during the Stampede Period. These elements contribute to the overall integrity of the site.

8.3 Management Considerations of the Alder Lake Valley Area

Historical reports identify drift mining shafts at the north end of this character area as well. Further investigation is advised.

9. Outlying Highland Tundra Areas

This character area is known as the Outlying Highland Tundra Areas which include Red Hill and the highland areas between Upper Bonanza Creek and Chathenda Creek. These character areas were initially probed for gold, and later abandoned for more lucrative mining areas.

9.1 Primary Character-defining Features of the Outlying Highland Tundra Areas

The predominant vegetation of this character area is Alpine tundra which consists of high altitude vegetative stands dominated by non-woody vegetation. This Alpine tundra can contain extensive patches of barren ground. Shrubs may contribute up to twenty five percent cover.

Eight Pass Trail cuts through the Chathenda Creek portion of the Outlying Highland Tundra Areas. Stampeders that approached the Chisana-Gold Hill landscape from southern routes might have traveled the Eight Pass Trail.

These Outlying Highland Tundra areas have test pits and other typical prospecting remnants of the Stampede Period. Later, during the Recovery Period, the lower Chathenda Creek portion of this character area was prospected for lode claims. Pits and collapsed shafts remain as evidence.

This character area contains relatively low concentration of cultural artifacts. Because these Outlying Highland Tundra areas contained little gold, miners quickly moved to more lucrative ground. Throughout the historic periods the areas are given little attention other than the routes that passed through them.

10. Lowland Spruce Areas

The lowlands of Chathenda Creek, Chavolda Creek and lowlands around Chisana City make up the Lowland Spruce Area. Their importance in this landscape is the availability of lumber at these locations and the lack of lumber throughout the remainder of the landscape.

10.1 Primary Character-defining Features of the Lowland Spruce Areas

The primary characteristic of this character area is the forest vegetation found, which provided lumber for the mining areas. As a result, saw mills were located in this character area during each of the significant mining periods.

Simons Trail passes through the Lowland Spruce Areas as it travels from Chisana City to the mining area. This was the main trail used to supply goods to the mining areas from Chisana City.

PART II: TREATMENT

I. TREATMENT OBJECTIVES

1. Introduction
2. Statement Of Significance

Note: This statement was taken directly from the National Register nomination.

3. Management
   - 3.1 Management Philosophy
   - 3.2 Management Objectives
   - 3.3 Management Zones
4. Policy, Guidelines and Standards

I. TREATMENT OBJECTIVES

1. Introduction

This section provides the background and objectives for the treatment and management of the Chisana-Gold Hill Historic Landscape. Included first is a statement of significance which identifies the relationship between the Chisana district and its historical context. Then, included are management topics which cover a management philosophy, management objectives, and the management zones for the Chisana-Gold Hill Landscape. Finally, a listing is included of the underlying policy guidelines and standards used for the treatment recommendations.

2. Statement of Significance

The scene of Alaska's last important gold rush, the Chisana district played a key role in the history of interior Alaska. While few struck it rich, the resulting demand for materials and supplies helped establish regional transportation networks, encouraged supporting industries and hastened the exploration and settlement of both the Copper and Tanana Basins. The distinct association with such events justifies the district's inclusion under National Register Criterion A.

The Chisana district was particularly significant from 1913 to 1915, the period encompassing its discovery, stampede and boom. It also retained some importance through 1960, when the last of its original non-native residents died. By then, several had become regionally significant figures.

Former Klondike stampeders and prototypical prospectors William E. "Billy" James and Nels P. Nelson, for example, made the first gold discoveries in the Chisana district, thereby precipitating the Chisana rush. Both subsequently devoted the rest of their lives to developing mining properties in the district.

Shushanna Joe, an Upper Tanana Native whose traditional territory included the entire Chisana region, guided James and Nelson to the site of their Bonanza Creek discovery. He subsequently spent the remainder of his life in the area, working as a trapper, market hunter, prospector and miner, before dying in Chisana City about 1960. Joe exemplified the major but often neglected role played by Alaska Natives in advancing the territory's mining frontier.

Carl F. Whitham also was present at the time of the Chisana discovery and mined in the vicinity for more than a decade. He eventually moved about thirty-five miles west to a site near the Nabesna River where he established and operated the Nabesna Mine, now listed on the National Register of Historic Places.

Anthony J. Dimond mined in Alaska's Nizina district and practiced law in Valdez before being appointed the U.S. Commissioner of the Chisana district. After leaving Chisana, he served as mayor of Valdez and eventually gained regional significance as Alaska's non-voting delegate to the U.S. Congress.

Association with such individuals justifies the Chisana district's inclusion under National Register Criterion B.

A mining property possesses significance under Criterion C if it embodies "the distinctive characteristics of a type, period, or method of construction," or represents "a significant and distinguishable entity whose components can lack individual distinction" (National, 1991) Physical characteristics can be demonstrated in many ways. The organization of space reflected in the arrangement, division and linkage of camps, mining areas and water distribution systems, for example, illustrates distinctive regional land use patterns. Even crudely constructed vernacular buildings, like cabins, sheds and privies, typify local trends in design, style and method of construction.

Embodying its period of early twentieth century, small-scale, placer mining, Chisana's cultural landscape superbly illustrates both its mining processes and its evolutionary sequence. Unusually complex, it retains examples of virtually all of its historic components, including a town, two town sites, numerous tent camps, two sawmill sites, various water diversion and delivery systems, a full range of hand, hydraulic and mechanical mining operations and an associated transportation network. It also contains a wide assortment of small-scale features, such as sluice and rocker boxes, metal mining boilers, steampoints, hydraulic nozzles and metal penstock pipe, as well as more ephemeral elements like sled and wagon remnants and tool, trash and domestic artifact scatters. Such a complex, complete and significant mining system qualifies for inclusion under National Register Criterion C.

A mining property is deemed to be significant under Criterion D if it is believed to preserve historically important information. The Chisana district contains data which can be vital to any wider, comparative study of twentieth century placer mining. Its excellent examples of hand-mining methods, for example, are relatively rare because evidence of such activity elsewhere often was obliterated by subsequent hydraulic or dredging epochs. Further investigations in the Chisana district also could address key questions regarding mining variability and change. The timing, speed and conditions under

which innovations occurred, for example, are likely to be especially important. Excavations could also provide additional social data, including a better estimate of the district's population, the role played by women and Alaska Natives, the nature of the miner's material culture and the production, distribution and consumption of commodities.

The Chisana Historic Landscape contains several properties which would normally qualify as National Register Criteria Considerations (exceptions) under B, D, or F. These include two buildings which have been moved from their original locations, three small cemeteries adjacent to Chisana City and a commemorative monument. Both relocated buildings, however, are intimately associated with Nels P. Nelson, a regionally significant miner and therefore still qualify for inclusion.

While not contributing to this nomination, all three of the community's cemeteries remain compatible with it. One contains the remains of Shushanna Joe, the Alaska Native who guided James and Nelson to the site of their discovery. Charles Simons, a prominent local merchant who served as Chisana City's postmaster from 1917 until his death in 1929, is buried in another. The third cemetery contains a group of Alaska Native grave houses which probably date from the 1930s.

The commemorative monument is compatible as well. Erected by local resident Ivan Thorall in the 1960s to commemorate the district's miners, it contains the ashes of pioneer miner N. P. Nelson.

The integrity of the district, as defined by the continuation of its original mining uses, methods and systems, remains unusually strong. It is this longevity, combined with the district's extensive physical and documentary evidence which provides the basis for evaluating its historic significance.

3. Management

3.1 Management Philosophy

The management and treatment philosophy for the Chisana-Gold Hill Landscape is to present the historic mining theme of the Chisana-Gold Hill Landscape to the American public in an understandable manner, to manage the area for its cultural values, and to uphold the rights of the claim and landholders within this landscape. This philosophy originated from preliminary objectives set by the Wrangell-St. Elias Cultural Resource staff and information obtained from a round table meeting with all departments of the Park staff.

This vernacular landscape evolved through the use and occupancy of the mining culture on this land. Because the land virtually was unchanged by human cultures prior to the Chisana Stampede, all landscape changes during the historic periods are significant. Only those cultural elements introduced since 1945 are not significant to this historic landscape. However, since relatively little of the landscape has changed since 1945 and because most of the changes that have occurred are consistent with the historic industrial use, many of the post-historical changes are compatible with the historic character. Even though these non-significant elements are not historic, they still may be congruent with the vernacular mining landscape. The management directive however, is to present only the *historic* mining theme in the Chisana-Gold Hill Landscape.

In order to manage the Chisana-Gold Hill Landscape for its cultural values, a focus must be placed on protecting cultural resources. Plans must include minimal staff to regulate visitors in the Chisana-Gold Hill area because of the limited staff currently available to regulate this 13,200,000 acre park and preserve. The management directive to protect cultural resources from visitor pilfering is to encourage visitors' understanding of the resource.

The rights of private property owners and mining claim holders are important considerations for management, as well. It is the Park's charge to uphold the rights of these citizens while protecting the cultural rescues.

The above management ideals conflict in implementation. The resolve therefore, is to appraise the cultural resources to allow management to make decisions which do not compromise the historic landscape in order to uphold claim holder's rights.

3.2 Management Objectives

GOAL:

To preserve representative examples of cultural landscape features in the Gold Hill-Chisana Landscape such as structures, mining sites, mining technologies, water and transportation systems and modifications of landforms that have historical significance in the landscape, and thereby reinforce the mining theme in the history of Wrangell-St. Elias National Park and Preserve.

GENERAL ACTIONS:

1. Manage the concentration of resources in the Gold Hill -Chisana area as a system of both cultural and natural features.

2. Develop a preservation plan for Gold Hill which divides cultural resources into the following categories.

Category I. Preservation—actively preserve those unique and representative features that contribute to the cultural landscape character of Gold Hill.

Category II. Protection—no active preservation/intervention proposed to preserve cultural features; obtain additional documentary information as needed when cultural features are threatened with loss, and allow to deteriorate in place.

Category III. Release—"landscape restoration"—restore land to natural conditions in order to enhance natural resources and protect overall cultural patterns.

3. Develop area wide Artifact Collection Management Plan which gathers unique or representative artifacts of the area in order to prevent the loss of significant interpretive and scientific information.

4. Produce Special History Study of the Gold Hill area, addressing mining activities and physical development of the landscape; incorporate all survey data into the GIS mapping program.

5. Restrict All-Terrain Vehicles (ATV) for mining use to existing trails to reduce impact on historic routes/landscape. Rehabilitate and stabilize existing trails throughout the Gold Hill area to minimize impact on landscape.

6. Develop interpretive information to enhance, promote and direct visitor access, and deepen visitor understanding of the area.

3.3 Management Zones

Management zones in the Chisana-Gold Hill Landscape are broad landscape management areas for basic management planning. The complexity of this landscape commands scrutiny for some of these zones while others require only occasional attention. The following management zones were created from the following criteria:

1) Landscape character areas
2) Historic integrity of cultural resources
3) Areas of concentration of cultural resources
   *Priorities for resources
   —Sites that provide visitors with an understanding of mining activity/technology and physical relationship to the landscape
   —Site/Systems that reflect and are representative of a specific type of mining
   —Cultural resources in exceptional physical condition
4) Active mining claims or private property which contains cultural resources protected by NPS

ZONE 1
Landscape Areas Nos. 2,3, 4, 5 and 6.
Areas with the following characteristics:

1. a high concentration of cultural features
2. cultural features with a high level of integrity
3. a concentration of small scale cultural features with little individual significance but which contribute to the historic setting of the site
4. high potential for interpretation
5. the NPS owns only the surface rights and the mineral rights belong to a second party

ZONE 2
Landscape Areas Nos. 7,8 and 9.
Areas with the following characteristics:

1. a low concentration of cultural features
2. cultural features with a high level of integrity
3. a concentration of small scale cultural features with little individual significance but which contribute to the historic setting of the site
4. the NPS owns both surface and mineral rights

ZONE 3
Landscape Area No. 1
Areas with the following characteristics:

1. a concentration of cultural features
2. cultural features with a high level of integrity
3. a concentration of small scale cultural features with little individual significance but which contribute to the historic setting of the site
4. property not owned by the NPS

4. Policy, Guidelines and Standards

Treatment is guided by policy, guidelines and standards contained within *NPS Management Policies, Cultural Resource Management Guideline, NPS-28 and The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.*

II. TREATMENT RECOMMENDATIONS

1. Introduction
2. Chisana-Historic Boom Town Area
3. Lower Bonanza Creek Historic Mining Area
4. Upper Bonanza Creek Historic Mining Area
5. Little Eldorado Creek Historic Mining Area
6. Glacier Creek Valley Historic Mining Area
7. Big Eldorado Creek Historic Mining Area
8. Alder Lake Valley Area
9. Outlying Highland Tundra Areas
10. Lowland Spruce Areas

III. TREATMENT RECOMMENDATIONS

1. Introduction

Preservation is the primary treatment for the Chisana-Gold Hill Landscape. Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. The focus for work is ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction (Birnbaum, 1996). Furthermore, the following standards for the Chisana-Gold Hill Landscape evolved from the Standards for Preservation as stated in The Secretary of the Interior's Standards for the Treatment of Historic Properties with *Guidelines for the Treatment of Cultural Landscapes* (Ibid.).

1. 1 The Chisana-Gold Hill Landscape will continue its historical use unless mining endangers distinctive materials, features, spaces, or spatial relationships.

1.2 The historic mining character of the Chisana-Gold Hill Landscape will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize the Chisana-Gold Hill Landscape will be avoided.

1.3 This Chisana-Gold Hill Landscape will be recognized as a physical record of the industrial mining that occurred during its Stampede, Boom, Decline and Recovery Periods in this isolated Alaska community known as the Chisana Mining District.

1.4 Changes to the Chisana-Gold Hill Landscape that occurred after the Stampede Period (Boom, Decline and Recovery Periods) and have acquired historic significance in their own right will be retained and preserved.

1.5 Distinctive examples of structures, mining operations, mining technologies, water infrastructures, landform modifications, and other features that characterize this mining landscape will be preserved.

1.6 The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration necessitates repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

1.7 Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

1.8 Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

The following treatment recommendations follow the Guidelines for Preserving Cultural Landscapes. Spatial organization and land patterns; features such as topography, vegetation, and circulation; and materials define the character of a cultural landscape (Birnbaum, 1996). These recommendations are designed to preserve the primary character-defining features within this Chisana-Gold Hill Landscape. Following the management objectives, these recommendations give protection treatments to those secondary character features with less integrity and a lesser level of significance.

2. Chisana-Historic Boom Town Area

The objective of the treatment recommendations for the Chisana-Historic Boom Town Area is to preserve the historical character of the Chisana City Town Site as the central hub and supply center of this mining landscape. The recommendations also are designed to preserve the character of this area as the miners' winter residence and to preserve the building styles reflecting the availability of lumber at this location within the landscape.

2.1 Spatial Organization And Land Patterns

The spatial organization and land patterns are among the more significant character-defining features within this mining landscape. Preservation treatments are recommended for the following features to retain the patterns established during the historical periods:

Recommendation: Maintain Chisana's identify as the supply center or "node" of the circulation routes within the landscape by promoting its location as a trade center. This area is <u>not</u> to be considered a mining area, but a trading and supply center which serves the remainder of the landscape.

Discussion: This trade center would serve as a central area featuring shops, a mail center, a Park and Preserve ranger station, and other general commerce. NPS guidelines, of course, only allow true commerce by permit on Park and Preserve property. Any commerce permitted should follow the historic intent of this landscape

as a mining supply center.

Particular suggested features include an interpretive center which provides the visitor with an initial source of information reflecting what the historic traveler might have experienced. Included (but not excluding other items) would be a map indicating the mining areas, a brief history, directions to the mining area, samples of the types of artifacts found, private land and claim areas and other general background information. Such interpretive material may or may not replicate the experience of the original stampeders that arrived at Chisana City because their information sources included from places like restaurants, the Miner's Home Bar, the Commissioner's Court and other establishments within the town.

In the Lindblom report of his historic trip to the Chisana district in 1913, he wrote of a sign post directing them to the "Diggings on Johnson Creek" (Lindblom, manuscript). An interpretive kiosk at the airstrip also would reflect that historic experience. This kiosk would direct visitors to various areas, identify private lands within the landscape, and also would identify privately owned mining claims within the landscape.

A Park ranger station and/or quarters providing a sense of authority, is another needed function that follows historic use patterns for this character area. The Commissioner's Court and residence (previously restored buildings in Chisana City) set the precedence for the headquarters for a regulation body and the associated residence within the mining district.

In addition, the commerce activities located on private properties within this landscape follow historic use patterns and should be encouraged to continue. Historically this area served as a trade center which allowed visitors to exist in this landscape. Among the historic commerce activities at Chisana City were freighting services, restaurants, saloons, gambling houses, hotels, clothing stores, hardware stores, meat markets, barber shops, baths and boarding houses (*Dawson Daily News*, December 10, 1913 and December 13, 1913).

Recommendation: Maintain this area's identity as a lumber supply center and trade center for the landscape by continuing to permit personal use of green logs.

Discussion: An important facet of the historic character of this area is its identity as a lumber supply center. Currently, residents of Chisana City are permitted to cut green lumber for personal use. Although this lumbering practice uses lesser quantities of wood than that which occurred during the Stampede Period, the practice provides a perpetual source for the presence of cut tree stumps characteristic of historic practices.

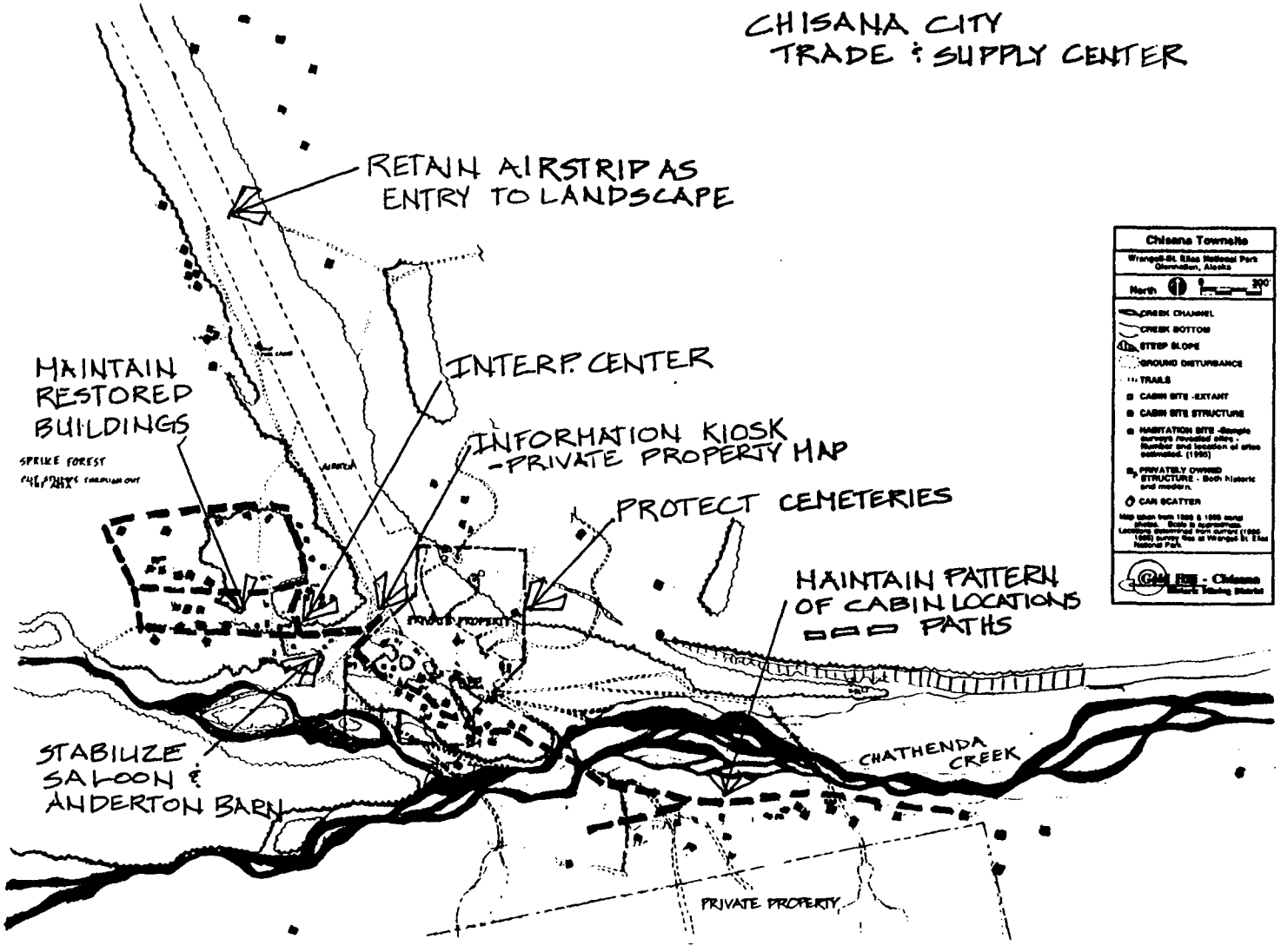
Recommendation: Retain the Chisana City airstrip as the single main entry route into this landscape.

Discussion: After the establishment of Chisana City at the mouth of Chathenda Creek in 1913 the site increasingly became the main entry and exit point to this landscape. There were routes entering the landscape at various other points separate from Chisana City during the Stampede and Boom Periods, but by the Recovery Period most entries into the landscape were made through Chisana City.

By limiting the main entry route into this landscape to the Chisana City airstrip (as opposed to an airstrip on Gold Hill) the historical integrity of the spatial organization of the landscape is preserved. Freighting goods from Chisana City to the mining areas on Gold Hill was a significant trade associated with the mining landscape and it demonstrates differentiation in this mining landscape. Since miners were not self-sufficient, the culture also included supporting roles such as these freighting operators.

Recommendation: Maintain the pattern of extant cabins to represent the characteristic "boom" town settlement along the contours of Chathenda Creek. This recommendation can be accomplished by the following actions:
*Reveal the historical spatial definition by clearing and maintaining vegetation from each cabin site. *Develop interpretive mapping to define the area where spatial patterns are no longer evident due to post-historic bulldozing.
*Establish paths and/or roadways along extant cabins in a pattern that follow the streets of the historic Chisana City.

Discussion: Of the four hundred cabins that existed in 1913 and 1914, few remain today. Archeologists have located approximately two hundred cabin sites with varying amounts of remains. The locations of these extant cabin sites (see accompanying Chisana City map) follow the contours of Chathenda Creek. Historic photos supply another indication of the non-block formation of the streets in this historic town. Historic streets are no longer negligible and probable street layouts have been established from the locations of these cabins, historic reports, and the 'fronts' of the extant cabins. Routes established within



Map 16. Chisana City Historic Boom Town Area. Map: the author.

Chisana City can follow closely to the interpreted historic route patterns and still respond to the current circulation needs in the area.

An area of Chisana City is known to have been destroyed by bulldozer in the 1950s or 1960s. There is little available information identifying spatial patterns of this bulldozed area. This area should be treated as an area of the historic city that has lost historic integrity.

