PEBBLE PROJECT
ENVIRONMENTAL BASELINE DOCUMENT
2004 through 2008

CHAPTER 22.
CULTURAL RESOURCES
Bristol Bay Drainages

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ACRONYMS AND ABBREVIATIONS

ACC	Alaska Commercial Company
AHRS	Alaska Heritage Resources Survey
ASTt	Arctic Small Tool tradition
BP	before present
FAA	Federal Aviation Administration
ft	foot (feet)
GPS	global positioning system
in.	inch(es)
INL	Iliamna Natives, Limited
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHA	Office of History and Archaeology (Alaska Department of Natural Resources)
Section 106	Section 106 of the National Historic Preservation Act
SHPO	State Historic Preservation Officer
USGS	U.S. Geological Survey

22. CULTURAL RESOURCES

22.1 Introduction

This chapter summarizes the existing information on the prehistory, ethnography, and history relevant to cultural resources on lands in the Bristol Bay drainages in the mine study area related to the Pebble Deposit. The chapter also presents the findings of cultural resources surveys conducted in 2004 through 2008 on portions of these lands. These lands include state lands in the vicinity of the Pebble deposit and exploratory drilling locations that were surveyed under Alaska Field Archaeology Permit Number 2004-8.

Cultural resources may include historic buildings, structures, and landscapes; prehistoric and historic surface and subsurface sites; and traditional- and religious-use areas. Cultural resource field surveys, subsurface testing, and monitoring of ground-disturbing activities primarily in the mine claim boundary area were conducted in 2004, 2005, 2006, 2007, and 2008 (SRB&A, 2005, 2006, 2007, 2008, and 2009) and are discussed in this chapter. This chapter reports the results of the first five years (2004 through 2008) of cultural resource research for the Pebble Project. No surveys have been conducted in the transportation-corridor study area, except the examinations of the land along the west side of the Newhalen River between Nondalton and Iliamna and of a drilling-core storage area in Iliamna, both in October 2006.

22.2 Study Objectives

The purpose of the cultural resources study is to characterize the existing cultural resources of the area. The objectives of the 2004 through 2008 cultural resources field surveys in the Bristol Bay drainages were to locate, identify, and describe documented and previously undocumented archaeological, historic, and ethnographic cultural resources in the vicinity of the Pebble Deposit and at exploratory drilling locations for the Pebble Project.

22.3 Study Areas

The cultural resources study areas in the Bristol Bay drainages are the mine study area and the transportation-corridor study area (Figure 22-1). Research and mapping for the locations of place names and cultural resources cover the full extent of the study areas. The field surveys were localized in the claim boundary area (Figure 22-1). Researchers based the locations of the 2004 through 2008 field surveys on possible project footprints, combined with a probability survey of areas with high and moderate probability of containing cultural resources. Surveys in the transportation-corridor study area have been limited to the west side of the Newhalen River between Nondalton and Iliamna and a drilling-core storage area in Iliamna.

Figure 22-1 is an overview of the Bristol Bay region, including the Pebble Project deposit location and study areas. Figures 22-2 through 22-15 show the extent of pedestrian surveys conducted in 2004 through 2008 in the mine and transportation-corridor study areas.

22.4 Previous Studies

Cultural resource investigations have been conducted previously in the Bristol Bay drainages But few archaeological studies have been conducted in the immediate vicinity of the mine or transportation-corridor study areas, and no surveys have been conducted in the vicinity of the Pebble Deposit. Researchers found lithic artifacts on the ground surface in the area of the Newhalen River valley during surveys conducted in association with a proposed hydroelectric project that would have dammed the outlet of Tazimina Lake (Arndt, 1982; M. Yarborough, 1986a, 1994). A survey was conducted in the area of the Iliamna Airport in 1984 prior to an expansion project there; no cultural resources were identified during that survey (L.F. Yarborough, 1984). A survey in Nondalton (Depew, 1999) and another near the Iliamna Airport (CBA, 2001) did not identify cultural resources. Archaeological survey work north and west of the mine study area discovered sites with the greatest regional time depth in the vicinity (Ackerman, 1964, 1996). Various cultural resource and historical investigations have been conducted in the Lake Clark vicinity and at the archaeological site of Kijik near Lake Clark, as well as in the Bristol Bay area (Branson, 1997, 1998, 1999, 2003; Hoagland, 1982; Lynch, 1982; Smith and Shields, 1977; Townsend, 1968a, 1968b, 1970d; Unrau, 1994; Vanstone, 1966; Vanstone and Townsend, 1970; Worthington, 1996).