2.2 Circulation

The circulation features within this landscape have generally retained integrity in their locations except in the Chisana City townsite. With this in mind, the overall circulation goals are to provide for circulation routes which adhere closely to historic routes while accommodating the current visitation needs. The following active preservation treatment actions are recommended for these cultural features.

Recommendation: Retain the existing Simons Trail and the Red Hill Creek Trails as the routes used to access the Gold Hill mining area. This recommendation can be accomplished by the following actions:
*Map and re-establish the existing Simons Trail and the Red Hill Creek Trails.
*Maintain these trails through their use as active foot trails and the application of non-destructive seasonal trail-blazing techniques.
*Determine from an overall trail assessment the possibility of a trail to be used as a handicapped accessible All Terrain Vehicle (ATV) trail (permit use only).

Discussion: The Simons Trail and Red Creek Trail routes depart from Chisana City and continue through other character areas within the Chisana-Gold Hill landscape. Some parts of the trails have become overgrown and in some places illegible from non-use. Re-establishing these routes requires environmentally friendly trail blazing and trail hardening techniques. At least one portion of the Red Hill Creek Trail near Chisana City has been used by ATVs.

2.3 Vegetation

Recommendations for vegetation features reflect the broad vegetation types indigenous to this landscape. It is the locations of these broad vegetation types that are essential to understanding the effect of vegetation on the historic culture. The following active preservation treatment is recommended for this cultural feature.

Recommendation: Work with the natural resource staff to develop a vegetation management plan for the area that maintains the line of demarcation between the forest edge and the contrasting upland scrub and tundra.

Discussion: The goal is to maintain the natural division between the upland areas where lumber generally was unavailable and the contrasting lowland areas where the lumber was harvested for use on Gold Hill. For example, any actions that would remove the timber areas would destroy the historic integrity of the vegetation and its effect on the mining within this Chisana-Gold Hill Landscape.

2.4 Topography

Topography features in this Chisana City Historic Boom Town Area are broad, reflecting the low elevation of the Chisana River at this point. These features require protection but no intervention of the natural maturation process is needed.

Recommendation: Maintaining the location of Chisana City at the confluence of Chathenda Creek and Chisana River where the climate moderating influences from spruce tree forests, landform formations and low elevation differences make it an ideal winter residence area.

Discussion: Chisana City should not be relocated to another location within this landscape. The natural topographical conditions reflect the historic reasons for choosing this as a townsite.

2.5 Water Features

Water features within this character area are primarily the natural Chathenda Creek and Chisana River features. These features require protection but no intervention of the natural maturation process is required.

Recommendation: Allow the ever moving water channels characteristic of this landscape area to continue. If cultural features are in danger because of these changing patterns, the features are to be documented and unique artifacts collected. Otherwise, natural processes can continue unabated.

Discussion: Early maps and photos of Chisana City reveal a channel of the Chathenda Creek running though the town in the location of the present day airstrip. During natural coarse alterations and floods, some cabins of the Chisana City townsite are believed to have perished in its path. At-

tempts at controlling the natural flow patterns of these water channels would . Attempts to dam, weir or control these water channels within this Chisana City Historic Boom Town Area would not follow historic precedence.

2.6 Structures, Furnishings and Objects

Buildings, building sites and their furnishings, cemetery sites, and general artifact scatter offer a great deal to the identity of the Chisana City Historic Boom Town Area. These structures and objects characterize the daily living patterns of the mining community. The following active preservation treatments are recommended for these cultural features.

Recommendation: Four restored buildings, the Commissioner's Court, the Commissioner's Cabin, Sidney 'Too Much' Johnson's cabin and the Woman's' Jail, are to be maintained by using non-destructive methods of seasonal cleaning and repair.

Recommendation: Preserve the character of Chisana City as a trade center by stabilizing the buildings known as the saloon and the Lou Anderton barn with its associated corral. This recommendation can be accomplished by the following actions:
*Evaluate treatment through Historic Structure Reports (HSR).
*Protect buildings, associated structures, furnishings and objects until HSRs are completed, by using temporary bracing, temporary roofing and other non-destructive methods to protect the buildings, as needed.

Discussion: Approximately twenty historic buildings are located within this character area. Located on NPS property are the four restored buildings identified above, Lou Anderton's barn and its associated coral, the saloon, and the Earl Hirst Cabin. All others are located on the privately owned McNutt property and are not considered for NPS stabilization treatments.

The building known as the saloon is typical of historical Chisana City buildings that might have housed a trade such as a saloon (although the structure has not been conclusively documented as a saloon). The barn and its owner Lou Anderton, who operated a store from approximately 1920 to 1960, are associated with commerce in Chisana City. This barn and saloon are recommended for stabilization because they typify Chisana City as a trade and supply center.

In the Historical Data Section of the 1984 *Chisana Historic Structure Report* it is stated that:

> Town building at Chisana followed the same pattern as other Alaska Gold rush era cities—Circle and Eagle, Rampart and Fairbanks, Iditarod and Ruby. First, merchants staked a townsite, built stores and shops, and then, among other things, called for legal protection and property rights.

The restored buildings are typical of the miners calls for legal protection and property rights. But the character of Chisana City as a trade center is represented with only the cabin of Sidney "Too Much" Johnson a freighter in the Chisana district. To represent this site as a trade center, more stores and shops need to be preserved.

Recommendation: Maintain the visual integrity of the site by working with NPS Historic Architect and the residents of Chisana City to develop historic building style codes for voluntary compliance.

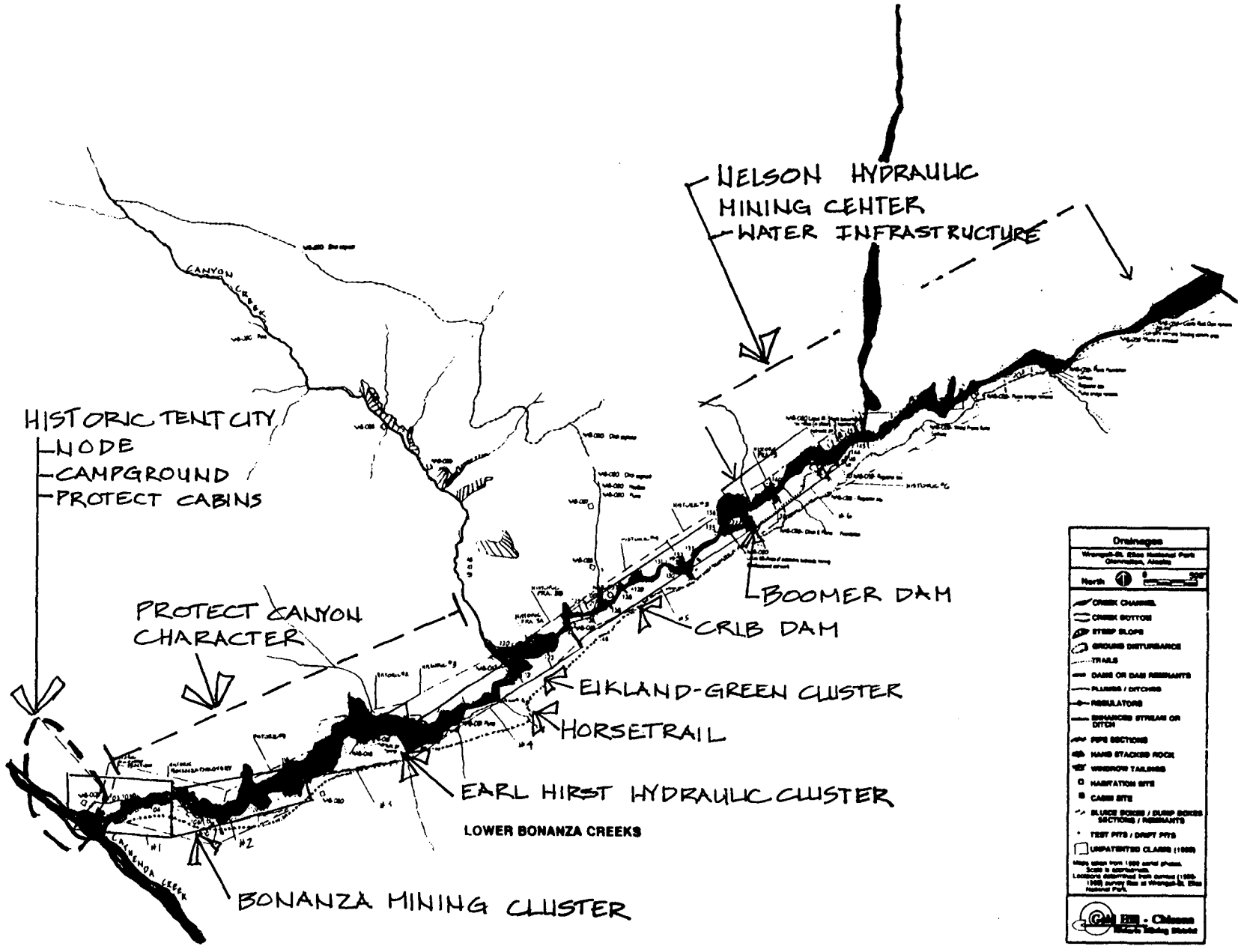
Discussion: Historic buildings located on private property contribute both to the overall integrity of the Chisana City Historic Boom Town Area and the Chisana-Gold Hill Landscape.

Recommendation: Document and protect the two cemeteries located within this landscape area by fencing their perimeters. The fencing is to be of spruce lumber split rail construction congruent with historic period fencing techniques.

Discussion: One cemetery contains two Alaska Native grave houses. The other cemetery contains seven historic graves and their associated wooden grave markers. One of these graves belongs to Charles Simons, a prominent local merchant who served as Chisana City's postmaster from 1917 until his death in 1929 and for whom the Simons Trail is named.

Recommendation: Identify and map both objects and artifact scatter found in this Chisana City area. Protect non-provenienced artifacts from vandalism and theft by educating the public through interpretive techniques.

Discussion: The objects and artifact scatter with the extant cabin sites are evidence of the daily lives of the Chisana-Gold Hill, particularly when they were in their winter residence. These materials are accessible to all visitors to Chisana City, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.



Map 17. Lower Bonanza Creek Historic Mining Area. Map: the author.

3. Lower Bonanza Creek Historic Mining Area

The objective of the treatment recommendations for the Lower Bonanza Creek Historic Mining Area is to preserve its historical character as a secondary supply center and intense mining area. The recommendations further attempt to preserve the historical character of the unique canyon terrain that required quite different mining techniques than those operations used in the upper reaches of the creek. These recommendations also attempt to preserve the area's typical Recovery Period hydraulic mining character.

3.1 Spatial Organization And Land Patterns

Foremost as a spatial pattern in the Lower Bonanza Creek Historic Mining Area are the mining use areas along Bonanza Creek and Canyon Creek. Bonanza City served as a central node in this landscape area and a secondary node in the landscape as a whole.

Recommendation: Maintain Bonanza City's identify as a supply and recreation center. This recommendation can be accomplished by the following actions:
*Protect the two buildings at the Bonanza City location (see section 3.6 below).
*Retain the image of the area as a temporary tent city by designating an area for primitive camping within the Bonanza City townsite area.

Discussion: The Bonanza City camp served as the nearest supply center to the Stampede and Boom Period miners. Hard good supplies were limited and services including restaurants, a barber shop, and two hotels. Hamshaw 's operation had a warehouse located at Bonanza City and Fred Best frequented the town during evenings for visiting friends and playing cards. Tents made up the majority of structures although a few lumber cabins could be found. By designating the area as a primitive camping area, Bonanza City can retain its historic us The character of Bonanza City was typified by the tent frame construction rather than by cabin construction. In this context, the two remaining cabins do not warrant more stringent preservation techniques. The cabins do, however, identify the town's location, and contribute to the spatial organization of this landscape. Therefore, the cabins should be protected to visually identify the Bonanza City location.

Recommendation: Retain the spatial organization of the Lower Bonanza Creek Historic Mining Area by maintaining mining as the primary use. This means that the preserved artifacts and their context will be actual mining operations, mining technologies and their associated features. Continued mining on the active claims does not disturb the spatial patterns of the historic landscape.

Discussion: Placer mining took place primarily in the creeks, although there were a few lode exploration pits located on the hillside of Gold Hill. As a result, all of the active claims within this mining landscape are in the creek areas and since the establishment of the National Park Preserve, no additional claims can be established in this area. Therefore, the existing mining claims are the only claims of concern and they are located in previously mined areas. Active mining can prove destructive to historic resources in other ways, but mining does not disturb historical spatial patterns.

Recommendation: Identify and maintain the pattern of historic tent sites to represent the characteristic "boom" town settlement along the contours of Bonanza Creek. This recommendation can be accomplished by the following actions:
*Reveal the spatial definition by clearing and maintaining vegetation from each individual tent site.
*Establish paths along tent site areas in a pattern that follows the streets of the historic Bonanza City.

Discussion: Photographic documentation of the historic Bonanza City can supply information to estimate the historic street locations. Additional archeological site work can provide information to determine these locations.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.

Discussion: The visual image of Gold Hill dominates this landscape. Historically, this hill has served as a landmark for occupants of this landscape, allowing them to orient themselves and therefore determine their location in relation to Gold Hill.

3.2 Circulation

Circulation features in the Lower Bonanza Creek Historic Mining Area consist of the trails connecting Bonanza City to Chisana City, and a

separate foot trail connecting Bonanza City to the mining claims. In addition, winter supply routes along Chathenda Creek traversed the frozen creek.

Recommendation: Retain the existing Simons Trail and the Red Hill Creek Trails (refer to the recommendations in section 2.2).

Recommendation: Retain the existing Horse Trail as the route used to connect Bonanza City to the mining areas. This recommendation can be accomplished by the following actions:
*Map the trail to specify maintenance needs noting such information as "...at this point the trail goes through a scree and may loose footing..." or "...side trail leads down to the Bonanza Creek Canyon."
*Maintain the existing Horse Trail by designating it as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.

Recommendation: Retain the area's winter supply route into Bonanza City by allowing winter sledding over the original Chathenda Creek route.

3.3 Vegetation

Recommendation: Retain and maintain the area above the timber line as a character area by working with the natural resource staff to develop a vegetation management plan for the area. The goal for this plan would be to maintain the natural forest edge to promote an understanding of the scarcity of lumber in the mining areas versus its relative abundance in the lowland areas.

3.4 Topography

The most important character-defining topographical feature in the Lower Bonanza Creek Historic Mining Area is the Lower Bonanza canyon. This canyon feature requires protection but no intervention is needed in of the natural maturation process.

Recommendation: Protect the lower Bonanza Creek canyon character feature by limiting the mining practices in the area to those that do not compromise the canyon character. The canyon continues to retain its character when its sides are left precipitous and its deep and narrow valley is sustained.

Discussion: Many combinations of canyon angles, average widths, and the anxious heights of the canyon walls contribute to the enclosed feeling of a canyon. The goal of this recommendation is to retain the existing enclosed feeling associated with the canyon. The canyon on Bonanza Creek begins approximately five-hundred feet above the confluence of Canyon Creek and extends to approximately five-hundred feet above its confluence with Chathenda Creek. However, above this demarcation there are areas that also offer a canyon-like feeling to the viewer.

3.5 Water Features

Character-defining water features in this Lower Bonanza Creek Historic Mining Area are the water infrastructure systems that provided and regulated water for mining operations. Particularly important is the water infrastructure which supplied the Nelson hydraulic mining operation. Both active preservation and protection treatments are recommended for these cultural features.

Recommendation: Preserve the water infrastructure features of the Nelson's Hydraulic Mining Cluster in association with the hydraulic mining operation which it last served (see Appendix I for specific components). This recommendation can be accomplished by the following actions:
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features such as dam pieces and flume parts and use for repairs. Evaluate this treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSRs are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.
*Protect mining pit and other components of the hydraulic mining operation from further mining destruction.
*Maintain this feature with seasonal inspections, acting to make needed repairs and to remove willows and woody vegetation as required (to prevent woody vegetation from growing into the structures and breaking them apart).

Discussion: This is an unique and impressive water infrastructure within the whole Chisana-Gold Hill Landscape. Preservation treatments for this feature should be given a high priority.

The hydraulic mining operation associated with this water supply system lacks the physical integrity equal to other hydraulic mining operations found in this character area. It's presence

as a component of the water infrastructure system, however, completes the viewer's understanding of the system by supplying a visual explanation of how the water transportation systems worked. Interpretation is advised to provide missing information related to this mining operation.

Recommendation: Preserve the two unique yet isolated water system features found in this Lower Bonanza Creek Historic Mining Area; these include a crib dam remnant (isolate no. 128) and boomer dam (isolate no. 139).
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize by reinforcement or consolidation of their features or materials. Repair or replace in-kind as required.
*Maintain by removing willows and woody vegetation as required.

Recommendation: Protect the following water infrastructure systems and isolates: Canyon Creek Water Diversion Cluster (see Appendix I to identify individual pieces of the cluster): dam ruin (isolate no. 126): and, a ditch (isolate no. 120).

Discussion: Dam structures in this mining landscape are ubiquitous. However, their close proximity to the creek makes them especially vulnerable to destruction by natural causes. If only the limited number of dam structures associated with clusters are preserved the innate character of this landscape would not be preserved.

3.6 Structures, Furnishings and Objects

The Lower Bonanza Creek Historic Mining Area is identified by the mining operations that continued through the significant periods. While the hydraulic mining of the Recovery Period is particularly characteristic of this area, the area also provides an excellent representation of the mining sequence common to placer mining operations.
Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the following mining operations: Earl Hirst Hydraulic System Cluster and Eikland-Green Camp Cluster as hydraulic mining operations; Fred Best Camp Cluster as a typical mining camp; Canyon Creek Prospect Cluster as a prospecting operation; and Bonanza Mining Cluster as a ground sluicing operation. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features for repair treatments. Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects by using temporary bracing, and other non-destructive methods to protect the structures as needed until HSR are completed.
*Protect mining pits and other components of the mining operations from further mining destruction.
*Maintain this feature with seasonal inspections, acting to make needed repairs and to remove willows and woody vegetation as required (to prevent woody vegetation from growing into the structures and breaking them apart).

Recommendation: Protect the following mining operations: Mid-Bonanza Ground Sluicing Cluster; Canyon Workings Cluster; Mid Bonanza Ground Sluicing Cluster; Canyon Creek Habitation Cluster; Shushanna Joe Camp Cluster; and Steinberger Cluster.

Discussion: Representative mining operations are critical to sustaining the character of this landscape, primarily because they reflect cultural articles from each of the significant periods.

Recommendation: Preserve the claim post markers (isolate nos. 117 and 152) within this character area. This recommendation can be accomplished by the following actions:
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize by reinforcement if needed.

Recommendation: Maintain boundaries of active mining claims, Bonanza No. 1-6 by placing in-kind uniform claim markers that can be easily identified by the public.

Discussion: During the Stampede Period these claim markers were extremely important features in the landscape. New stampeders looked to the claim markers and their dates to identify locations on the creek.

Future visitors need to be able to recognize the areas of private claims. With exposure to interpretative techniques, future visitors can search for claim markers as did historic visitors.

Recommendation: Protect non-provenienced artifacts and features from vandalism and theft by educating the public through interpretive techniques.

Discussion: Data verify that more informed visitors deface the resource less. These materials are assessable to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

Recommendation: Protect the buildings located at Bonanza City through the following actions:
*Verify existing documentation of two free-standing building structures located at Bonanza City and make corrections as necessary.
*Protect the buildings by restricting visitor access but allow the buildings to continue their natural deterioration.

Discussion: Refer to the discussion in section 3.1.

4. Upper Bonanza Creek Historic Mining Area

The objective of the treatment recommendations for the Upper Bonanza Creek Historic Mining Area is to preserve its historical character as an intense mining area. The recommendations further attempt to preserve the remote and isolated character of this gently sloping topography and that required quite different mining techniques than those operations used in the lower Bonanza Creek canyon.

4.1 Spatial Organization And Land Patterns

The patterns of land use around the creeks dominate in the spatial organization of the Upper Bonanza Creek Historic Mining area. Mining operations from the Stampede, Boom, and Decline Periods characterize the mining that occurred here. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of the Upper Bonanza Creek Historic Mining Area by maintaining mining as the primary use. This means that the preserved artifacts and their context will be actual mining operations, mining technologies and their associated features. Continued mining on the active claims does not disturb the spatial patterns of the historic landscape.

Discussion: Refer to the discussion in section 3.1.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.

Discussion: Refer to the discussion in section 3.1.

4.2 Circulation

Circulation trails reflect the mining use patterns in this Upper Bonanza Creek Historic Mining Area and therefor follow the creek's edge. The Eight Pass Trail is unusual because it enters the landscape area from the outside. This trail served as one of the routes that brought stampeders into this landscape area. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the existing trails along Bonanza Creek as routes to access the mining areas. This recommendation can be accomplished by the following actions:
*Define and map the trail for maintenance needs with information such as "...the flooding creek washes trail at this point" or, "...willow and alder growth cover the path."
*Maintain the existing trails along Bonanza Creek by designating it as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.
*Use interpretative techniques to direct visitors to trail locations.

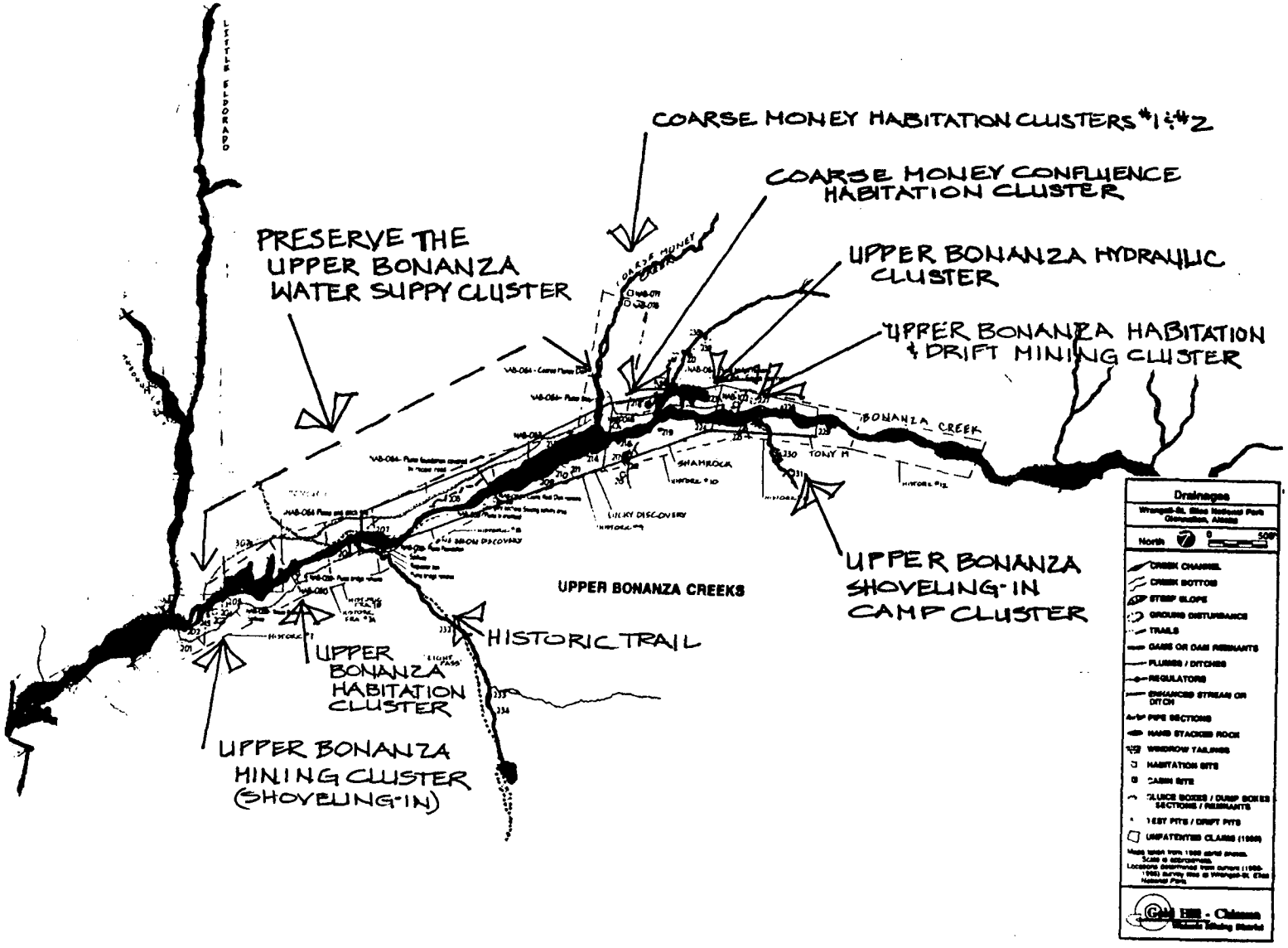
Discussion: The trails in the alluvial gravels next to the creek are subject to flooding and as a result are not well defined.

Recommendation: Retain the existing Eight Pass Trail as a secondary route entering the mining areas from the "outside." This recommendation can be accomplished by the following actions:
*Map the trail for maintenance needs information i.e. "trail goes through a scree and footing may become loose" or, "willow and alder growth cover the path."
*Maintain the existing Eight Pass Trail by designating it as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.

Recommendation: Retain the character of winter access in the area by allowing non-destructive sledding into the area.

4.3 Vegetation

Recommendation: Preserve this character feature by retaining and maintaining as a character area above the timber line. To accomplish this recommendation the natural resource staff needs to develop a vegetation management plan, with its goal to maintain the area is natural tundra and low shrub vegetation thereby promoting an understanding of the absence of lumber in the



Map 18. Upper Bonanza Creek Historic Mining Area. Map: the author.

mining areas.

4.4 Topography

Gently sloping terrain characterizes the natural landscape of this Upper Bonanza Creek Historic Mining Area. Manmade landform modifications contribute to the mining character of this mining-intense area. Some landform modifications are considered as mining clusters if intregal as parts of representative mining operations. Isolated landform modifications, particularly hand-stacked rock piles typical of shoveling-in operations, also contribute to the character of this landscape area. Protection treatments are recommended for these cultural features.

Recommendation: Protect the stacked rock landform modifications (isolate nos. 229 and 224) from further mining destruction and from visitor vandalism.

Discussion: Mining operations characteristically eliminate or alter the landform modifications of earlier mining. This landscape retains its historic character because remnants of early mining have not yet been destroyed. By protecting these earlier mining features the character of the landscape can be preserved.

Recommendation: Protect the gently sloping topography of the Upper Bonanza Creek terrain by denying mining practices that would result in deep cervices in the landscape.
Discussion: To value the subtle differences in upper creek mining practices and those of the lower canyon areas, the topographical divisions also must remain intact. By protecting the gently sloping topography of this character area these differences can be understood.

4.5 Water Features

Character-defining water features in this Upper Bonanza Creek Historic Mining Area are the water infrastructure systems that provided and regulated water for mining operations. Particularly important is the water infrastructure built by James and Nelson in the Boom Period. Both active preservation and protection treatments are recommended for these cultural features.

Recommendation: Preserve the water infrastructure features of the Upper Bonanza Water Supply Cluster (see Appendix I for specific components). This recommendation can be accomplished by the following actions:
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features such as dam pieces and flume parts for repair treatments. Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSR are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.
*Protect mining pit and other components of the hydraulic mining operation from further mining destruction.
*Maintain this feature with seasonal inspections, acting to make needed repairs and to remove willows and woody vegetation as required (to prevent woody vegetation from growing into the structures and breaking them apart).

Discussion: This is an unique water infrastructure within the whole Chisana-Gold Hill Landscape because it characterizes the Upper Bonanza Creek Historic Mining Area. Preservation treatments for this feature should be given a high priority.

4.6 Structures, Furnishings and Objects

This character area is identified by the mining operations that continued throughout the creek through the significant periods.
Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the following mining camps and operations: Upper Bonanza Habitation Cluster and Coarse Money Confluence Habitation Cluster as typical mining camps; Upper Bonanza Mining Cluster as a shoveling-in operation; and Upper Bonanza Hydraulic Cluster as a hydraulic mining operation. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features such as dam pieces and tent frame parts for repair treatments. Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSRs are completed by using temporary bracing,

and other non-destructive methods to protect the structures as needed.

*Protect mining pits and other components of the mining camps and operations from further mining destruction.

*Maintain this feature with seasonal inspections which result in needed repairs and removal of willows and woody vegetation as required (to keep the woody vegetation from growing into the structures and breaking them apart).

Recommendation: Protect the following mining camps and operations: Castle Rock Staging Cluster; Upper Bonanza Shoveling-in/Camp Cluster; Coarse Money Habitation Cluster #1; Coarse Money Habitation Cluster #2; Upper Bonanza Mining Camp Cluster; and Upper Bonanza Habitation and Drift Mining Cluster.

Discussion: Representative mining operations are critical to the character of this landscape. The Castle Rock Staging Cluster does not need to be protected in this location. It can be moved to an alternate location or collected. The Upper Bonanza Habitation Cluster has exceptional integrity as a mining camp and treatment recommendations for this feature should be given a high priority.

Recommendation: Maintain boundaries of active mining claims, One Below Discovery, Lucky Discovery, Shamrock and Tony M. by placing in-kind uniform claim markers that can be easily identified by the public.

Discussion: During the Stampede Period claim markers were extremely important features in the landscape. New stampeders looked to the claim markers and their date to verify a claim's location on the creek.

Future visitors need to be able to recognize the areas of private claims. With the addition of interpretative techniques, future visitors can look for claim markers as did historic visitors.

Recommendation: Protect non-provenienced artifacts and features from vandalism and theft by informing the public through interpretive techniques.

Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed visitors deface the resource less. These materials are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

5. Little Eldorado Creek Historic Mining Area

The objective of the treatment recommendations for the Little Eldorado Creek Historic Mining Area is to preserve its historical character as the location of the Billy James and Matilda Wales Discovery claim. The recommendations are aimed at preserving the area's intense mining character reflecting the fact that it remained the richest source of gold throughout the historic eras.

5.1 Spatial Organization And Land Patterns

Patterns of land use dominate the spatial organization of the Little Eldorado Creek Historic Mining Area. These mining patterns followed the creeks and this character area is organized around the creeks. Active preservation treatments are recommended for these cultural features.

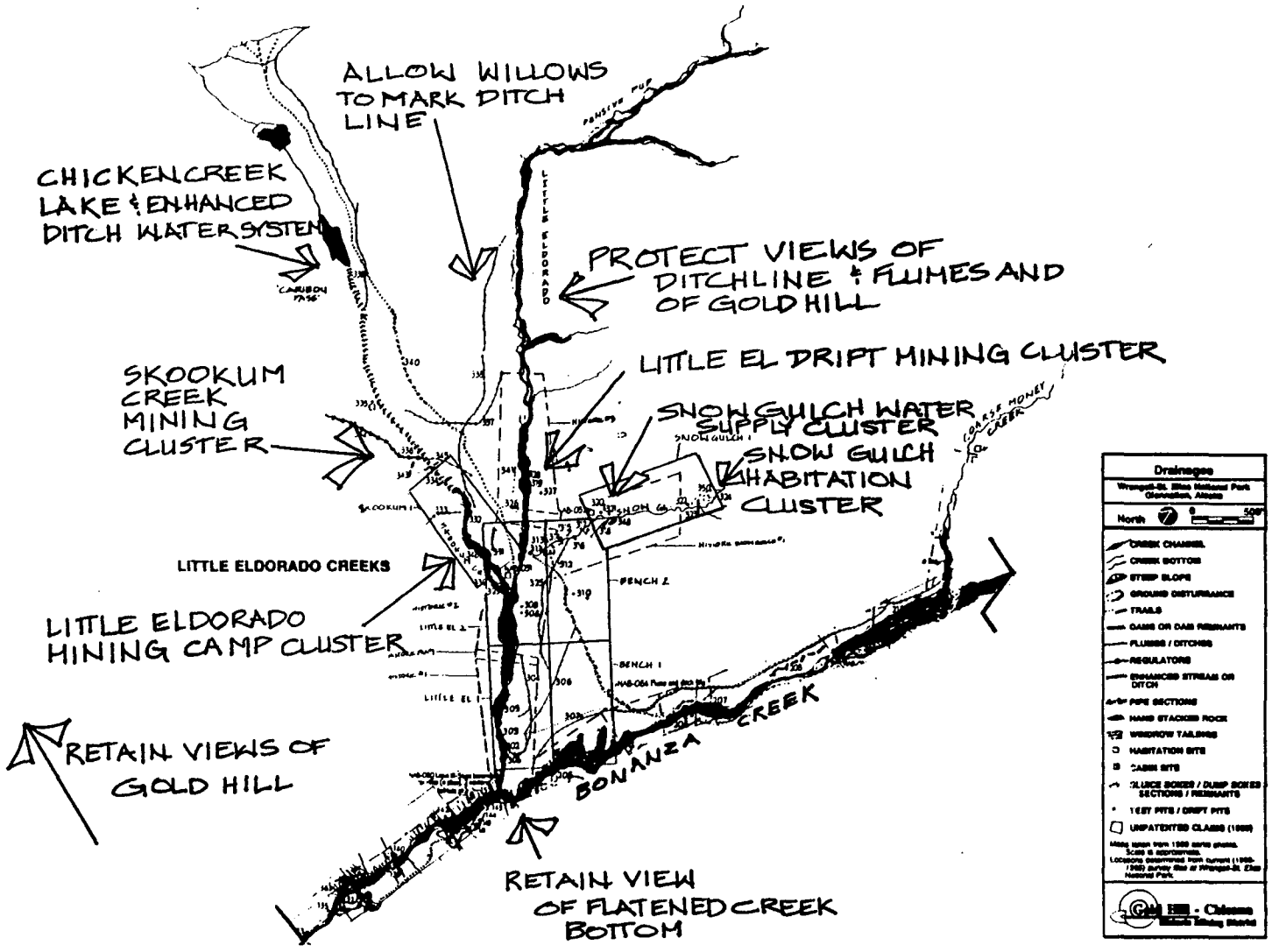
Recommendation: Retain the spatial organization of the Little Eldorado Creek Historic Mining Area by sustaining the Little Eldorado, Skookum, Snow and Bug Gulches by maintaining mining as the primary use. This means that the preserved artifacts and their context will be actual mining operations, mining technologies and their associated features. Continued mining on the active claims does not disturb the spatial patterns of the historic landscape.

Discussion: Refer to the discussion in section 3.1.

Recommendation: Protect the over viewshed of Little Eldorado Creek from the upper areas of its mouth which show the overall leveling effect of mining; protect by not allowing man-made obstructions to block the views.

Recommendation: Protect the over viewshed of the extensive ditch systems that supply water to Skookum Creek for mining operations, specifically those views in which the viewer can visually connect the ditch and flume line from upper Little Eldorado Creek to the shoveling-in operation on Skookum Creek; protect by not allowing manmade obstructions to block the views.

Recommendation: Protect views of the enhanced ditch from the lakes at the head of Caribou Pass and the ditches draining the hillsides, helping the viewer to understand the extensive water supply system required for the mining operation; protect by not allowing manmade obstructions to block the views.



Map 19. Little Eldorado Creek Historic Mining Area. Map: the author.

Recommendation: Retain views of Gold Hill that orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.

Discussion: Refer to the discussion in section 3.1.

5.2 Circulation

Circulation trails follow the mining use patterns in the Little Eldorado Creek Historic Mining Area. Trails also connected this character area and Bonanza Creek to mining areas on the north side of Gold Hill, such as Glacier and Gold Run Creeks. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the existing trails through the Little Eldorado Creek Historic Mining Area as access routes to the mining areas. This recommendation can be accomplished by the following actions:

*Define and map the trail for maintenance needs with information such as "...the flooding creek washes trail at this point" or, "...willow and alder growth cover the path."

*Maintain the existing trails by designating them as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.

*Work with the Environmental Specialist staff to develop an ecological restoration plan for the trails, specifically for areas where the permafrost has been compromised by ATV traffic. The plan can include limits to ATV use of the trails.

Recommendation: Retain the character of winter access by allowing non-destructive sledding into the area.

5.3 Vegetation

Recommendation: Preserve the character of the Little Eldorado Creek Historic Mining Area by retaining and maintaining it as a character area above the timber line. To accomplish this recommendation work with the natural resource staff to develop a vegetation management plan with its goal being to maintain the area as natural tundra and low shrub vegetation to promote an understanding of the absence of lumber in the mining areas.

Discussion: Willow growth resulting from human disturbance of the landscape has been used in this character area to mark the locations of these disturbances.

5.4 Water Features

Water infrastructure systems provided regulated use of water for the intense mining in this Little Eldorado Creek Historic Mining Area. This area is not characterized by any individual water infrastructure system but by the multiple systems which criss-crossed it, and which supplied water for mining operations throughout the historic periods. Protection treatments are recommended for these cultural features.

Recommendation: Protect the following water infrastructure systems: Snow Gulch Water Supply Cluster (see Appendix I for specific components); the Chicken Creek lake system and enhanced drainage channel; ditches (isolates nos. 305 and 306); a flume remnant (isolate no. 307); and a pipe remnant (isolate no. 317). To accomplish this task verify existing documentation of these features and make corrections as necessary and protect components of the water systems from further destruction by mining. Allow natural willow growth along ditch lines and flume lines to better identify the water system's route.

Discussion: The natural growth of willows follows disturbed ground. In areas where ditches crossed the hillside, few other areas on the hillside are disturbed. Other vegetative growth on the hillsides is either tundra or low shrub vegetation. Because of these factors, willows stand out above the lower vegetation in patterns that follow the ditch and flume lines.

5.5 Structures, Furnishings and Objects

The Little Eldorado Creek Historic Mining Area character area is identified by the intense mining that occurred here. Within it is an excellent example of a ground sluicing operation, a type of mining operation common to the Chisana-Gold Hill Landscape.

Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the following mining camps and operations: The Skookum Creek Mining Cluster for its ground sluicing technology; the Snow Gulch Mining Cluster for its shoveling-in technology; the Little Eldorado Drift Mining Cluster and Skookum Creek Drift Mining Cluster for their drift mining technology; Snow Gulch

Exploration Cluster for its test pit exploration technology; and Little Eldorado Mining Camp Cluster as a typical mining camp. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required.
*Consolidate for repair treatments the scattered parts of features such as dam pieces and tent frame parts.
*Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSRs are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.
*Protect mining pits and other components of the mining camps and operations from further destruction by mining.
*Maintain this feature with seasonal inspections, acting to make needed repairs and to remove willows and woody vegetation as required (to prevent woody vegetation from growing into the structures and breaking them apart).

Recommendation: Protect the following mining camps and operations: The Little Eldorado Bench Mining Cluster and the Upper Snow Mining Cluster.

Discussion: Representative mining operations are critical to the character of this landscape. Preservation treatments for the Skookum Creek Mining Cluster should be given a high priority.

Recommendation: Maintain boundaries of active mining claims, Little Eldorado No. 1, Little Eldorado No. 2, Little Eldorado Bench No. 1, Little Eldorado Bench No. 2, Skookum No. 1 and Snow No. 1 by placing in-kind uniform claim markers that can be easily identified by the public.

Discussion: During the Stampede Period claim markers were extremely important features in the landscape. New stampeders looked to the claim markers and their dates to verify a claim's location on the creek. Miners often placed their papers in a tobacco can nailed to the top of the claim post.

Future visitors need to be able to identify private claims. With the addition of interpretative techniques, future visitors can search for claim markers as did historic visitors.

Recommendation: Preserve the claim post markers (isolate no. 327) within this character area. This recommendation can be accomplished by the following actions:
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize by reinforcement if needed.

Recommendation: Protect non-provenienced artifacts and features from vandalism and theft by educating the public through interpretive techniques.

Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed visitors deface the resource less. These materials are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

6. Glacier Creek Valley Historic Mining Area

The objective of the treatment recommendations for the Glacier Creek Historic Mining Area is to preserve its historical character as an intense mining land use area. The following recommendations are designed to preserve the location of the short-lived settlement of Woodrow and its sawmill location, as representative of the Stampede Period.

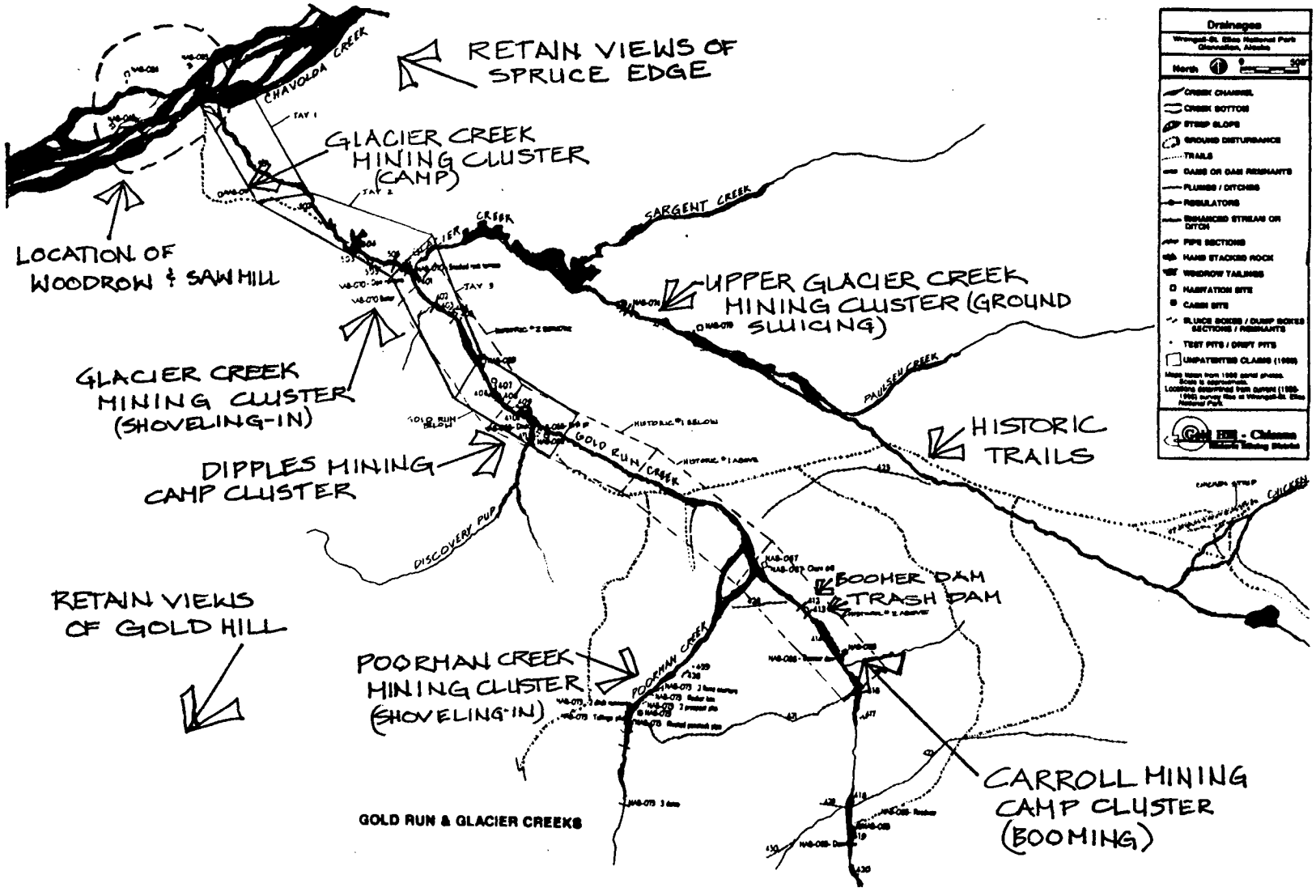
6.1 Spatial Organization And Land Patterns

The patterns of land use around the creeks dominate in the spatial organization of the Glacier Creek Historic Mining Area. Mining operations from the Stampede, Boom, and Decline Periods characterize the mining that occurred here. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of the Glacier Creek Historic Mining Area by keeping the Glacier and Gold Run Creeks by maintaining mining as the primary use. This means that the preserved artifacts and their context will be actual mining operations, mining technologies and their associated features. Continued mining on the active claims does not disturb the spatial patterns of the historic landscape.

Discussion: Refer to the discussion in section 3.1.

Recommendation: Identify and protect the town settlement area known as Woodrow located across the mouth of Glacier Creek. Protect by educating the public through interpretive techniques.



Map 20. Glacier Creek Valley Historic Mining Area. Map: the author.

Discussion: Woodrow was a planned community from the early Stampede Period. It served as the location of the Commissioner for only a few months before miners established Johnson City (Chisana City) and moved the Commissioner's office to that location. Woodrow never developed further. Data verify that more informed visitors deface the resource less. Materials of Woodrow are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.

Discussion: Refer to the discussion in section 3.1.

6.2 Circulation

Circulation trails follow the mining use patterns in the Glacier Creek Historic Mining Area. Trails also connect mining areas to the Stampede Period community of Woodrow. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the existing trails through the Glacier Creek Historic Mining Area as access routes to the mining areas and to the Stampede community of Woodrow. This recommendation can be accomplished by the following actions:
*Define and map the trail for maintenance needs with information such as "...the flooding creek washes trail at this point" or, "...willow and alder growth cover the path."
*Maintain the existing trails by designating them as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.
*Work with the Environmental Specialist staff to develop an ecological restoration plan for the trails, specifically for areas where the permafrost has been compromised by ATV traffic. The plan can include limits to ATV use of the trails.

Recommendation: Retain the character of winter access by allowing non-destructive sledding into the area.

6.3 Vegetation

Recommendation: Retain and maintain as a character area above the timber line. To accomplish this recommendation work with the natural resource staff to develop a vegetation management plan with its goal being to maintain the area as natural tundra and low shrub vegetation to promote an understanding of the absence of lumber in the mining areas.

6.4 Topography

Manmade landform modifications contribute to the mining character of this mining-intense Glacier Creek Historic Mining Area. Some landform modifications are considered as mining clusters if intregal as parts of representative mining operations. Isolated landform modifications, such as the conical rock pile are not typical mining landscape features and require further archeological study. Protection treatments are recommended for this cultural feature pending further assessment.

Recommendation: Protect the conical rock landform (isolate no. 428) from further mining destruction and from vandalism. Identify and evaluate.

Discussion: This cultural feature is not a typical mining landscape feature and requires further archeological evaluation.

6.5 Water Features

Character-defining water features in this Glacier Creek Historic Mining Area are the water infrastructure systems that provided and regulated water for mining operations. In particular, this area contains intact dam structures which can be compared. Active preservation and protection treatments are recommended for these cultural features.

*Recommendation: Preserve the water infra*structure features: boomer dam (isolate no. 412) and chicken wire trash dam (isolate no. 413). This recommendation can be accomplished by the following actions:
*Verify existing documentation of this feature and make corrections as necessary.
*Stabilize and repair or replace in-kind dam components and materials as required.
*Maintain this feature with seasonal inspections which result in needed repairs and removal of willows and woody vegetation as required (to keep the woody vegetation from growing into the structures and breaking them apart).

Discussion: There are other dam structures associated with mining operations which are preserved as intregal parts of those operations.

Recommendation: Protection is recommended for the following water infrastructure isolates:

Dam remnants (isolates nos. 406, 408 and 410); ditches (isolates nos. 423 and 424) and flume remnant (isolate no. 426).

Discussion: Dam structures in this mining landscape are ubiquitous. However, their close proximity to the creek makes them especially vulnerable to destruction by natural causes. If only the limited number of dam structures associated with clusters are preserved the innate character of this landscape would not be preserved.

6.6 Structures, Furnishings and Objects

Mining operations and mining camps characterize the mining activities that occurred in this Glacier Creek Historic Mining Area. The area also is characterized by the early Stampede Period community where a sawmill and several cabin sites were located.

Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the following Chavolda Creek Sawmill Cluster as a sawmill site of the Stampede Period community of Woodrow. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSRs are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.
*Protect associated components of the sawmill site such as sawdust piles and cut tree stumps.
*Maintain this feature with seasonal inspections which result in needed repairs.

Recommendation: Protect the drift mining operation, NAB-083 as part of the Stampede Period community of Woodrow.

Discussion: This community was short lived and all but the sawmill was abandoned soon after the Stampede Period started. It lacks the importance of either Bonanza City or Chisana City in this Chisana-Gold Hill Landscape.

Recommendation: Preserve the following: Carroll Mining Camp Cluster as a unique example of booming mining technology; Glacier Creek Mining Cluster and Poorman Creek Mining Cluster as shoveling-in mining technologies; the Upper Glacier Creek Mining Cluster as ground sluicing mining technology; Glacier Creek Camp Cluster and Dipple's Mining Camp Cluster as typical mining camps. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features such as dam pieces and tent frame parts for repair treatments. Evaluate treatment through Historic Structure Reports (HSR).
*Protect structures, furnishings and objects until HSR are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.
*Protect mining pits and other components of the mining camps and operations from further mining destruction.
*Maintain this feature with seasonal inspections which result in needed repairs and removal of willows and woody vegetation as required (to keep the woody vegetation from growing into the structures and breaking them apart).

Discussion: Representative mining operations are critical to the character of this landscape. The Carroll Mining Camp Cluster is a unique example of a booming operation. It also was the sit of a mining camp, adding to its uniqueness. Preservation treatments for this feature should be given a high priority.

Recommendation: Protect the following mining camps and operations: Upper Glacier Creek Prospect Cluster; NAB-067; and Historic #2 Below Mining Camp Cluster.

Discussion: NAB-067 does not need to be protected in place. The churn drill can be interpreted as a churn drill prospect operation but does no t need to remain at this location.

Recommendation: Maintain boundaries of active mining claims, Jay No. 1, Jay No. 2, Jay No. 3 and Gold Run Below by placing in-kind uniform claim markers that can be easily identified by the public.

Discussion: During the Stampede Period claim markers were extremely important features in the landscape. New stampeders looked to the claim markers and their dates to verify a claim's location on the creek. Miners often placed their papers in a tobacco can nailed to the top of the

claim post.

Future visitors need to be able to identify private claims. With the addition of interpretative techniques, future visitors can search for claim markers as did historic visitors.

Recommendation: Protect non-provenienced artifacts and features from vandalism and theft by educating the public through interpretive techniques.

Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed visitors deface the resource less. These materials are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

7. Big Eldorado Creek Historic Mining Area

The objective of the treatment recommendations for the Big Eldorado Creek Historic Mining Area is to preserve its historical character as an intense mining land use area. These recommendations are designed to preserve the area's characteristic exploration placer mining techniques, such as drift and prospect mining, and as lode exploration.

7.1 Spatial Organization And Land Patterns

The patterns of land use around the creeks dominate in the spatial organization of the Big Eldorado Creek Historic Mining Area. Mining operations from the Stampede, Boom, and Decline Periods characterize the mining that occurred here. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of this Big Eldorado Creek Historic Mining Area by keeping the Big Eldorado Creek as a mining use area. This means that the artifacts preserved will be actual mining operations, mining technologies and associated features. In addition, continued mining in active claim areas does not disturb the spatial patterns of this historic landscape.

Retain the spatial organization of the Big Eldorado Creek Historic Mining Area by maintaining mining as the primary use. This means that the preserved artifacts and their context will be actual mining operations, mining technologies and their associated features. Continued mining on the active claims does not disturb the spatial patterns of the historic landscape.

Discussion: Refer to the discussion in section 3.1.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.

Discussion: Refer to the discussion in section 3.1.

7.2 Circulation

Circulation trails connect mining use patterns of Big Eldorado Creek Historic Mining Area to the supply centers. Active preservation treatments are recommended for these cultural features.

Recommendation: Retain the existing trails through the Big Eldorado Creek Historic Mining Area as access routes to the mining areas. This recommendation can be accomplished by the following actions:

*Define and map the trail for maintenance needs with information such as "...the flooding creek washes trail at this point" or, "...willow and alder growth cover the path."

*Maintain the existing trails by designating them as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.

*Work with the Environmental Specialist staff to develop an ecological restoration plan for the trails, specifically for areas where the permafrost has been compromised by ATV traffic. The plan can include limits to ATV use of the trails.

Recommendation: Retain the area's winter supply route into the mining areas by allowing winter sledding over the Chavolda Creek route.

7.3 Vegetation

Recommendation: Preserve the character of the Big Eldorado Creek Historic Mining Area by retaining and maintaining it as a character area above the timber line. To accomplish this recommendation work with the natural resource staff to develop a vegetation management plan with its goal being to maintain the area as natural tundra and low shrub vegetation to promote an understanding of the absence of lumber in the mining areas.

7.4 Topography

Manmade landform modifications contribute to the mining character of this mining-intense Glacier Creek Historic Mining Area. Some landform modifications are considered as mining clusters if intregal as parts of representative mining operations. Iso-

lated landform modifications, such as hand-stacked rock piles typical of the shoveling-in operations. Protection treatments are recommended for this cultural feature.

Recommendation: Protect the twelve stacked rock landform modifications from further mining destruction and from visitor vandalism.

Discussion: Mining operations characteristically eliminate or alter the landform modifications of earlier mining. This landscape retains its historic character because remnants of early mining have not yet been destroyed. By protecting these earlier mining features the character of the landscape can be preserved.

Reports from archeological surveys and inventories suggest that the workmanship in the stacked rock construction; protection is recommended under National Register Criteria A and C.

7.5 Water Features

Character-defining water features in this Big Eldorado Creek Historic Mining Area are the water infrastructure systems that provided and regulated water for mining operations. Protection treatments are recommended for these cultural features.

Recommendation: Protection is recommended for the following water infrastructure systems and isolates: Upper Big Eldorado Water Collection (see Appendix I to identify individual pieces of the cluster); a stone diversion dam (isolate no. 655); and a ditch (isolate no. 673).

7.6 Structures, Furnishings and Objects

Mining operations and mining camps comprise the mining activities that occurred in this Big Eldorado Creek Historic Mining Area. The use of drift and prospect placer techniques and lode mining exploration were primary.

Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the following: Big Eldorado Drift Mining Cluster and Upper Big Eldorado Drift Mining Cluster as drift mining operations and lode prospect; Upper Big Eldorado Prospect Cluster as an example of prospecting; the Stevens/Peterson Mining Cluster as examples of ground sluicing and shoveling-in operations. This recommendation can be accomplished by the following actions:

*Verify existing documentation of these features and make corrections as necessary.

*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required. Consolidate scattered parts of features such as dam pieces and tent frame parts for repair treatments. Evaluate treatment through Historic Structure Reports (HSR).

*Protect structures, furnishings and objects until HSRs are completed by using temporary bracing, and other non-destructive methods to protect the structures as needed.

*Protect mining pits and other components of the mining camps and operations from further mining destruction.

*Maintain this feature with seasonal inspections which result in needed repairs and removal of willows and woody vegetation as required (to keep the woody vegetation from growing into the structures and breaking them apart).

Discussion: Unlike other creeks on Gold Hill, the gold bearing channels on Big Eldorado Creek were unaffected by glacier actions. As a result, prospecting required deeper shafts to reach these unmoved gold bearing channels.

Recommendation: Protect the following mining camps and operations: Lower Big Eldorado Shoveling-in Cluster and Lower Big Eldorado Habitation Cluster.

Discussion: Representative mining operations are critical to the character of this landscape.

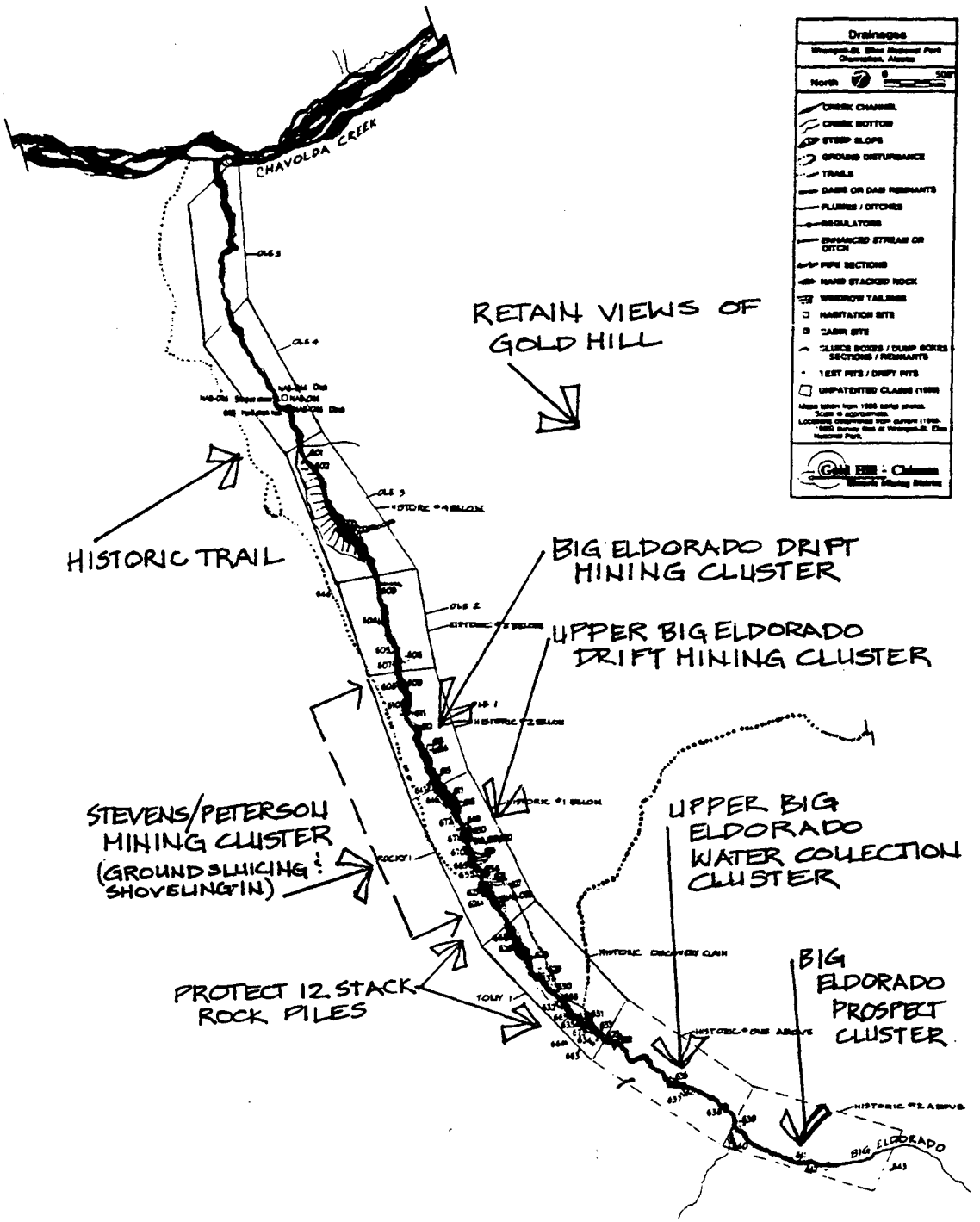
Recommendation: Maintain boundaries of active mining claims, Ole Nos. 1-5, Rocky I and Tony I by placing in-kind uniform claim markers that can be easily identified by the public.

Discussion: During the Stampede Period claim markers were extremely important features in the landscape. New stampeders looked to the claim markers and their dates to verify a claim's location on the creek. Miners often placed their papers in a tobacco can nailed to the top of the claim post.

Future visitors need to be able to identify private claims. With the addition of interpretative techniques, future visitors can search for claim markers as did historic visitors.

Recommendation: Protect non-provenienced artifacts and features from vandalism and theft by educating the public through interpretive techniques.

Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed



Map 21. Big Eldorado Creek Historic Mining Area. Map: the author.

visitors deface the resource less. These materials are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

8. Alder Lake Valley Area

The objective of the treatment recommendations for the Alder Lake Valley Area is to preserve its historical character as a contributing area of this mining landscape. The recommendations are designed to preserve its characteristic trail routes linking Chisana City to the mining claims.

8.1 Spatial Organization And Land Patterns

The only pattern of spatial organization in the Alder Lake Valley Area is the connecting nature of this character area. The Red River Trails connect the Chisana City area to the mining areas. Protection treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of the Alder Lake Valley Area by protecting the locations of trails that cross through it.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.
Discussion: Refer to the discussion in section 3.1.

8.2 Circulation

Circulation features within this landscape are the most important character feature within this landscape area. Although drift mining operations characterize it also. The following active preservation treatment actions are recommended for these cultural features.

Recommendation: Retain the existing Red Hill Creek, Alder Creek and Dry Gulch Trails as the routes used to access the Gold Hill mining areas. This recommendation can be accomplished by the following actions:
*Map and re-establish the existing Red Hill Creek, Alder Creek and Dry Gulch Trails.
*Maintain the existing trails by designating them as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.
Discussion: Refer to the discussion concerning these trails in section 3.2.

8.3 Vegetation

Recommendation: Retain and maintain as a character area above the timber line by working with the natural resource staff to develop a vegetation management plan for the area. The goal for this plan would be to maintain the forest edge demarcation to promote an understanding of the absence of lumber in the mining areas and its availability in the lowland areas.

8.4 Topography

Recommendation: Investigate the historical reports to determine the presence of a drift mining shaft at the mouth of Dry Gulch.

8.5 Structures, Furnishings and Objects

Mining operations and mining camps characterize the exploratory mining activities that occurred in the Alder Lake Valley Area.
Note: The following character features are identified by their contemporary cluster names. Refer to Appendix I to identify individual pieces of each cluster.

Recommendation: Preserve the drift mining sites NAB-043 and NAB-085. This recommendation can be accomplished by the following actions:
*Verify existing documentation of these features and make corrections as necessary.
*Stabilize and repair or replace in-kind flume components, structures, furnishings and objects as required.
*Maintain this feature with seasonal inspections which result in needed repairs.
Discussion: These drift mining sites have shafts that potentially are dangerous to the visiting public. Safety issues should be given a high priority but other stabilization recommendations for this feature should be considered low priority.

Gravels in the Alder Lake Valley were similar to those gravels on Gold Hill. This similarity encouraged prospectors to sink drift pits into these gravels searching for a gold bearing bedrock layer.

Recommendation: Protect non-provenienced artifacts from vandalism and theft by educating the public through interpretive techniques.
Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed visitors deface the resource less. These materi-

als are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

9. Outlying Highland Tundra Areas

The objective of the treatment recommendations for the Outlying Highland Tundra Areas is to preserve its historical character as a contributing area of this mining landscape.

9.1 Spatial Organization And Land Patterns

The only pattern of spatial organization in the Outlying Highland Tundra Areas is the connecting nature of this character area. The character area connects the Chisana City Supply area to the Gold Hill mining areas. Protection treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of this Outlying Highland Tundra Areas by protecting the locations of trails that cross through them.

Recommendation: Retain views of Gold Hill that serve to orient the visitor within this landscape. Refrain from allowing or placing manmade obstructions which block views of Gold Hill.
Discussion: Refer to the discussion in section 3.1.

9.2 Circulation

Recommendation: Retain the existing Eight Pass Trail as a secondary route entering the mining areas from the "outside." This recommendation can be accomplished by the following actions:
*Define and map the trail for maintenance needs with information such as "...the flooding creek washes trail at this point" or, "...willow and alder growth cover the path."
*Maintain the existing Eight Pass trail by designating it as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.
Recommendation: Retain the character of winter access in the area by allowing non-destructive sledding into the area.

9.3 Topography

Manmade landform modifications contribute to the mining character of this character area. Protection treatments are recommended for these cultural features.

Recommendation: Protect the subtle landform modifications which result from lode mining explorations on the Gold Hill side.
Discussion: Character remnants of lode mining exploration are typical of this character area. Lode mining does not represent the main thrust of the mining technologies used on Gold Hill and therefore these landform modifications are less important than the placer mining techniques found elsewhere in the Chisana-Gold Hill Landscape.

9.4 Structures, Furnishings and Objects

Recommendation: Protect non-provenienced artifacts from vandalism and theft by educating the public through interpretive techniques.
Discussion: These objects and artifact scatter are evidence of the number of Stampede Period prospectors. Data verify that more informed visitors deface the resource less. These materials are accessible to visitors, and a priority educational mission is to reduce temptations to degrade these cultural artifacts.

10. Lowland Spruce Areas

The objective of the treatment recommendations for the Lowland Spruce Areas is to preserve their historical character as typical lowland forest areas which contribute lumber resources to this mining landscape.

10.1 Spatial Organization And Land Patterns

The only pattern of spatial organization in the Lowland Spruce Areas is the connecting nature of this character area. The Simons Trails connect the Chisana City area to the mining areas. Protection treatments are recommended for these cultural features.

Recommendation: Retain the spatial organization of this Lowland Spruce Areas by protecting the locations of the trails that cross through this character area.

10.2 Circulation

Recommendation: Retain the existing Simons Trail as a route connecting Chisana City to the mining areas. This recommendation can be accomplished by the following actions:
*Define and map the trail for maintenance needs with information such as "...the flooding creek

washes trail at this point" or, "...willow and alder growth cover the path."
*Maintain the existing Simons Trail by designating them as an active foot trail; use non-destructive seasonal trail hardening techniques where necessary.

Discussion: Refer to the discussion in section 3.1.

10.3 Vegetation

Recommendations for vegetation features respect the broad vegetation types of this landscape. It is the locations of these broad vegetation types that are essential to understanding the effect of vegetation on this historic culture. The following active preservation is recommended for this cultural feature.

Recommendation: Protect the location as a spruce lumber source. To accomplish this task, work with the natural resource staff to develop a vegetation management plan for the area that maintains the line of demarcation between the forest edge and the contrasting upland scrub and tundra.

Discussion: The goal is to maintain the natural division between the upland areas (where lumber generally was unavailable) and the contrasting lowland areas where the residents harvested lumber for use on Gold Hill. For example, any actions that would remove the timber areas would destroy the historic integrity of the vegetation and its effect on the mining within this Chisana-Gold Hill Landscape.

APPENDIX I
EXISTING CONDITIONS IN THE CHISANA-GOLD HILL LANDSCAPE

Lower Bonanza & Canyon Creek Drainage

Ref. or site #	Item(s)	Nat. Reg. criteria	Person or Technology associated with criteria	Date attributed to item(s)	Lies in claim #	Status	Landscape Characteristics
NAB-009	**Bonanza City Cluster**	A & D	Fred Best photo	A --1913-1919 D --1913-1927			
NAB-009 #1	Wood trough				Bon #1	Priority I	*Cluster arrangement 1)typical of mining boom towns 2)shows a response to topography *Building types 1) a response to the natural environment-- vegetation *Historic views of the site from the trail
NAB-009 #2	Barrel Hoops				Bon #1	Priority I	
NAB-009 #3	Depression				Bon #1	Priority I	
NAB-009 #4	Trash scatter				Bon #1	Priority I	
NAB-009 #5	Claim post				Bon #1	Priority I	
NAB-009 #6	Depression				Bon #1	Priority I	
NAB-009 #7	Can scatter				Bon #1	Priority I	
NAB-009 #8	Tent depression				Bon #1	Priority I	
NAB-009 #9	Can scatter				Bon #1	Priority I	
NAB-009 #10	Tent depression				Bon #1	Priority I	
NAB-009 #11	Tent depression				Bon #1	Priority I	
NAB-009 #12	Level cut				Bon #1	Priority I	
NAB-009 #13	Tent depression				Bon #1	Priority I	
NAB-009 #14	Depression				Bon #1	Priority I	
NAB-009 #15	Trash scatter				Bon #1	Priority I	
NAB-009 #16	Depression & scatter				Bon #1	Priority I	
NAB-009 #17	Trash scatter				Bon #1	Priority I	
NAB-009 #18	Trash scatter				Bon #1	Priority I	
NAB-009 #19	Trash scatter				Bon #1	Priority I	
NAB-009 #20	Depression				Bon #1	Priority I	
NAB-009 #21	Depression				Bon #1	Priority I	
NAB-009 #22	Tent depression & trash				Bon #1	Priority I	
NAB-009 #23	Tent depression				Bon #1	Priority I	
NAB-009 #24	Trash scatter				Bon #1	Priority I	
NAB-009 #25	Trash scatter				Bon #1	Priority I	
NAB-009 #26	Trash scatter				Bon #1	Priority I	
NAB-009 #27	Wood lined pit				Bon #1	Priority I	
NAB-009 #28	Tent depression				Bon #1	Priority I	
NAB-009 #29	Can scatter				Bon #1	Priority I	
NAB-009 #30	Trash scatter				Bon #1	Priority I	

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

NAB-009 #31	Sled				Bon #1	Priority I
NAB-009 #32	Tent depression				Bon #1	Priority I
NAB-009 #33	Tent depression				Bon #1	Priority I
NAB-009 #34	Wood platform				Bon #1	Priority I
NAB-009 #35	Tent depression & scatter				Bon #1	Priority I
NAB-009 #36	Artifact scatter				Bon #1	Priority I
NAB-009 #37	Log cabin				Bon #1	Priority I
NAB-009 #38	Log (whorehouse)				Bon #1	Priority I
NAB-009 #39	Shed				Bon #1	Priority I
NAB-009 #40	Doghouse				Bon #1	Priority I
NAB-009 #41	Doghouse				Bon #1	Priority I
NAB-009 #42	Wood platform & scatter				Bon #1	Priority I
NAB-009 #43	Tent depression				Bon #1	Priority I
NAB-009 #44	Log sills				Bon #1	Priority I
NAB-009 #45	Log cabin ruin				Bon #1	Priority I
NAB-009 #46	Trash scatter				Bon #1	Priority I
NAB-009 #47	Collapsed frame					Priority I
NAB-009 #48	Trash scatter					Priority I
NAB-009 #49	Can scatter					Priority I
NAB-009 #50	Can scatter					Priority I
NAB-009 #51	Trash scatter					Priority I
NAB-009 #52	Natural Spring					Priority I
NAB-009 #53	Trash scatter					Priority I
NAB-009 #54	Tent depression					Priority I
NAB-009 #55	Artifact scatter					Priority I
NAB-009 #56	Tent depression & scatter					Priority I
NAB-009 #57	Depression & scatter					Priority I
NAB-009 #58	Log frame					Priority I
NAB-009 #59	Wood platform & scatter					Priority I
NAB-009 #60	Sill logs & scatter					Priority I
NAB-009 #61	Road cut					Priority I
NAB-009 #62	Depression					Priority I
NAB-009 #63	Can scatter					Priority I
NAB-009 #64	Log frame ruin					Priority I
NAB-009 #65	Road cut					Priority I

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

NAB-009 #66	Tent platform					Priority I	
NAB-009 #67	Depression					Priority I	
NAB-009 #68	Tent platform & scatter					Priority I	
NAB-009 #69	Can scatter					Priority I	
NAB-009 #70	Pipe					Priority I	
NAB-009 #71	Can scatter					Priority I	
NAB-009 #72	Roof wall & pole					Priority I	
NAB-009 #73	Can scatter					Priority I	
NAB-009 #74	Can scatter					Priority I	
NAB-009 #75	Can scatter					Priority I	
NAB-009 #76	Stove & scatter					Priority I	
NAB-009 #77	Test pits					Priority I	
NAB-009 #78	Claim marker					Priority I	
NAB-009 #79	Sled					Priority I	
101	Cairne				Bon #1	PriorityII	
102	Piece of freight sled	#2 obj.			Bon #1	PriorityII	
103	Eroded Hand stacked windrows	A & C	Shoveling in, Ground Sluicing	1930's	Bon #1	PriorityII	
104	Stone Wall- Hand stacked	A & C	Shoveling in, Ground Sluicing		Bon #2	PriorityII	
105	Metal Scrap-Boiler remnants	A & C	Drift mining		Bon #2	PriorityII	
106	Rocker pieces-Equipment cache	#2 obj.		Recent 1960's	Bon #2	PriorityII	
	Bonanza mining Cluster	A & C	Shoveling in, Ground Sluicing	1913-1919			*Enclosed views *Land use follows geologic systems
107	Ground sluicing windrows				Bon #2	PriorityII	*Cluster arrangement reveals a mining type
108	Ground sluicing windrows				Bon #2	PriorityII	
109	Ground sluicing windrows				Bon #2	PriorityII	*Mining techniques showing human tenacity is a response to the rugged canyon topography
110	Two wood timbers;8"x8"-dam remnant				Bon #2	PriorityII	
111	Short ditch & wood				Bon #2	PriorityII	
112	Round Timbers			Recent	Bon #2	PriorityII	
113	Lode prospect scar	A & C	Lode prospect	?????	Bon #2	PriorityII	
114	Re-vegetated prospect pit	A & C	Placer prospect	?????	Bon #2	PriorityII	
116	Lumber Pile				Bon #2	PriorityII	
117	Unmarked Claim post	A,D	Boundary marker				
118	Sluice box, Shovel, Saw			Recent	None	PriorityII	

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

	Canyon Workings Cluster	A & C	Mining Camp Shoveling in, Ground Sluicing, hydraulic	1913-1919 1919-1932			*Cluster arrangement a response to the natural environment-habitation above, mining in canyon
115	Dam remnant				Bon #2	PriorityII	*Cluster arrangement reveals a mining type
149	Historic mining Area & tool scatter				None	PriorityII	*Enclosed views in canyon
NAB-079	Tent Floor			1919-1932	None	PriorityII	*Panoramic views from the habitation portions
NAB-079	Can Scatter			1919-1932	None	PriorityII	*Land use follows geologic systems
NAB-079	Gallon Jugs			1919-1932	None	PriorityII	*Mining techniques showing human tenacity is a response to the rugged canyon topography
NAB-080 #1	Test pit			1913-1919	None	PriorityII	
NAB-080 #2	Wood boxes, saw, crossed posts, pipe, stove, planks, modified Blazo can, milk can, logs, 2"x2" poles			1913-1919	None	PriorityII	
NAB-080 #3	Table, 5 gal. cans, post, shelf, milk can			1913-1919	None	PriorityII	
	Earl Hirst Hydraulic System Cluster	A, B, C, D	Earl Hirst, hydraulic mining	Mid 1930's			
NAB-061	Locus #1-Hydraulic pit, regulator, monitor, turnout box			Mid 1930's	Bon #3	Priority I	*Cluster arrangement reveals a mining system
NAB-061	Locus #2-Bench / Channel hydraulic			Mid 1930's	Bon #3	Priority I	*Wayland's historic photo view
NAB-048 #1	Workshop/forge remains			Mid 1930's	Bon #3	Priority I	*Land use follows geologic systems
NAB-048 #2	Shed & Tent frame foundation 3 wheel barrows			Mid 1930's	Bon #3	Priority I	*Mining techniques showing human tenacity is a response to the rugged canyon topography
NAB-048 #3	Tent frame, wood, 2 stoves			Mid 1930's	Bon #3	Priority I	*View from the nob of confluence with Little El
NAB-048 #4	Log ruin, cache			Mid 1930's	Bon #3	Priority I	
NAB-048 #5	Doghouse			Mid 1930's	Bon #3	Priority I	
NAB-048 #6	Outhouse			Mid 1930's	Bon #3	Priority I	
NAB-048 #7	Boardwalk remains			Mid 1930's	Bon #3	Priority I	
	Eikland-Green Camp Cluster	A, B, C, D	Pete Eikland & Bernard Green Hydraulic mining	Early 1930's			Enclosed landscape, response to geologic systems, cluster arrangement of mining structures
NAB-047 #1	Cabin			Early 1930's	Bon #3	Priority I	
NAB-047 #2	Windlass			Early 1930's	Bon #3	Priority I	
NAB-047 #3	Doghouse			Early 1930's	Bon #3	Priority I	
NAB-047 #4	Doghouse			Early 1930's	Bon #3	Priority I	
NAB-047 #5	Doghouse			Early 1930's	Bon #3	Priority I	

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

NAB-047 #6	Doghouse			Early 1930's	Bon #3	Priority I	
NAB-047 #7	Doghouse			Early 1930's	Bon #3	Priority I	
NAB-047 #8	Doghouse			Early 1930's	Bon #3	Priority I	
NAB-047 #9	Boiler			Early 1930's	Bon #3	Priority I	
NAB-047 #10	Sled, Coil, Gold Pan			Early 1930's	Bon #3	Priority I	
NAB-047 #11	Trash Scatter			Early 1930's	Bon #3	Priority I	
119	Rail of 1/2x2" strip iron & riffles				Bon #4		
121	Hydraulic pit				Bon #4		
120	Ditch leading to washed bank	A & C	Ground sluicing	??????			
122	Recent rock & plastic dam to 2" monitor on east side			Recent			
123	Yoke for horse scrapper	A & C		.	Bon #4		
	Fred Best Camp Cluster	A, B, C, D	Fred Best open cut mining	1913-1914			Spatial location of the cabin is a response to natural features, cluster arrangement of the mining camp, enclosed landscape
NAB-049 #1	Tent frame			1913-1914	Bon #5	Priority I	
NAB-049 #2	Tent frame			1913-1914	Bon #5	Priority I	
NAB-049 #3	Flume sections			1913-1914	Bon #5	Priority I	
NAB-049 #4	Motor				Bon #5	Priority I	
NAB-049 #5	Boiler & Timber Scatter			1913-1914	Bon #5	Priority I	
NAB-049 #6	Wheelbarrow			1913-1914	Bon #5	Priority I	
NAB-049 #7	Stove			1913-1914	Bon #5	Priority I	
NAB-049 #8	Flume remnant			1913-1914	Bon #5	Priority I	
NAB-049 #9	Hand stacked rock			1913-1914	Bon #5	Priority I	
124	Flume				Bon #5	PriorityII	
125	Recent dam			Recent		PriorityII	
126	Dam remnant- west side	A & C	Shov in, Gr sluicing	1913-1919	Bon #5	PriorityII	
	Shushanna Joe Camp Cluster	A,B				PriorityII	
NAB-053 #1	Tent frame			Latter 1930's	Bon #5	PriorityII	
NAB-053 #2	Wagon Remnant	#2 obj.		Latter 1930's	Bon #5	PriorityII	
128	Crib dam remnant	A,C	Style construction unusual for area Shov in, Gr sluicing		Bon #5	PriorityII	
129	Small test pits, sluices & 3 shovels			Recent	Bon #5	PriorityII	

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

	Mid Bonanza Ground sluicing Cluster	A, C	Shov in, Gr sluicing	1914-1918			
130	Stacked stone				Bon #5	PriorityII	heavily covered w/ lichen
134	Dam remnant				Bon #5	PriorityII	
131	Lumber scatter				Bon #5	PriorityII	
132	Bench Workings	A, C	Bench prospect	1932-1939	Bon #5	PriorityII	
133	Freight sled parts	#2 obj. #2 obj.			Bon #5	PriorityII	
135	Hand augers, boiler reamer	#2 obj.			Bon #5	PriorityII	
136	Ground sluicing on high bench, windlass (skipway to test Pit)		Bench Prospect	1930's	Bon #5	PriorityII	
137	Short pipe section & short ditch	?????	Requires investigation		Bon #6	PriorityII	
138	TEST PIT						
139	Boomer dam	A,C	Shov in, gr sluicing	1914-1918	Bon #6	PriorityII	
140	Horse scraper	#2 obj.			Bon #6	PriorityII	
	Nelson's Hydraulic mining Cluster	A,B,C,D	Hydraulic mining	Mid 1930's			
NAB-060	Locus #1-Sluice boxes w/ rail riffles (in place), 2 monitors, hydraulic pit			Mid 1930's	Bon #6		
NAB-060	Locus #2-Area of extensive hydraulic mining & subsequent cat work			Mid 1930's	Bon #6		
NAB-060 #1	Sluice supports			Mid 1930's	Bon #6		
NAB-060 #2	Recent tent camp			Recent	Bon #6		
NAB-060 #3	Recent rock dam			Recent	Bon #6		
NAB-060 #4	Scatter of old and recent mining equipment			Mid 1930's	Bon #6		
NAB-059	Component #A- Castle Rock Dam remains				Lucky Discov	Priority I	
NAB-059	Component #B- Flume in creekbed				1Be-lo Discov	Priority I	
NAB-059	Feature #1- Dump box				1Be-lo Discov	Priority I	
NAB-059	Feature #2- Dam gate sections				1Be-lo Discov	Priority I	
NAB-059	Feature #3- Dam gate sections				1Be-lo Discov	Priority I	

Cluster or systems are the items listed underneath the bold cluster names. If the item has a bold identification number, it is considered an isolated artifact.

Lower Bonanza & Canyon Creek Drainage

NAB-059	Feature #4-Sluicing activity area				1Be-lo Discov	Priority I	
NAB-059	Component #C- Flume Foundation				1Be-lo Discov, None	Priority I	
NAB-059	Feature #1- Spillway				1Be-lo Discov	Priority I	
NAB-059	Feature #2- Regulator box				1Be-lo Discov	Priority I	
NAB-059	Feature #3- Flume bridge remains				1Be-lo Discov	Priority I	
NAB-059	Feature #4- Flume bridge remains					Priority I	
NAB-059	Component #D- Wood Frame flume					Priority I	
NAB-059	Feature #1- Spillway					Priority I	
NAB-059	Component #E & #F- Ditch & Flume Foundation					Priority I	
NAB-059	Feature #1- Regulator box					Priority I	
NAB-059	Feature #2- Regulator box					Priority I	
244	Hydraulic pit					PriorityII	
141	Barrels				None	PriorityII	
143	Sledge yoke						
142	Wagon parts	#2 obj.			None	PriorityII	
144	Boiler, mangled, 3x3x5	#2 obj.				PriorityII	
145	Water wheel, 4" pipes, cast 16"to 12" reducer, 20" rail	#2 obj.				PriorityII	
	Steinberger Cluster	A,B,D	Steinberger	1913-1917		PriorityII	
NAB-086 Feat. #1	Tent pad outline (stack rock platform, ditch			1913-1917		PriorityII	

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Lower Bonanza & Canyon Creek Drainage

	Canyon Creek Habitation Cluster	A, D	Mining camp	1930's		PriorityII	
NAB-088 Feat. #1	Tent platform, chisel , stove, pick head, chopping block, shovel			1930's		PriorityII	
NAB-088 Feat. #2	Spoils pile, plank wall section, stove door, stove, pit			1930's		PriorityII	
	Canyon Creek Water Diversion Cluster	A,C,D	Water diversion system	1919-1932			
127	Short flume leading to workings of old channel				Bon #5	PriorityII	
150	Flume remains						
NAB-087	Post fragment, crushed crate, 2 enameled pans, can scatter, crushed crate, stake, 2"x? fragment, 2"x? w/ nails, log fragment, 1" x 4" post,			Late 1920's		PriorityII	
NAB-089 Feat. #1	Tent pad, artifact scatter, rectangular soldered can			1920's		PriorityII	
NAB-090	Dam			1919-1932		PriorityII	
NAB-090	Ditch segment			1919-1932		PriorityII	
NAB-090	Ditch segment			1919-1932		PriorityII	
NAB-090	Ditch segment			1919-1932		PriorityII	
NAB-090	Pond			1919-1932		PriorityII	
NAB-090	Pond			1919-1932		PriorityII	
NAB-090	Flume			1919-1932		PriorityII	
NAB-090	Headbox			1919-1932			
	Canyon Creek Prospect Cluster	A,C	Prospect Mining				
146	Prospect Pit						
147	Prospect Pit						
151	Rocker box, sluice remnants						
148	Trail		Circulation routes				
152	Claim Post		Boundary marker				

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Upper Bonanza & Coarse Money Creek Drainage

Ref. or site #	Item(s)	Nat. Reg. Criteria	Person or Technology associated with criteria	Date attributed to item(s)	Lies in claim #	Status	Landscape Characteristics
201	Collapsed dog house, parts to 2 stoves, cribbing	A, C	Early habitation	Stampede, boom	None		
202	Boomer dam remnant	A, B, C	Hamshaw, Shoveling in	1914-1919	None		
	Upper Bonanza Mining Cluster	A, C	Shoveling in	1914-1919	None		*Land use follows geologic systems
203	Dam remnant, sluicing area				None		*Cluster arrangement reveals a mining type
204	Two tent locations, trash scatter				None		*Topography modifications
245	Eroded windrows in stream				None		
205	Two tent locations, stove grate	A, C		Early	None		
	Upper Bonanza Habitation Cluster	A	Habitation site	Mid-1940's			*Cluster arrangement *Doghouses --response to the natural environment -- winter circulation patterns *Building type a response to the natural environment -- vegetation *Open views obstructed only by the topography changes *Land use a response to the geology
NAB-050 #1	Tent frame ruin			Mid-1940's	None	Priority I	
NAB-050 #2	Tent frame			Mid-1940's	None	Priority I	
NAB-050 #3	Doghouse			Mid-1940's	None	Priority I	
NAB-050 #4	Doghouse			Mid-1940's	None	Priority I	
NAB-050 #5	Doghouse			Mid-1940's	None	Priority I	
NAB-050 #6	Wood scatter & tools			Mid-1940's	None	Priority I	
NAB-050 #7	Overturned doghouse			Mid-1940's	None	Priority I	
NAB-050 #8	Trash scatter			Mid-1940's	None	Priority I	
NAB-050 #9	Dam remnant			Mid-1940's	None	Priority I	
NAB-050 #10	Flume ruins		Flume in another cluster		None	Priority I	
206	Two dam remnants	A, C	Shov in, gr sluicing		None		
207	Sluice remnants, wagon parts	#2 obj.			1Be-lo Discov		
	Upper Bonanza Water Supply Cluster	A,B,C,D	Water supply system	1915-1930's			
208	Penstock pipe scatter				1Be-lo Discov		*Cluster arrangement reveals the water supply system
NAB-064	Component #A- Ditch line			1915	Shmrck	Priority I	Trestle construction is a response to the natural environment --
NAB-064	Feature #1- Splash dam ruins			1915	Shmrck	Priority I	1) topography

1**Upper Bonanza & Coarse Money Creek Drainage**

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Upper Bonanza & Coarse Money Creek Drainage

NAB-064	Component #B- Flume line			1915	Lucky Discov	Priority I	2)need for water pressure *Panoramic views obstructed only by the topography
NAB-064	Feature # 1- Flume bridge remains			1915	Lucky Discov	Priority I	
NAB-064	Feature #2- Coarse Money Dam			Mid 1930's		Priority I	
NAB-064	Component #C- Flume foundation covered by recent road			Mid 1930's	1Be-lo Discov	Priority I	*Land use a response to geology patterns
NAB-064	Component #D- Flume and ditch line			Mid 1930's		Priority I	*Natural conditions -- vegetation & permafrost -- miners were able to utilize water which accumulated on the hillside, by draining with ditches
NAB-064	Feature #1- Flume box sections			Mid 1930's		Priority I	
NAB-064	Feature #2- Plow, trash scatter			Mid 1930's		Priority I	
222	Dam remnants, flume						
238	Dam remnant						
239	Ditch						
	Castle Rock Staging Cluster	A	*Objects*				
NAB-062 #1	Water pipe	#2 obj.			Lucky Discov	Priority II	*No cluster arrangement integrity
NAB-062 #2	Sluice Boxes	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #3	Scatter of short pieces of pipe & connectors	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #4	2 modified sluice boxes	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #5	Short sections of pipe	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #6	Short pieces of pipe	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #7	Rocks	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #8	Lumber	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #9	Monitor (Giant) Horse scraper	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #10	5 sluice boxes	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #11	Water pipe	#2 obj.			Lucky Discov	PriorityII	

Upper Bonanza & Coarse Money Creek Drainage

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Upper Bonanza & Coarse Money Creek Drainage

NAB-062 #12	Rocks	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #13	Drill	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #14	Metal water pipe (stacked & scattered)	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #15	Lumber	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #15	2 lengths of water pipe sluice boxes	#2 obj.			Lucky Discov	PriorityII	
NAB-062 #16	Sluice line	#2 obj.			1 Be-lo Discov	PriorityII	
209	Stove pieces	#2 obj.			Lucky Discov		
210	Sluice boxes, riffles-long pole, dump box pcs.	#2 obj.		Recent &/or out of place	Lucky Discov		
211	Rock piles	Non-contrib..		Recent	Lucky Discov		
212	Work bench	#2 obj.			Lucky Discov		
213	Boiler	#2 obj.			Lucky Discov		
214	Flume sections, two	#2 obj.			Lucky Discov		
	Coarse Money Confluence Habitation Cluster	A,B		1915-1930's			
NAB-046 #1	Cache			1930's	Shmrck	Priority I	*Cluster arrangement of a mining
NAB-046 #2	Main cabin			1915	Shmrck	Priority I	camp
NAB-046 #3	Cache Ruin			1930's	Shmrck	Priority I	*Doghouses --response to the
NAB-046 #4	Shed			1930's	Shmrck	Priority I	natural environment -- winter
NAB-046 #5	Shed			1930's	Shmrck	Priority I	circulation patterns
NAB-046 #6	Doghouse			1930's	Shmrck	Priority I	*Building type a response to the
NAB-046 #7	Outhouse			1930's	Shmrck	Priority I	natural environment -- vegetation
NAB-046 #8	Shed			1930's	Shmrck	Priority I	*Open views obstructed only by the
NAB-046	Equipment scatter, 2 boilers, monitor			1930's	Shmrck	Priority I	topography changes
216	Dam remnant (2)	A,C	Shov in, gr. sluicing	1914-1919	Shmrck		

Upper Bonanza & Coarse Money Creek Drainage

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Upper Bonanza & Coarse Money Creek Drainage

	Upper Bonanza Shoveling in/camp Cluster						*Cluster arrangement of habitation and mining camp areas
215	Cabin ruin	A,C	Shoveling in camp	1930's			*Land use a response to geology
217	Ground sluice area				Shmrck		*Topographic modifications
241	Ditch						*Open panoramic views
218	Lumber scatter/disassembled sluice box	#2 obj.			Shmrck		
219	Sled remnants	#2 obj.					
	Upper Bonanza Hydraulic Cluster	A,C	Hydraulic mining	1930's			*Cluster arrangement of a mining type
220	Hydraulic mining pit				Shmrck		*Topographic modifications
221	Pipe sections, 12" riveted				None		*Land use a response to geology patterns
223	Low ditch	research	Possibly assoc. with NAB-064		Shmrck		
224	Area of piled rocks (hand stacked	research	Possibly assoc. with NAB-064		Shmrck		
	Upper Bonanza Habitation & Drift Mining Cluster	A, C	Drift mining				*Cluster arrangement of mining camp area
NAB-102 #1	Sled remains				Tony M		*Land use a response to geology
NAB-102 #2	Baking powder tin				Tony M		*Topographic modifications
NAB-102 #3	Round nosed shovel				Tony M		*Open panoramic views
NAB-102 #4	5 gal. fuel? tins w/ wood internal frames				Tony M		*Sled remnants --response to the
NAB-102	Pit and tailings from bulldozer cut				Tony M		natural environment -- winter
NAB-102	Drift Pit				Tony M		circulation patterns
NAB-102	Ditches				Tony M		
	Upper Bonanza Mining Camp Cluster	A, C	Hydraulic mining	1930's			*Cluster arrangement of mining camp area
225	Bench area				Tony M		*Land use a response to geology
226	Trash scatter indicating campsite				Tony M		*Topographic modifications
246	Ditch						*Open panoramic views
227	Campsite	A			Tony M		
228	Dam remnant	A, C	Shov in, gr sluicing		Tony M		
229	Hand stacked rock, extensive	A, C	Shov in, gr sluicing	no associations	Tony M		
230	Cairne						
231	Dam site		Shov in, gr sluicing				

Upper Bonanza & Coarse Money Creek Drainage

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Upper Bonanza & Coarse Money Creek Drainage

	Coarse Money Habitation Cluster	A	Habitation site	1913			*Cluster arrangement of mining habitation area *Open panoramic views *Dog houses --response to the natural environment -- winter circulation patterns
NAB-076	Stone dam, dam gate			1913			
NAB-076	Tent foundation			1913			
NAB-076	Can scatter, old			1913			
NAB-076	Structure outline			1913			
NAB-076	Possible structure outline			1913			
	Coarse Money Habitation Cluster #2	A	Habitation site	1940's			*Cluster arrangement of mining camp area *Land use a response to geology *Topographic modifications *Open panoramic views *Sled remnants & doghouses -- a response to the natural environment -- winter circulation patterns
NAB-077 #1	3 doghouses			1940's			
NAB-077 #2	Cabin, foundation			1940's			
NAB-077 #3	Shed, lumber pile			1940's			
NAB-077 #4	Cabin foundation			1940's			
NAB-077 #5	Possible foundation			1940's			
NAB-077 #6	Drift pit			1940's			
NAB-077 #7	Bellows, cot frame, structure fragments, poles nailed together, wheelbarrow			1940's			
NAB-077	Road			1940's			
232	Isolate 91-A????????						
233	Isolate 91-B????????						
234	Isolate 91-C????????						
235	Isolate 91-D????????						
236	Isolate 91-E????????						
237	Isolate 91-F????????						

Upper Bonanza & Coarse Money Creek Drainage

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Little Eldorado, Skookum, & Snow Gulch Creek Drainages

Ref. or site #	Item(s)	Nat. Reg. criteria	Person or Technology associated with criteria	Date attributed to item(s)	Lies in claim#	Status	Landscape Characteristics
303	Collapased tripod (for monitor????)				Lit El#1		
	Little El Bench Mining Cluster						
309	Possible ditch gate (Still there????)				Lil El#2		
304	Ditch;diverting upstream Little El to lower stream				Ben#1, LitEl#1		
301	Flume, sluice area				Lit El#1		
302	Pole riffles				Lit El#1		
305	Ditch;Little El				Lit El#1		
306	Ditch;draining hillside				Ben#1Ben#2, LitEl#1		
307	Flume, 12" & plow remnant				Ben#2		
308	Sample box (Still there????)No				Lil El#2		
310	Prospect Pits				Ben#2	PriorityII	
311	1/2" pipe				Ben#2		
312	Steam point				Ben#2		
313	Post				Ben#2		
	Snow Gulch Water Supply Cluster						
314	Flume section				Ben#2		
315	Flume section				Ben#2		
316	Timber; 6x6, possible dam site				Ben#2		
325	Ditch;diverting Snow Gulch to Little El				Ben#2, Lit El#2		
	Snow Gulch Mining Cluster						
317	Flume/sluice section; 3'x12'x10'				Ben#2		
318	Flume;12"x12"/sluice section, hand piled stone, ditch				Snow		
348	Handstacks						

1 **Little Eldorado, Skookum, & Snow Gulch Creek Drainages**

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Little Eldorado, Skookum, & Snow Gulch Creek Drainages

	Snow Gulch Exploration Cluster						
NAB-052	Feature #1- Boiler, Collapsed timber, pole stucture			1930's	Snow		
NAB-052	Feature #2- Test pit, timbers			1930's	Snow		
NAB-052	Feature #3- Test pit			1930's	Snow		
NAB-052	Feature #4- Test pit			1930's	Snow		
NAB-052	Feature #5- Rocker box			1930's	Snow		
NAB-052	Ditch			1930's	Snow		
NAB-052	(Not on site map???????)			1930's	Snow		
320	Drift pit, rocker box				Snow		
321	Drift pit				Snow		
	Little Eldorado Drift Cluster						
319	Drift pit				Snow		
328	Horse scraper, windlass, screen				None		
	Upper Snow Mining Cluster						
350	Ditch						
322	Steam poiint				Snow		
323	Dam remnant with flume				Snow		
324	Camp site				Snow		
326	Tent site, metal stove pipe				None		
327	Claim marker						
	Little Eldorado Mining Cluster						
NAB-051	Feature #1-Structure??????			1920's	Lit El#2	Priority I	
NAB-051	Feature #2- Structure???????			1920's	Lit El#2	Priority I	
NAB-051	Feature #3- Structure???????			1920's	Lit El#2	Priority I	
NAB-051	Feature #4- Structure????????			1920's	Lit El#2	Priority I	
NAB-051	Feature #5- Structure w/ pen???????			1920's	Lit El#2	Priority I	
NAB-051	Feature #6- Structure???????			1920's	Lit El#2	Priority I	
NAB-051	Feature #7- Structure????????			1920's	Lit El#2	Priority I	
NAB-051	Feature #8- Structure ?????			1920's	Lit El#2	Priority I	
NAB-051	Feature #9- Structure??????			1920's	Lit El#2	Priority I	
NAB-051	Fire pit			1920's	Lit El#2	Priority I	
329	Small Rock & Plastic dam, Slluice;24" recent			Recent	Lit El#2, Sk'um		

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Little Eldorado, Skookum, & Snow Gulch Creek Drainages

	Skookum Creek Mining Cluster						
330	Channel blasted in rock Exposed buried channel				Lit El#2, Sk'um		
331	Test pits, dump box				Lit El#2, Sk'um	PriorityII	
332	Ground sluiciing pit				Sk'um	Priority I	
333	Ditch; draining hillside				Sk'um	Priority I	
334	Boomer dams; two ruined				Sk'um	Priority I	
336	Natural ditch reversed or enhanced				Sk'um	Priority I	
337	Ditch; Little El-Skookum				Snow	Priority I	
338	Ditch & flume remnants from Little Eldorado				Sk'um	Priority I	
339	Ditch from Chicken Creek					Priority I	
342	Drain or trail??						
343	Dam						
345	Ditch						
346	Handstacks				Sk'um		
340	Road to Chicken Creek						
341	Road/flume platform???						
	Skookum Creek Drift Mining Cluster						
335	Drift pit, dump boxes						

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Gold Run & Glacier Creek Drainages

Ref. or Site #	Item(s)	Nat. Reg. criteria	Person or technology associated with criteria	Date attributed with items(s)	Lies in Claim #	Status	Landscape Characteristics
	Chavolda Creek Sawmill Cluster	A,C	Sawmill site	Mid 1920's			
NAB-045	Feature #A- Cabin, can dump, trail			Mid 1920's		Priority I	*Cluster arrangement
NAB-045	Feature #B- Sawmill site, sawdust pile, carbide-acetylene generator, slot debris, saw blades, horse-drawn sleigh, trolley wheel			Mid 1920's Mid 1920's		Priority I	*Enclosed views (trees limit view) *Land use a response to the natural environment -- vegetation
	Drift Mining Camp Cluster						
NAB-083	Feature #1- Log cabin w/ attached frame lumber porch, double bed, cot, stove			Mid 1920's		PriorityII	*Cluster arrangement *Building type a response to the natural environment -- vegetation
NAB-083	Log cabin			Mid 1920's		PriorityII	*Topography modifications
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	*Land use a response to geology patterns
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	*Doghouses -- response to the natural environment -- winter circulation patterns
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	
NAB-083	Doghouse ruins			Mid 1920's		PriorityII	
NAB-083	Doghouse			Mid 1920's		PriorityII	
NAB-083	Doghouse			Mid 1920's		PriorityII	
NAB-083	Doghouse			Mid 1920's		PriorityII	
NAB-083	Outhouse			Mid 1920's		PriorityII	
NAB-083	Outhouse ruin			Mid 1920's		PriorityII	
NAB-083	Associated artifacts????????			Mid 1920's		PriorityII	
NAB-084	Feature #1-Collapsed audit			Mid 1920's		PriorityII	
NAB-084	Feature #2- Prospect pit			Mid 1920's		PriorityII	
NAB-084	Feature #3- Stove			Mid 1920's		PriorityII	
NAB-084	Feature #4- Drift pit			Mid 1920's		PriorityII	
503	Wooden ore bucket, windless?????? Wheel barrow, can scatter???? (either or both???) (I-18)				Jay 2	Priority I	
504	Area of piled rock, sluice sections			?????????	Jay 2	Priority I	
505	Boiler parts, wheelbarrow (I-12?????)				Jay 2	Priority I	

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	Glacier Creek Mining Camp		mining camp				*Topography modifications
NAB-071	Feature #1- Tent frame; collapsed			Mid 1930's		PriorityII	*Cluster arrangement
NAB-071	Feature #2- Foundation			Mid 1930's		PriorityII	*Building type a response to the
NAB-071	Feature #3- Wood shed			Mid 1930's		PriorityII	natural environment -- vegetation
NAB-071	Feature #4- Saw buck					PriorityII	*Land use a response to geology
NAB-071	Feature #5- Shed			Mid 1930's		PriorityII	*Spatial arrangement is a response
NAB-071	Feature #6- Meat cache			Mid 1930's		PriorityII	to the natural environment --
NAB-071	Feature #7- Can dump			Mid 1930's		PriorityII	topography. Mining in canyon and
NAB-071	Feature #8- Doghouses; four			Mid 1930's		PriorityII	habitation above.
NAB-071	Feature #9- Outhouse			Mid 1930's		PriorityII	*Doghouses -- response to the
NAB-071	Feature #10- Storage hutch			Mid 1930's		PriorityII	natural environment -- winter
NAB-071	Feature #11- Roadway			Mid 1930's		PriorityII	circulation patterns
	Glacier Creek Mining Cluster		Shoveling-in				
501	Dam piece				Jay 1		
502	Dam piece				Jay 2	Priority I	
506	Dam remnant				Jay 2	Priority I	
NAB-070	Feature #1- Boiler, equipment associated with boiler			Early decades of 1900	Jay 3	Priority I	
NAB-070	Feature #2- Dam remains;boomer dam-largest in the district			Early decades of 1900	Jay 3	Priority I	
NAB-070	Feature #3- Board scatter				Jay 3	Priority I	
NAB-070	Feature #4- Regulator, sluice box				Jay 3	Priority I	
NAB-070	Feature #5- Stacked rock terrace			Early decades of 1900	Jay 3	Priority I	
401	Hand stacks & Dam remnant	A, C	Shov in, gr sluicing	Early Rush years	Jay 3	Priority I	
	Historic #2 Below Mining Camp Cluster	A,C,D	Shoveling in, Ground sluicing	Early Rush years			
402	Dam remnant				Jay 3	Priority I	*Cluster arrangement
403	Ditch, ground sluicing				Jay 3	Priority I	*Land use a response to geology
404	Sluice boxes				Jay 3	Priority I	*Doghouses -- response to the
405	Dam remnants, sluice boxes, piled stone			Early Rush years	GldRn Below	Priority I	natural environment -- winter circulation patterns
NAB-069	Feature #1- Sled remains			Early Rush years	GldRn Below	Priority I	*Topography modifications

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Gold Run & Glacier Creek Drainages

NAB-069	Feature #2- Structure foundation			Early Rush years	GldRn Below	Priority I	*Regrowth of mosses on disturbed area associated with habitation
NAB-069	Feature #3- Tent frame/plank floor			Early Rush years	GldRn Below	Priority I	*Beginning of canyon topography -- views limited
NAB-069	Feature #4- Freight sled			Early Rush years	GldRn Below	Priority I	
NAB-069	Feature #5- Rock retaining wall on terrace			Early Rush years	GldRn Below	Priority I	
NAB-069	Feature #6- Tin can scatter			Early Rush years	GldRn Below	Priority I	
NAB-069	Feature #7- Mining cut(what kind?????), barrel			Early Rush years	GldRn Below	Priority I	
NAB-069	Feature #8- Prospect pit			Early Rush years	GldRn Below	Priority I	
NAB-069	Feature #9- Structure foundation			Early Rush years	GldRn Below	Priority I	
406	Dam remnants	A, C		research required	GldRn Below		
407	Sluice box remnant	#2 obj.			GldRn Below		
408	Hand stacked rock, dam remnants	A, C		research required	GldRn Below		
409	Freight sled remnant	#2 obj.			GldRn Below		
410	Dam remnants	A, C			GldRn Below		
	Dipple's Mining Camp Cluster	A,C,D					
NAB-068	Feature #1- Skid shack				GldRn Below		*Cluster arrangement of habitation and mining camp
NAB-068	Feature #2- Cabin			1940's	GldRn Below	Priority I	*Land use a response to geology
NAB-068	Feature #3- Waste tailings				GldRn Below	Priority I	*Doghouses -- response to the natural environment -- winter
NAB-068	Feature #4- Doghouse, shed				GldRn Below	Priority I	circulation patterns
NAB-068	Feature #5- Outhouse			1940's	GldRn Below	Priority I	*Topography modifications

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Gold Run & Glacier Creek Drainages

NAB-068	Feature #6- Drift pit		Bush	1913-1914	GldRn Below	Priority I	*Changes in the creek channel location evident here
NAB-068	Feature #7- Road, drift pits		Bush	1913-1914	GldRn Below	Priority I	*Open views obstructed only by topography changes
NAB-068	Feature #8- Ditch from Discovery Pup to Gold Run			1930's	GldRn Below	Priority I	
NAB-068	Feature #9- Lumber storage				GldRn Below	Priority I	
NAB-068	Feature #10- Portable boiler		Bush	1913-1914	GldRn Below	Priority I	
NAB-068	Feature #11- Dog house			1940's	GldRn Below	Priority I	
NAB-068	Feature #12- Blacksmith shop			1940's	GldRn Below	Priority I	
NAB-068	Feature #13- Drift pit		Bush	1913-1914	GldRn Below	Priority I	
NAB-068	Feature #14- Tent frame				GldRn Below	Priority I	
NAB-068	Feature #15- Buried cans				GldRn Below	Priority I	
NAB-068	Feature #16- Wood bucket/rings; three		Bush	1913-1914	GldRn Below	Priority I	
NAB-068	Feature #17- Mining equipment; windlass				GldRn Below		
NAB-068	Feature #18- Dump box				GldRn Below		
411	Rock wing dam				GldRn Below		
NAB-067	Feature #1- Churn drill	#3 obj.		1930's			
NAB-067	Feature #2- Structure; frame w/ plank floor	non-con	(compatible structure)	Modern		Priority II	
412	Boomer dam	A,C	Shov in, Booming				
413	Chicken wire trash dam	research					
	Carroll Mining Camp Cluster	A,B,C	Shov in, gr sluicing	1920's			
NAB-066	Feature #1- Main cabin			1920's		Priority I	*Cluster arrangement
NAB-066	Feature #2- Work table					Priority I	*Land use a response to geology
NAB-066	Feature #3- Stairs					Priority I	*Doghouses -- response to the

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Gold Run & Glacier Creek Drainages

NAB-066	Feature #4- Shed					Priority I	natural environment -- winter
NAB-066	Feature #5- Post scatter					Priority I	circulation patterns
NAB-066	Feature #6- Retaining wall					Priority I	*Regrowth of vegetation on stacked
NAB-066	Feature #7- Storage area					Priority I	rock piles
NAB-066	Feature #8- Boomer dam			1920's		Priority I	*Topography modifications
NAB-066	Feature #9- Dog house			1920's		Priority I	*Views limited by the topography
NAB-066	Feature #10- Dog house			1920's		Priority I	
NAB-066	Feature #11- Collapsed wooden			1920's		Priority I	
NAB-066	Feature #12- Bunkhouse			1920's		Priority I	
NAB-066	Feature #13- Meat cache			1920's		Priority I	
NAB-066	Feature #14- Board pile			1920's		Priority I	
NAB-066	Feature #15- Wood platforms, cot			1920's		Priority I	
NAB-066	Feature #16- Metal screening scatter			1920's		Priority I	
NAB-066	Feature #17- Board scatter			1920's		Priority I	
NAB-066	Feature #18- Rocker box			1920's		Priority I	
NAB-066	Feature #19- Tin can scatter			1920's		Priority I	
NAB-066	Feature #20- Outhouse remains			1920's		Priority I	
414	Stacked rock		poor integrity	1920's			
415	Tripod, sluice sections		unique construction	Early			
417	Ruined structure Sluice box remnants Dam remnants	research					
421	Ditch from Poorman Creek to Gold Run Creek						
418	Cairne	research	Boundary marker?				
416	Horse scraper	#3 obj.					
	Upper Gold Run Habitation Camp Cluster	A & non-contribut	A = Habitation Site non-contributing is compatible				
NAB-065	Feature #1- Cabin			Recent			*Cluster arrangement
NAB-065	Feature #2- Storage shed, diesel engine & pump			Recent			*Land use a response to geology
NAB-065	Feature #3- Bunkhouse			Recent			*Doghouses -- response to the
NAB-065	Feature #4- Outhouse			Recent			natural environment -- winter
NAB-065	Feature #5- Dam			Recent			circulation patterns
NAB-065	Feature #6- Roadway			Recent			*Open views to the North

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NAB-065	Feature #7- Terrace			Recent			*View of Gold Hill
NAB-065	Feature #8- Ditch also #422	A		1919-1932		PriorityII	
NAB-065	Feature #9- Foundation clearing-tent site	A		1919-1932		PriorityII	
419	Recent ground disturbance	non-con		Recent			
420	Hand stack tailings	A,C	Shov in, gr sluicing				Re-vegetative growth
	Poorman Creek Mining Cluster	A,C	Shov in, gr sluicing	1940's			
NAB-073	Two room Cabin; plank tent frame addition			1940's		Priority I	*Cluster arrangement
NAB-073	Small structure ruin					Priority I	*Land use a response to geology
NAB-073	Tent foundation			1940's		Priority I	*Doghouses -- response to the
NAB-073	3 dams			1940's		Priority I	natural environment -- winter
NAB-073	2 ditch remnants			1940's		Priority I	circulation patterns
NAB-073	Riveted penstock pipe; one section					Priority I	*Topography modifications
NAB-073	2 prospect pits			1940's		Priority I	*Views limited by the topography
NAB-073	2 flume scatters			1940's		Priority I	
NAB-073	Tailings pile			1940's		Priority I	
NAB-073	Rocker box			1940's		Priority I	
	Upper Glacier Creek Mining Cluster	A,C	Ground sluicing	1920's			
NAB-074	Claim corner stake		Boundary marker			Priority I	*Cluster arrangement
NAB-074	Diversion dam			1920's		Priority I	*Land use a response to geology
NAB-074	Wheel barrow					Priority I	*Doghouses -- response to the
NAB-074	Dam remnants			1920's		Priority I	natural environment -- winter
NAB-074	Flume, cultural refuse scatter, 55 gal. drum					Priority I	circulation patterns *Topography modifications
NAB-074	Prospected area					Priority I	*Views limited by the topography
	Upper Glacier Creek Prospect Cluster	A,C	Prospect mining	1918			*Cluster arrangement
NAB-075	Feature #A- Stone maul					PriorityII	*Land use a response to geology
NAB-075	Feature #B- Stone cache/carine			1918		PriorityII	*Topography modifications --
NAB-075	Feature #C- Lumber/log tent frame scatter			1918		PriorityII	response to natural environment -- limited water
NAB-075	Feature #D- Prospect it			1918		PriorityII	*Views limited by the topography
NAB-075	Trash scatter					PriorityII	
NAB-075	Road					PriorityII	

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Gold Run & Glacier Creek Drainages

	Upper Gold Run Water Supply Cluster	A,C	Water Supply				*Cluster arrangement *Land use a response to geology *Topography modifications -- response to natural environment -- limited water *Views limited by the topography
422	Ditch draining hillside swamp to Gold Run Creek						
429	Ditch						
430	Ditch						
423	Ditch from Glacier Creek to Gold Run Creek						
424	Ditch from Poorman Creek to Upper Gold Run Creek						
425	Tract Vehicle	non-con					
426	Flume remnants						
427	Bulldozer cuts	A,C	Bulldozer	undated			
428	Conical tailings pile	research	Stock pile waste	undated			

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Big Eldorado Creek

Ref. or Site #	Item(s)	Nat. Reg. criteria	Person or technology associated with criteria	Date attributed to item(s)	Lies in claim#	Status	Landscape Characteristics
	Lower Big El Habitation Cluster	A, D		1930's	Ole 4		*Cluster arrangement *Topography modifications *Structure a response to natural environment -- veg. & topography *Boundary marker *Land use a response to geology
NAB-044	Ditch -- below			1930's	Ole 4		
NAB-044	Possible rock dam			1930's	Ole 4		
NAB-044	Stacked stone			1930's	Ole 4		
NAB-044	Unmarked claim post			1930's	Ole 4		
NAB-044	Sill logs for 2 tent frames			1930's	Ole 4		
NAB-044	Cache			1930's	Ole 4		
NAB-044	Ditch			1930's	Ole 4		
645	Hand stack rock			1930's	Ole 4		
601	Post of control dam	research			Ole 4		
602	Prospect pit	research			Ole 4		
603	Old tailings in streambed and ditch	A, C	Windrows/gr. sluicing	1930's			
604	Test Pit				Ole 2		
605	Crude dam			Not found '97	Ole 2		
606	Old garbage dump/probable habitation site			Not found '97	Ole 2		
607	Ground sluice (covered by willows)				Ole 2		
608	Stacked rock; hand stacked terrace				Ole 1		
609	Tailings; stacked terrace				Ole 1		
610	Tailings; stacked into terrace				Ole 1		
611	Wing dam posts; diversion dam remants				Ole 1		
	Big El Drift Mining Cluster	A,C	Drift mining	1920-1940			*Cluster arrangement *Topography modifications *Land use a response to geology
613	Platform w/ valved pipe angles				Ole 1		
614	Windlass w/ frame				Ole 1		
	Stevens/Peterson Mining Cluster	A,B,C,D	Red Stevens Peterson & Peterson	1920-1940			*Land use a response to natural environment--water diverted for use *Handstacks a response to the rocky terrain-needed to get out of the way for mining beneath
608	Stacked rock; hand stacked terrace				Ole 1		
609	Tailings; stacked terrace				Ole 1		
610	Tailings; stacked into terrace				Ole 1		
611	Wing dam posts; diversion dam remants				Ole 1		

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Big Eldorado Creek

612	Stacked rock; terrace				Ole 1		*Cluster arrangement
615	Flume support remnants				Ole 1		*Topography modifications
616	Historic sluice box remains				Ole 1		*Land use a response to geology
617	Stacked rock; both sides of channel, parrallel channels				Ole 1, Rocky 1	Priority I	
621	Ground sluicing area						
622	Ground sluicing area				Rocky 1		
623	Stacked rock w/ lichen, milk cans				Rocky 1		
624	Prospect pit				Rocky 1		
NAB-063	Feature #1- Cabin, 55 gal. stove fuel, drainage ditch, stone walkway, burn barrel, coffee pot, timber pile			1940's	Rocky 1	Priority I	
NAB-063	Feature #2- Toolshed, wheelbarrow, AV gas cans, stockpiled mining equipment, sluice box fragment scatter			1940's	Rocky 1	Priority I	
NAB-063	Feature #3- Sluice box, scatter, associated artifacts, chair, 55 gal. drum, bench, riffles				Rocky 1	Priority I	
NAB-063	Feature #4- Tentframe				Rocky 1	Priority I	
NAB-063	Feature #5- Outhouse, picks in stump, milled lumber stack			1940's	Rocky 1	Priority I	
NAB-063	Feature #6- Tentframe site, cans, shovel, pick ax head, wheelbarrow wheel				Rocky 1	Priority I	
NAB-063	Tailings pile leveled by bulldozer				Rocky 1	Priority I	
627	Ditch to facilitate ground sluicing on the banks of Big Eldorado Creek				Tony 1, Rocky 1	Priority I	
633	Rock diversion dam, ditch					Priority I	
646	Free standing Hand Stack Rock					Priority I	
647	Sluice Box Remains					Priority I	
648	Ditch line					Priority I	
649	Dam ruin					Priority I	
650	Hand stacked terrace					Priority I	
625	Ditch	A,C		1913-1919	Tony 1		
626	Stacked rock lining creek channel	no-cont		Recent	Tony 1		

2 Big Eldorado Creek

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Big Eldorado Creek

	Upper Big El Drift Mining Cluster	A,C	Drift mining	1913-1919	Rocky 1		*Cluster arrangement
618	Windlass, wood scatter(probable drift mining location)				Rocky 1		*Land use a response to natural environment--winter mining type
619	Lumber scatter				Rocky 1		*Topography modifications
620	Wheelbarrow, galvanized tub, sluice boxes				Rocky 1		*Land use a response to geology
628	Old garbage scatter, stove	A,B,Site	O'Malley Camp	1913-1915	Tony I	Priority I	
629	Shed; hanger type	no-cont		Recent		Priority I	
630	Shed	no-cont		Recent		Priority I	
631	Wheelbarrow, sheet metal	no-cont		Recent didn't find summer '97		Priority I	
632	Shot rock and blasted bedrock	no-cont		Recent		Priority I	
634	4 drift shafts, wagon remnants, possible ground sluice area	A,C	Drift, ground sluicing	1913-1919	Tony I	Priority I	
635	Stone diversion dam	A,C	Water supply	1913-1919	Tony I	Priority I	
	Upper Big El Water Collection Cluster	A,C	Water supply	1913-1919			*Land use a response to natural environment--water collection
636	Ditch					Priority I	*Cluster arrangement
652	Dam remnant						*Topography modifications
637	Broad cut behind bar, prospect pits	A,C	Prospect mining	1913-1919		Priority I	
638	Ground sluice area	A,C		Recent		Priority I	
639	Prospect pits,; three	A,C	Prospect mining	1913-1919		Priority I	
640	Rock cairne w/ post	A,C	Boundary marking	1913-1919		Priority I	
	Upper Big El Prospect Cluster	A,C	Prospect mining	1913-1919			*Cluster arrangement
641	Possible prospect pit					Priority I	*Land use a response to geology
642	Ditch diversion, can scatter, posts, prospect pits						*Land use a response to natural environment--edges of pay streak
643	Post, pick head, C-ration can	A,C	Boundary marking	1913-1919			
644	Historic Trail			1913-1919	Rocky 1, Ole 1, Ole 2	Priority I	
651	Mined Terrace	A,C	??????	1913-1919	Tony 1		
654	Cat Cut Road						
655	Stove & Wooden Barrel pieces						
663	Shaft/ Prospect Pit						

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Big Eldorado Creek

664	Tet Pit in Scree						
665	Stone diversion Dam Remnant						
666	Discovery Posts						
668	Early Stream Bed workings						
669	Low hand stack rock-partially covered						
670	Hand Stacked Terrace						
671	Boulder Pile						
672	Trail						
673	Diversion Ditch						

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APPENDIX II
HISTORIC TIME LINE FOR CHISANA-GOLD HILL LANDSCAPE

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Discovery Fraction	1913- Berglund & Doyle; staked	1914- One operator cleaned out the crevices of the agglomeratic bedrock with pick and shovel, bedrock of only about 12 feet wide, large boulders		
Bonanza Discovery	1913- N.P. Nelson; staked a discovery claim and christened the stream 'Bonanza Creek'	1916- James and Nelson retrieved their claims from Hamshaw During 1918- James & Nelson; divided their joint holdings	1930- James; worked 1931- James; worked by employing an automatic dam to ground sluice	1936- James; 2 employees; worked; cleaned an abundance of bedrock that season but their returns were poor
Bonanza No. 1	1913- James, Nelson, Wales, and Johnson; staked claims	1916- James and Nelson retrieved their claims from Hamshaw During 1918- James & Nelson; divided their joint holdings		
Bonanza No. 2	1913- Taylor; staked; no work done on this ground 1913- Costello; staked bench claim	June 1914- seven men; workable width of the canyon floor 30 feet; creek diverted to the one side; canvas hose to the sluice boxes set on a 6% grade; half length of claim was worked 1917- Taylor and McClellan; mined 1917- McGettigan & Bob Hover; worked bench	1922-23- Tony McGettigan; mined	1935- Earl Hirst; employed four men 1936- Hirst; crew; located an old creek channel; used a giant to remove the overburden; cleaned 3,000 square feet of bedrock 1937-1938- Hirst; hydraulic operations; worked a bench on the canyon's south limit 1939-1940- Hirst; mined a bench on the east side, about 25' above the creek; diverted water from the upper end of the claim, transporting it to the site via an elaborate wooden flume to the sluice boxes

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 3	1913- Fred Best or lessees; mined	Spring 1914- Best & Greene; crew of10 men; narrow canyon; lower end of claim 14' gravels; low gold; mining then begun 600' below upper line; gravels 2' to 4' deep; large boulders; 300' flume diverted water 1914- George Williams; worked 1915- Fred Best & Don L. Greene; fair return 1916- Andy Taylor and Joe McClellan; operated 1917- Best & Greene; mined 1919- Greene & employees; mined	1922-23- Greene & Joe Davis; mined 1926- Eikland; mined	1937-1938- Greene; mined a south bench 1939-1940- Greene; operated on the south side of the canyon about 100' above the creek; he obtained water from a gulch to the west of Bonanza, using an inverted siphon to bring it to his pit
Bonanza No. 3A	1913- Fred Best or lessees; mined	1914- Best; canyon rocks; workable width 12'; gravels 2'-8'; 6 men; flume to carry water past pick and shovel; 12 sluice boxes with pole riffles; clay soils required dump box		1937-1938- Shushanna Joe; worked
Bonanza No. 3B	Summer,1913- Joe P. McClellan who recovered several thousand dollars of gold.	1914- gorge in canyon rocks- rough bedrock retained the gold; bedrock depth less than 2'; valley sides contain bench gravels; tents 15' above the creek located on pay streak 1915- Joe McClellan & Robert W. Wiley; crew of five sluiced		1937-1938- Shushanna Joe; worked 1940- group of unidentified Native men; mined

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 4	1913- James, Nelson, Wales, and Johnson; staked claims	1914-Hamshaw- ground-sluicing, leaving a foot or two above bedrock to be shoveled into the sluice boxes, a horse team and scraper were used	1921- Eikland & Carroll; purchased from Nelson & Hans Running; worked open-cuts summer; automatic dams to remove overburden, underlying gravels by hand shoveling techniques; drift-mined- winter	
		1915- Fletcher Hamshaw's twelve-man crew finished mining No. 4 and moved up to the lower end of No. 5	1922-23- Miles Atkinson & Pete Eikland; operated	1936- Greene; two employees; hydraulically mined the east bench
		1915- James; crew of seven built a 1000' flume from Coarse Money Creek for hydraulic mining on Bonanza No. 9. James & Nelson extended the ditch, crossing from the north to the south of the creek at Bonanza No. 6 to Bonanza No. 4	1926- A. Nelson; worked	1940- Shushanna Joe; group of unidentified Native men; mined
		1916- James and Nelson retrieved their claims from Hamshaw		
		1917- James, Wales, Nelson, & Billy Johnson operated Nos. 4,5,6, and 9		
		During 1918- James & Nelson; divided their joint holdings; Nelson acquiring Bonanza No. 4; it meant added work for Nelson, who was forced to build a new camp on the claim		
Bonanza No. 5	1913- James, Nelson, Wales, and Johnson; staked claims	1914-Hamshaw- ground-sluicing a depth of 4-5', leaving a foot or two above bedrock to be shoveled into the sluice boxes, a horse team and scraper were used to clean up tailings.	1926- McGettigan & Greene; operated	1934-1935- Nelson; built ditch and flume system; starting about a half mile below the confluence with Coarse Money Creek and extending downstream past the mouth of Little Eldorado Creek
	1913- Claire; staked bench	Fall of 1914-Hamshaw operation- rich ground was found on the on the north valley wall	1929- McGettigan and Greene; working	1937-1938- The Nelson Mining Company; employed five men
		1915- Fletcher Hamshaw's twelve-man crew finished mining No. 4 and moved up to the lower end of No. 5		
		1916- James and Nelson retrieved their claims from Hamshaw		
		1917- James, Wales, Nelson, & Billy Johnson operated Nos. 4,5,6, and 9		
		During 1918- James & Nelson; divided their joint holdings		
		1919- James & Farstredt; worked; built an elaborate boomer dam		

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 6	1913- James, Nelson, Wales, and Johnson; staked claims	1914-1915- Hamshaw operation	1921- Swanson & Hans Running; leased from James & Thornton; worked open-cuts summer; automatic dams to remove overburden, underlying gravels by hand shoveling techniques; drift-mined- winter	1935- N. P. Nelson; employed six men
	1913- Walstrom; worked	1915- Max Altman; nine man crew made several cuts on the lower end	1922-23- James & Thornton; six men; worked claim	1936- N. P. Nelson; hydraulic operation on the south bench
		1915- James; crew of seven built a 1000' flume from Coarse Money Creek for hydraulic mining on Bonanza No. 9. James & Nelson extended the ditch, crossing from the north to the south of the creek at Bonanza No. 6 to Bonanza No. 4		1937-1938- The Nelson Mining Company; employed five men
		1916- James and Nelson retrieved their claims from Hamshaw		1939-1940-The Nelson Mining Company; he moved his hydraulic operation to the east side of the creek (approximately 300 feet) and fifty feet above the creek
		1917- James, Wales, Nelson, & Billy Johnson operated Nos. 4,5,6, and 9		
		1918- James & Nelson; divided their joint holdings		
		1919- James & Farstredt; worked; built an elaborate boomer dam		
Bonanza No. 7	1913- Fred Best or lessees; mined	1914- Fred Best; widened terrain- no flume; creek to one side; 10 lengths sluice boxes & dump box; boxes to be lifted 10' on the upper; boomer dam used with ground sluice operation		
		1914- McBabe; worked lower end of claim		
		August, 1914- Fred Best; Flood-"it looked like a hurricane struck No. 7, with flumes, sluice boxes, [and] lumber . . . scattered everywhere" (Best, August 16, 1914).		
		1915- Edward 'Shorty' Briggen & Hocke leased from Best & Greene; five employees		
		1916- Fred Best and Don Greene; worked		
		1917- Best & Greene; mined		

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 7A	1913- Fred Best or lessees; mined	1914- Fred Best; too little gold to justify mining, prospecting ditch 100' was dug without reaching workable ground 1915- Best; mined 1915- John Ludwig; mined		
Bonanza No. 7B		1914- Andy Taylor; successful year 1915- John Ludwig & partner; sluiced		
Bonanza No. 8	1913- Fred Best or lessees; mined	1914- Hamshaw's operation; worked briefly but encountered little gold; July suspended operations 1914-Lem Gates and Dud McKinney leased from Fred Best; worked gravels about 400' long & 12' wide; 3 feet thick above bedrock; Gold unevenly distributed 1914- Jim Hagen & Tom Johnson; worked portion 1915- Jim Hagen & Sedley; mined 1917- McKinney; worked	1931- A. S. Johnson; reworked, cleaning around 20,000 square feet	
Bonanza No. 8A Fraction	1913- Bollinger & Costello leased from Best; mined	1914- Gates & McKinney leasted from Best; worked 1915- Horatio Morgan; worked		
Bonanza No. 9		1914- Dubois & Brady; work produced little more than wages 1915- James; crew of seven built a 1000' flume from Coarse Money Creek for hydraulic mining on Bonanza No. 9. James & Nelson extended the ditch, crossing from the north to the south of the creek at Bonanza No. 6 to Bonanza No. 4 1917- James, Wales, Nelson, & Billy Johnson operated Nos. 4,5,6, and 9 1918- James & Nelson; divided their joint holdings		1936- A. S. Johnson; drift mined a bench on the south limit

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 10		1914- Carl Whitham-upper half; lessee-lower half; dikes; lower half gold on surface of bed rock with 4' gravels; upper claim used a horse scraper to remove the surface gravels 1915- Robert M. Clark; mined the lower end; James H. Murie; eleven employees on upper end 1916- Jim Murie & Jack Costello; mined 1917- Ed McMullen & Nelson; mined 1919- McMullen & McGettigan; worked		
Bonanza No. 11	1913- Dud McKinney; staked	1914- McKay and Clinton prospected the lower end, no productive ground; July, 1914- Dud McKinney & Lem Gates; found large gold nuggets; gravels 4' to 5' deep 1915- Dud McKinney & crew; mined the upper part; Huntley and Moore, leased the lower part 1916- Al Wright & McNutt; worked 1917- Al Wright; worked	1931- McGettigan; installed a new splash-dam and ground-sluiced about 4,000 square feet of bedrock	1933- McGettigan; operated 1936- McGettigan; worked
No.11 Fraction		1915- Alfred T. Wright & Anderson; worked the upper end 1916- Al Wright & McNutt; operated 1917- Al Wright; worked		
Bonanza No. 12	1913- Dud McKinney & Lem Gates; staked August, 1913- Jack McDonald leased from McKinney & Gates; worked	1914- Abrahamson &two men; lower claim; wheelbarrows remove overburden; another three-upper half; gentle creek banks- sluicing from cut, 18' wide x 85'; Water flow enough for sluice head 1915- George Bittner & partner; operated 1916- Lewis V. Stanley; prospected on the stream		1936- McGettigan; worked 1937 - 1938- McGettigan; operated a shoveling in operation 1940- McGettigan; worked
Bonanza No. 13		1915- James, Eagan, and Ryan; examined 1919- Aaron Nelson; worked		

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza No. 14	1913- Andy Taylor & Tom Doyle; staked	July, 1914- no active mining was being done 1916- Lewis V. Stanley; prospected on the stream		
Bonanza No. 15	1913- several hundred feet of bedrock drains dug	July, 1914- no active mining was being done		
Bonanza No. 16	1913- some attention from prospectors	July, 1914- no active mining was being done		
Bonanza No. 17	1913- some attention from prospectors	July, 1914- no active mining was being done 1915- John Nichols; prospected for Chisana City store owner Sam Shucklin		
Bonanza No. 18	1913- Fred Best or lessees; mined; shaft 85 feet deep, with a 25 foot drift from the bottom	July, 1914- no active mining was being done		
Canyon Creek	1913- Bollinger & Costillo; staked claims	1914-lode claims; staked about three-fourths of a mile above its mouth, but no development work was done in 1914- Steinberger; prospected 1915- Aaron Nelson; prospected		
Coarse Money	1913- Fred Haggren; worked Discovery Bench 1913- Kingson; staked ground	1915- Eagan & company; worked No. 1		1940- Al Peterson and Charlie Hawkins; prospected

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Little Eldorado Discovery Bench	1913- James and Wales; worked; gravels mined were only 4' in depth and the pay streak was 100' wide			
Little Eldorado No.1	1913- Billy James & N. P. Nelson & M. Wales; assisted by Andy Taylor & Tommy Doyle; began sluicing , recovered nearly 200 ounces in just two days.	1914-Hamshaw- ground-sluicing a depth of 4-5', leaving a foot or two above bedrock to be shoveled into the sluice boxes, a horse team and scraper were used to clean up tailings. Fall of 1914-Hamshaw operation- rich ground was found on the east bench 1915- Hamshaw's laymen, Andy Johnson & McGovern, worked the upper left limit 1916- James and Nelson retrieved their claims from Hamshaw 1916- James and Nelson; operated 1917- James, Wales, Nelson, Billy Johnson; operated 1918- James & Nelson; divided their joint holdings	1922-23- James & Thornton; six men; worked claim 1926-A. S. Johnson; employed three men; operated a small hydraulic plant to work the benches of the creek 1931- Jack Carroll; worked	1933- was also worked
Little Eldorado No. 2	1913- Whitham; staked	Summer, 1914- Carl Whitham; wide stream flat from 75'-150' gravels 3' deep; 17 sluice box; water pressure through a canvas hose; nozzle to keep the tailings from piling up at end of sluice line 1915- Carl Whitham; ten employees operated 1916- Whitham; mined 1917- Whitham; mined	1922- Whitham; worked 1929- Joe Davis; mined Whitham's ground 1930- Joe Davis leased Whitham's claims; produced the most gold for the season	1933- was also worked 1936- Davis; operated 1940- Davis; operated
Little Eldorado No. 2 Fraction		1916- Whitham; mined	1929- Joe Davis; mined Whitham's ground 1930- Joe Davis leased Whitham's claims; produced the most gold for the season	

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Little Eldorado No. 3		1914- Waggoner & Johnson; cut about 50' wide with depth of 3' was worked; gold recovered from layer of false bedrock under which 2' of gravels lay on the true bed rock 1915- William "Billy" McLennan; six men mined		1937-1938- unidentified Native man; worked
Skookum Creek No. 1	1913- Sargent; staked	1914- Range, Stone, leased from Sargent; lacked water; constructed ditch to Little Eldorado; store water- sluice intermittently; worked 224'; thawed with surface water; 14' overburden of which 6' ice 1915- Range & Stone; worked Bud Sargent's claim 1916- Whitham; mined 1917- Bud Sargent & D. Percy Thornton; worked 1919- Mullet & Thorton; worked claim		1936- Davis; operated 1937-1938- Joe Davis; operated a hydraulic plant
Skookum Creek No. 2	1913- Bollinger & Costello; staked	1915- George Woodman & Deffinbaugh; mined Winter 1915- deep mines were worked 1917- Bud Sargent & D. Percy Thornton; worked		1937-1938- Joe Davis; operated a hydraulic plant
Snowgulch No. 1	1913- Whitham; staked; Wiley; worked	1914- J. E. McGuire; prospected; found workable gravel in both the stream bed and on the benches, they had to delay their work- there was nowhere to dispose of the tailings 1916- Whitham; worked		
Snowgulch Nos. 2, 3, 4	1913- J.E. McGuire; staked claims	1915- W. E. Nelson; examined Nos. 3 & 4		
Lucky Pup	1913- Bollinger & Costello; staked	1915- E. J. "Jack" Costello; examined		
Bug Gulch	1913- Tom Granvile; staked Nos. 3 & 4	1916- McClellan & Charles Fogelberg; worked a claim		

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Big Eldorado No. 2 Above	1913- Matilda Wales; staked; Griffith leased from Wales			
Big Eldorado Discovery Claim	1913- Billy James; staked this discovery claim	1914- Hamshaw, leased to two men; prospects revealed 10' of stream gravels, with a few small nuggets; ground frozen & required thawing before it could be sluiced; little sluicing was done during the year		
Big Eldorado No1 Below	1913- W. D. "Dud" McKinney & Anthony McGettigan; staked claim	1914- two men; stream gravels averaged about 7 feet in depth	1922-1923- Shorty Briggen, Aaron Nelson and Jack O'Hara; operated	1933- Knut and Ulrich Peterson; began working 1936- Peterson brothers; operated a "boomer' dam; they also discovered a sulfide deposit, on which they filed a lode claim, optimistically called the "Monte Carlo Lode"
Big Eldorado No. 2 Below	1913- James E. Hagen & partners; prospected Big Eldorado Creek, reportedly recovering some gravel that yielded thirty cents to the pan	1917-Shorty Briggen; mined	1922-1923- Shorty Briggen, Aaron Nelson and Jack O'Hara; operated	
Big Eldorado No. 3 Below	1913- W. D. "Dud" McKinney & Anthony McGettigan; staked claim	1914- Ten men; creek flows through a narrow gorge cut into diorite; about 250' of the creek bed mined to an average width of 30'; stream gravels averaging only 2' in thickness; 2 -4' of the diorite is removed in mining, where the gold was located 1915- Richard Bell; mined 1917- J. E. McCabe, E. R. Behling & Blas Joseph "Joe "Davis; operated	1920- Red Stevens re-staked the property; hired six men; no assessment work done, which allowed him to restate the property previously claimed by Tony McGettigan and Dud McKinney; Stevens , set up a big tent camp on #3 and commenced ground sluicing	
Big Eldorado No. 4 Below	1913- W. D. "Dud" McKinney & Anthony McGettigan; staked claim	1914- two lessees; creek deep & narrow gorge cut into diorite; stream gravels averaged 6' in thickness, and 4' of surface material ground-sluiced before shoveling; a pit 600' long and 12' wide mined; 2-4' the diorite taken up and washed 1915- Montgomery and Ketching; sluiced	1920- Red Stevens re-staked the property; hired six men; no assessment work done, which allowed him to restate the property previously claimed by Tony McGettigan and Dud McKinney; Stevens , set up a big tent camp on #3 and commenced ground sluicing	
Lower Big Eldorado	1913- Hagen, Jackson, Ives; staked			

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Gold Run No. 2 Above		1914- One man; prospected the benches some 10-15 feet above the creek; the amount of gold found was insufficient to justify mining; little water 1917- James McDonald; worked	1922-1923- Dud McKinney and Jack Carroll; worked 1926- Jack Carroll; worked	
Gold Run No. 1 Above	1913- Costello; staked 2 bench claims	1914- Morgan & Wiley; crew of two; a pit 500 feet long and 40 feet wide was ground-sluiced. A water supply ditch was constructed to the upper part of Discovery Pup. The half a mile long ditch supplied additional water for sluicing	1929- Barney McKinney; sluiced 1930- Barney McKinney; employed a 'boomer' dam; cleaned about 6,000 square feet of bedrock, the lack of water hampered mining operations	1940's- John Hadel; mined
Gold Run No. 1 Below	Winter 1913- Charles Bush & three colleagues; sinking drift holes at the mouth of Discovery Pup; shafts revealed that the bedrock lay about 14' below the surface	Winter 1915- deep mines worked	1922-1923- Dud McKinney and Jack Carroll; worked 1926- Jack Carroll; worked	
Gold Run No. 2 Below	1913- Horatio Morgan & Robert Wiley; built ditch on Gold Run (somewhere)	1914- Six men; mined with pick and shovel; strip of ground 150' long and 15' wide was mined in the deep, narrow valley 1917- James 'Windy Jim" McDonald; worked		1937-1938- Al Wright; ground-sluiced 1940- Al Wright; worked
Gold Run No. 3 Below		1915- Bastell, Lewis, & Munsell; mined 1917- Virgil & Lee Catching; mined		
Poorman Creek No. 1		1914- four men; stream flows in a narrow, steep-sided gulch cut with intrusive dike rocks; stream flow small; two dams constructed to store water; sluicing intermittently; 100' x10' to 15' sluiced; Insufficient gold recovered to justify mining 1915- Dan Ryan; sluiced		
Discovery Pup		1914- Morgan; worked		1940- Jack Carroll worked

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Glacier Creek	1913- J.G. Griffieht; staked bench 1913- Hagen, Jackson, Ives; leased Glacier No. 2	1914- Fred Wann; prospected		1940- Jack Carroll; worked
Shamrock Creek	1913- Stacey; staked	1915- Louis McCallum, McNutt, & George Tweedale; sluiced 1915- Mosier; prospected benches		
Sargent Creek		1915- Wagner and Hill; prospected 1916- Ned Hill & Jensey; operated a claim		
Chicken Creek No. 3	1913- George Hazelet & his two sons; staked a 'wildcat' claim on the outlying Chicken Creek; completed an exploratory 45 foot-long ditch			
Chicken Creek No. 4	1913- George Hazelet & his two sons; staked a 'wildcat' claim on the outlying Chicken Creek; completed an exploratory 45 foot-long ditch			
Alder Gulch		1914- shafts, two which were estimated to be 60 feet deep did not reach bedrock	1931- McCallum; worked west bench area	
Dry Gulch		June, 1914- Anthony McGuire; worked 1914- shaft at the mouth penetrates 92 feet deep without reaching bedrock;Lode Claims; both sides of upper Dry Gulch 1916- Oscar Erickson; prospected		
Chavolda (Wilson) Creek	1913- Hagen, Jackson & Ives; staked	1914- the high bluffs across Chavolda from the mouth of Glacier Creek were prospected. A tunnel was driven 65 feet into the gravel bluff yielded only fine colors		
Chathenda (Johnson) Creek	1913- staked from the town of Chisana to the head of the stream; and numerous exploratory pits and cuts were made 1913- Jack Leady; staked claims 1913- Grant Reed; staked No. 1 Above	1914- Lode claims were staked about halfway between the mouth of Dry Gulch and Bonanza Creek; two tunnels 10 and 15 feet long were made to test the site 1914-1915- Dahl; prospected 1915- Charlied Hawkins; prospected middle Chathenda		1940- Sam Gamblin & Earl Hirst; investigated a lode claim above Chathenda Creek

Historic Claim No.	STAMPEDE PERIOD (1913-1914)	BOOM PERIOD (1914-1919)	DECLINE PERIOD (1920-1932)	RECOVERY PERIOD (1933-1945)
Bonanza City	July 22, 1913; first recording office opened in a tent at the mouth of Bonanza Creek. This was the first community to emerge in the Gold Hill-Chisana landscape.	Fewer records exist for Bonanza City, but historic photos indicate a substantial number of tent structures in 1914. In addition there were reported a few cabins and several stores, a hotel and a restaurant. 1914- *Hamshaw's operation; sawmill and* warehouse at this location		
Woodrow	1913- George Hazelet, a Cordova business speculator, selected two 160 acre parcels as a location for a townsite. This community, named "Woodrow, became the site of the district's second recording office, managed by acting U.S. commissioner J. J. Finnegan	August-September, 1914- J. J. Finnegan; served as U. S. commissioner 1914- Sawmill located here		
Chisana	September 9, 1913- seventy-five miners; selected a new townsite, christened "Johnson City", and is the site of the present day Chisana. J. J. Finnegan was removed as U.S. commissioner and a new commissioner, George E. "Ned" Hill, was established October, 1913- the town boasted two streets and 200 cabins. Before the year was out, 400 cabins were reported in the city. October, 1913- Ned McGuire; claimed to have discovered gold in the middle of Chisana City	February, 1914- structures were more elaborate, larger, and some had glass windows. A two-story cabin was erected. Chisana City had become a major Alaskan community, described by one newspaper as the "largest log cabin town in the world". Winter, 1914- most of the two hundred who chose to winter in the district stayed in Chisana City Summer,1915- Chisana City contained at least eighteen businesses, including lodging houses, saloons, and stores Fall, 1915- with only about fifty choosing to winter in Chisana City 1918- Charles Hurdning; operated sawmill plant	1920- the population of Chisana had changed; of 148 residents, 105 were Alaska Natives 1924- the town of Chisana experienced decline as well. A Smithsonian expedition member in the summer of 1924 reported '452 cabins in which one man lives alone' 1929- In the community of Chisana, the one remaining merchant died, requiring the remaining residents to trade outside the mining district. An airstrip was built in Chisana during the year, however, few pilots risked landing there.	

APPENDIX III
WATER INFRASTRUCTURE FOR THE CHISANA-GOLD HILL LANDSCAPE

WATER INFRASTRUCTURE

Degree of Documentation

Reference or site #	Item	Present claim #	Historic claim #	Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
	Bonanza Mining Cluster						1913-1919
110	Two wood timbers;8"x8"-dam remnant	Bon #2	Bon-Disc	*	✦	✧	
111	Short ditch & wood	Bon #2	Bon-Disc	*	✦	✧	
120	Ditch leading to washed bank	None	Bon #3	*	✦	✧	1939-1940 Greene
122	Recent rock & plastic dam to 2" monitor on east side	None	Bon Fra. #3A	*	✦	✧	
	Fred Best Camp Cluster						1913-1919
124	Flume	Bon #5	Bon Fra. #3A	*	✦		Best
125	Recent dam			*		✧	
126	Dam remnant- west side	Bon #5	Bon #4	*		✧	
128	Crib dam remnant	Bon #5	Bon #4	*		✧	
	Mid Bonanza Ground sluicing Cluster						1913-1919
134	Dam remnant	Bon #5	Bon #5	*		✧	
139	Boomer dam	Bon #6	Bon #5	*	✦	✧	1914-1919 James & Farstredt
	Nelson Hydraulic Water Supply				✦	✧	1934-1935
NAB-059	Component #A- Castle Rock Dam remains	Lucky Discov	Bon #9	*	✦	✧	Nelson
NAB-059	Component #B- Flume in creekbed	Lucky Discov	Bon #9	*	✦	✧	
NAB-059	Feature #1- Dump box	Lucky Discov	Bon #9	*	✦	✧	
NAB-059	Feature #2- Dam gate sections	Lucky Discov	Bon #9	*	✦	✧	
NAB-059	Feature #3- Dam gate sections	Lucky Discov	Bon #9	*	✦	✧	
NAB-059	Feature #4-Sluicing activity area	1Be-lo Discov	Bon #8	*	✦	✧	
NAB-059	Component #C- Flume Foundation	1Be-lo Discov, None	Bon #8	*	✦	✧	
NAB-059	Feature #1- Spillway	1Be-lo Discov	Bon #8	*	✦	✧	
NAB-059	Feature #2- Regulator box	1Be-lo Discov	Bon #8	*	✦	✧	
NAB-059	Feature #3- Flume bridge remains	1Be-lo Discov	Bon #8	*	✦	✧	
NAB-059	Feature #4- Flume bridge remains	None	Bon #7A	*	✦	✧	
NAB-059	Component #D- Wood Frame flume	None	Bon #7	*	✦	✧	
NAB-059	Feature #1- Spillway	None	Bon #7	*	✦	✧	
NAB-059	Component #E & #F- Ditch & Flume Foundation	None	Bon #6	*	✦	✧	
NAB-059	Feature #1- Regulator box	None	Bon #6	*	✦	✧	
NAB-059	Feature #2- Regulator box	None	Bon #6	*	✦	✧	

WATER INFRASTRUCTURE

Reference or site #	Item	Present claim #	Historic claim #	Degree of Documentation: Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
145	Water wheel, 4" pipes, cast 16"to 12" reducer	None	Bon #6	*		✧	
	Steinberger Cluster					✧	1913-1919
NAB-086	Feat. #1-ditch	None	Canyon Creek	*		✧	
	Canyon Creek Water Diversion Cluster					✧	1919-1932
127	Short flume leading to workings of old channel	Bon #5	Bon #4	*		✧	
150	Flume remains	None		*		✧	
NAB-090	Dam	None		*		✧	
NAB-090	Ditch segment	None		*		✧	
NAB-090	Ditch segment	None		*		✧	
NAB-090	Ditch segment	None		*		✧	
NAB-090	Pond	None		*		✧	
NAB-090	Pond	None		*		✧	
NAB-090	Flume	None		*		✧	
NAB-090	Headbox	None		*		✧	
202	Boomer dam remnant	None	Bon #6	*	✦	✧	1914-1919 James & Farstredt
	Upper Bonanza Mining Cluster	None					
203	*Dam remnant, sluicing area*	None	Bon #7	*		✧	
	Upper Bonanza Habitation Cluster				✦	✧	1914-1919
NAB-050	#9 Dam remnant	None	Bon #7	*	✦	✧	Historic Photo
NAB-050	#10 Flume ruins	None	Bon #7	*	✦	✧	
206	Two dam remnants	None	Bon #7B	*		✧	
	Upper Bonanza Water Supply Cluster				✦	✧	1915-1916
208	Penstock pipe scatter	1Be-lo	Bon #8	*	✦	✧	
NAB-064	Component #A- Ditch line	Shmrck	Bon #10	*	✦	✧	
NAB-064	Feature #1- Splash dam ruins	Shmrck	Bon #10	*	✦	✧	
NAB-064	Component #B- Flume line	Shmrck	Bon #9	*	✦	✧	
NAB-064	Feature # 1- Flume bridge remains	Shmrck	Bon #10	*	✦	✧	
NAB-064	Feature #2- Coarse Money Dam	None	Coarse Mon Dis	*	✦	✧	
NAB-064	Component #C- Flume foundation covered by	1Be-lo	Bon #8	*	✦	✧	
NAB-064	Component #D- Flume and ditch line	Lit El Bench	Bon #7	*	✦	✧	
NAB-064	Feature #1- Flume box sections	None		*	✦	✧	
222	Dam remnants, flume	None		*	✦	✧	
238	Dam remnant	None		*	✦		
239	Ditch	None		*	✦	✧	
216	Dam remnant (2)	Shmrck	Bon #10	*		✧	1914-1919
	Up Bon Shoveling-in/Camp Cluster					✧	1930's
241	Ditch			*		✧	

WATER INFRASTRUCTURE

Degree of Documentation

Reference or site #	Item	Present claim #	Historic claim #	Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
	Upper Bonanza Hydraulic Cluster					✧	1930's
221	Pipe sections, 12" riveted	None		*		✧	
223	Low ditch	Shmrck		*		✧	
	Upper Bonanza Mining Camp Cluster				✦	✧	1930's
246	Ditch	None		*	✦	✧	McGettigan
228	Dam remnant	Tony M	Bon #11	*	✦	✧	1930's McGettigan
231	Dam site	None		*		✧	
	Coarse Money Habitation Cluster				✦	✧	1913
NAB-076	Stone dam, dam gate			*			Haggren
	Little Eldorado Bench Mining Cluster			*		✧	
301	Flume, sluice area	Lit El#1	Lit El#1	*		✧	
304	Ditch;diverting upstream Little El to lower stream	Ben#1,	Lit El#1	*		✧	
309	Possible ditch gate (Still there????)	Lil El#2	Lil El#2	*		✧	
305	Ditch;Little El	Lit El#1	Lit El#1	*		✧	
306	Ditch;draining hillside	Ben#1, Ben#2, LitEl#1	Lit El#1, Lit El Ben	*		✧	
307	Flume, 12" & plow remnant	Ben#2	Lit El Ben	*		✧	
311	1/2" pipe	Ben#2	Lil El#2	*		✧	
	Snow Gulch Water Supply Cluster			*		✧	
315	Flume section	Ben#2	Snow #1	*		✧	
316	Timber; 6x6, possible dam site	Ben#2	Snow #1	*		✧	
325	Ditch;diverting Snow Gulch to Little El	Ben#2,Lit El#2	Lil El#2, Snow #1	*		✧	
	Snow Gulch Mining Cluster						
317	Flume section; 3'x12'x10'	Ben#2	Snow #1	*		✧	
318	Flume;12"x12"/sluice section	Snow	Snow #1	*		✧	
	Snow gulch Exploration Cluster						
NAB-052	Ditch	Snow	Snow #1	*		✧	
	Upper Snow Gulch Mining Cluster						
323	Dam remnant with flume	Snow	Snow #2	*		✧	
350	Ditch						
	Skookum Creek Mining Cluster						
333	Ditch; draining hillside	Sk'um	Sk'um#1	*		✧	

WATER INFRASTRUCTURE

Degree of Documentation

Reference or site #	Item	Present claim #	Historic claim #	Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
	Skookum Creek Mining Cluster						
334	Boomer dams; two ruined	Sk'um	Sk'um	*		✧	
336	Natural ditch reversed or enhanced	Sk'um	Sk'um	*		✧	
337	Ditch; Little El-Skookum	None	None	*		✧	
338	Ditch & flume remnants from Little Eldorado	Sk'um	Sk'um	*	✦	✧	1914 Range & Stone
339	Ditch from Chicken Creek	None		*		✧	
342	Drain or Trail??						
343	Dam						
345	Ditch						
	Glacier Creek Mining Camp						1930's
501	Dam piece	Jay 1		*		✧	
502	Dam piece	Jay 2		*		✧	
506	Dam remnant	Jay 2		*		✧	
NAB-070	Feature #2- Dam remains;boomer dam-largest in	Jay 3		*		✧	
401	Hand stacks & Dam remnant	Jay 3		*		✧	
	Historic #2 Below Mining Camp Cluster					✧	1913-1919
402	Dam remnant	Jay 3	GldRn #2Below	*		✧	
403	Ditch, ground sluicing	Jay 3	GldRn #2Below	*	✦	✧	1913-1919 Morgan & Wiley
405	Dam remnants, sluice boxes, piled stone	GldRn Below	GldRn #1Below	*		✧	
406	Dam remnants	GldRn Below	GldRn #1Below	*		✧	
408	Hand stacked rock, dam remnants	GldRn Below	GldRn #1Below	*		✧	
410	Dam remnants	GldRn Below	GldRn #1Below	*		✧	
	Dipple's Mining Camp Cluster					✧	1940's
NAB-068	Feature #8- Ditch from Discovery Pup to Gold Run	GldRn Below	GldRn #1Below	*		✧	
411	Rock wing dam	GldRn Below	GldRn #1Below	*		✧	
412	Boomer dam	None	GldRn #1Above	*	✦	✧	1930's McKinney
413	Chicken wire trash dam	None	GldRn #1Above	*		✧	

WATER INFRASTRUCTURE

Reference or site #	Item	Present claim #	Historic claim #	Degree of Documentation: Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
	Carroll Mining Camp Cluster					✧	1920's
NAB-066	Feature #8- Boomer dam	None	GldRn #2Above	*		✧	
417	Dam remnants	None	GldRn #2Above	*		✧	
421	Ditch from Poorman Creek to Gold Run Creek	None	GldRn #2Abov, Poorman	*		✧	
	Poorman Creek Mining Cluster						1940's
NAB-073	3 dams	None	Poorman	*		✧	
NAB-073	2 ditch remnants	None	Poorman	*		✧	
NAB-073	2 flume scatters	None	Poorman	*		✧	
	Upper Glacier Creek Mining Cluster						1920's
NAB-074	Diversion dam			*		✧	
NAB-074	Dam remnants			*		✧	
NAB-074	Flume			*		✧	
	Upper Gold Run Water Supply Cluster						
422	Ditch draining hillside swamp to Gold Run Creek			*		✧	
429	Ditch			*		✧	
430	Ditch	None		*		✧	
423	Ditch from Glacier Creek to Gold Run Creek	None		*		✧	
424	Ditch from Poorman Creek to Upper Gold Run Creek	None	Poorman	*		✧	
426	Flume remnants	None		*		✧	
	Lower Big El Habitation Cluster						1930's
NAB-044	Ditch – below	Ole 4	Big El#4 below	*		✧	
NAB-044	Possible rock dam	Ole 4	Big El#4 below	*		✧	
NAB-044	Ditch	Ole 4	Big El#4 below	*		✧	
603	Old tailings in streambed and ditch			*		✧	
605	Crude dam	Ole 2	Big El#2 below	*		✧	

WATER INFRASTRUCTURE

Reference or site #	Item	Present claim #	Historic claim #	Degree of Documentation: Site Evidence	Specific Historic reference	General Historic reference	Estimated Date
	Stevens/Peterson Mining Cluster					✧	1920-1940
611	Wing dam posts; diversion dam remants	Ole 1	Big El#1 below	*		✧	
615	Flume support remnants	Ole 1	Big El#1 below	*		✧	
627	Ditch to facilitate ground sluicing on the banks of Big Eldorado Creek	Tony 1, Rocky 1	Big El Disc, Big El#1 Above	*		✧	
633	Rock diversion dam, ditch	None	Big El#1 Above	*		✧	

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REFERENCES

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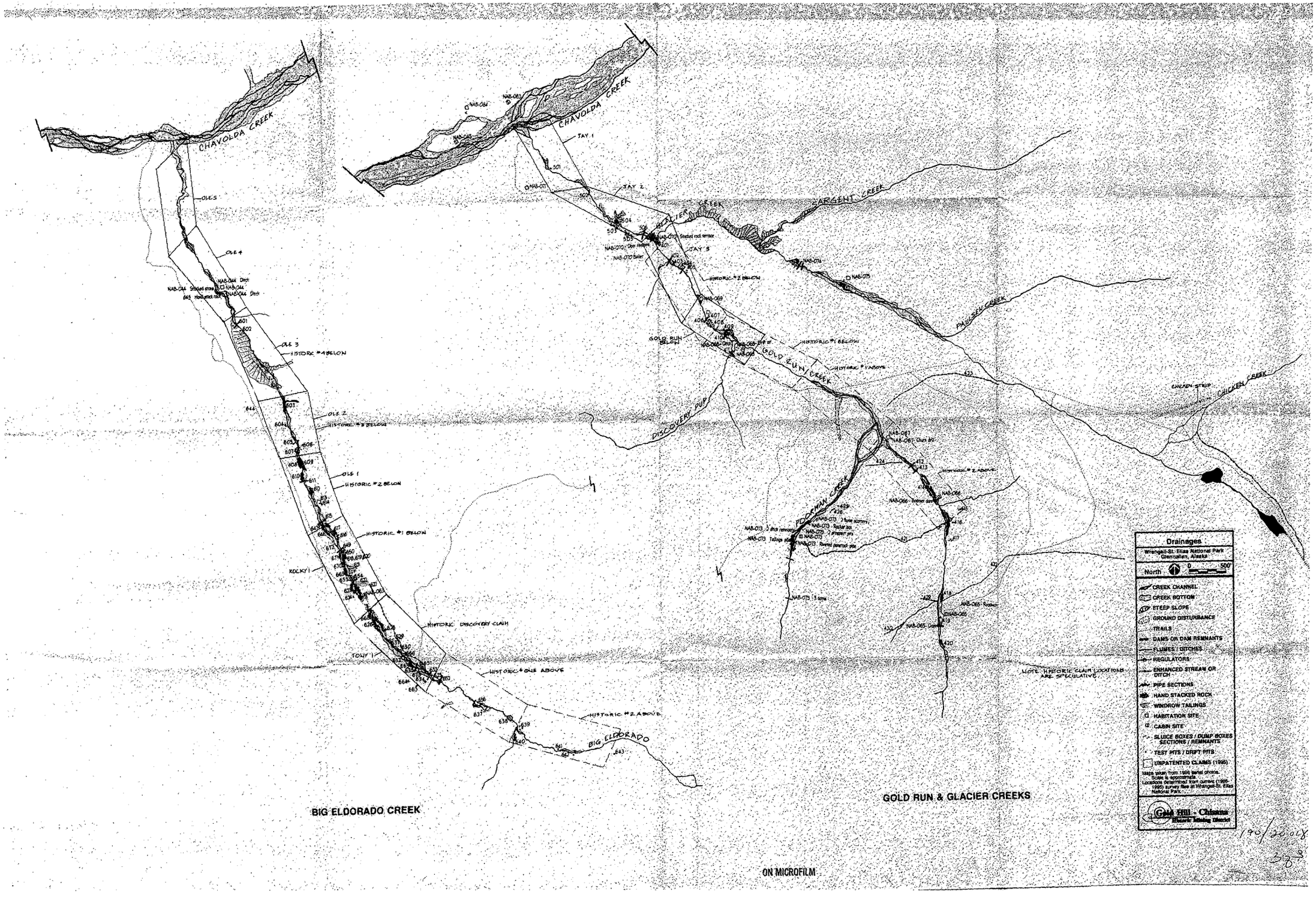

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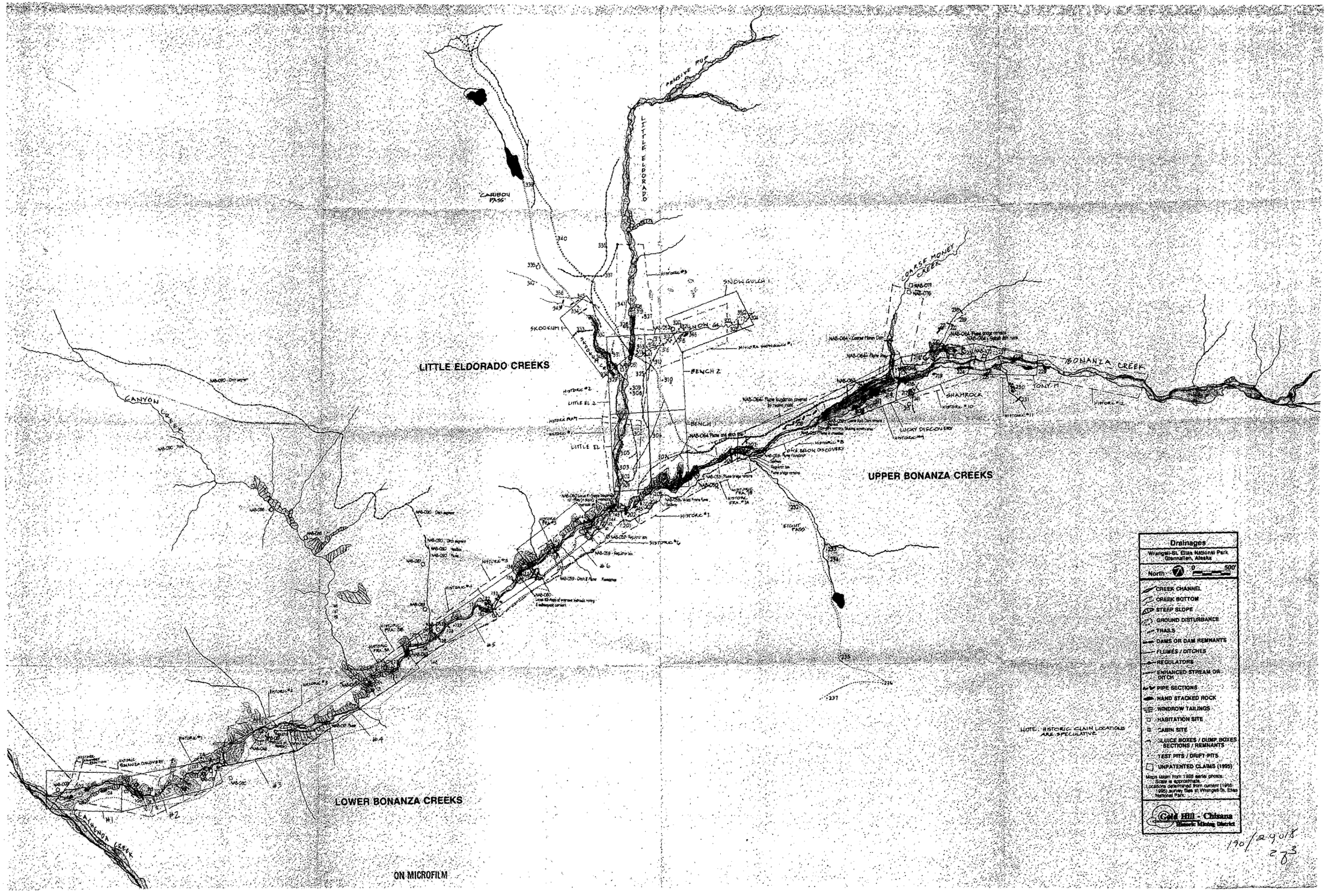

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