Near Pedro Bay researchers discovered numerous sites during reconnaissance work and excavated sites that included prehistoric deposits (Townsend and Townsend, 1961, 1964; Townsend, 1967, 1970a, 1970b, 1970c, 1973). Reports based on the Townsends' research mentioned a small village site with numerous Dena'ina-style house pits near the confluence of Bear Creek and the Newhalen River, as well as prehistoric and historic village sites near the mouth of the Newhalen River and along the portage trail around Petroff Falls on the Newhalen River (Townsend, 1968a, 1968b, 1969). More recent archaeological surveys have discovered more sites and features in the Pedro Bay area (M. Yarborough, 1985a, 1985b, 1986a, 1986b, 1993). Other surveys in Pedro Bay did not find cultural resources (AEEI, 2003; RKAI, 2002). Multiple surveys have been conducted in the vicinity of the Pebble Project study areas since the mid-1980s, including examinations of cultural resources for Federal Land Policy Management Act permits and other undertakings (BLM, 1985, 1986, 1987, 1988a, 1988b, 2002, 2003). A survey of the Williamsport to Pile Bay Road was conducted in 2001; no cultural resources were identified during this survey (DePew and Thompson, 2001).

Key studies in understanding the Dena'ina in history and prehistory in the Bristol Bay drainages and in the Pebble Project study areas included the ethnohistoric and archaeological work of J. Townsend, S. Townsend, VanStone, and Lynch at sites including Kijik and Pedro Bay. These studies outlined the available direct record of sites in the greater Iliamna/Lake Clark area, including VanStone's exhaustive work on the Nushagak River system. Less intensive cultural research provides additional suites of data that fill in the data gaps between intensively studied sites, as demonstrated by Arndt, M. Yarborough, L. Yarborough, and others. Historical sources are particularly rich for direct observations from the perspectives of Russian and European explorers and visitors, including Korsakovskiy and Vasilev (VanStone, 1988), Schanz (Branson, 1998), Shishkin (Znamenski, 2003), von Wrangel (1980), Zagoskin (1967), Martin and Katz (1910, 1912), McNab and Vreeland (Branson, 1997), Jack and Myrtle Bailey (Branson 2003), Hrdlička (1943), Breece (Jacobs, 1997), and others passing through the area. The researched works of historians provide a great deal of general and some specific details about life during the historic period for Native and EuroAmerican peoples in the area in general, such as the work by Unrau (1994). More specialized historical works include studies of prominent people such as Severson

(Branson, 2003), photographic documents of people and life (Branson, 1999), Fortuine's (1992) narrative of the history of disease in Alaska, and an illustrated narrative of the life of postmaster and photographer John Thwaites (Goforth, 2003), who documented life in the region.

Various ethnographic and linguistic studies have been conducted and oral stories have been collected within or near the study areas. A number of these studies informed the research conducted during the 2004 through 2008 field seasons (Behnke, 1978, 1981, 1982; BBNA, n.d.; Ellanna, 1986; Ellanna and Balluta, 1992; Fall, 1981a, 1981b, 1987; J. Kari, 1975a, 1975b, 1977, 1980, 1985, 2004; P.R. Kari, 1983, 1985, 2003; Kari and Fall, 2003; Kari and Kari, 1982; Morris, 1986; Osgood, 1966; Russell, 2003; Townsend, 1963, 1965, 1970b; Vaudrin, 1981). In addition to the previous place-name studies, an ongoing collection of place names for the Lake Clark vicinity is being conducted by James Kari in association with the Alaska Department of Fish and Game and the National Park Service. Certain ethnographic works (Osgood, 1966; Ellanna, 1986; Ellanna and Balluta, 1992) contributed models of historic normative behavior, subsistence food-storage practices, land-use traditions, place names, and other types of data with a bearing on the interpretation of the historic and prehistoric record. Fienup-Riordan (1991), VanStone (1967), and Oswalt (1963a, 1963b) provide information about prehistoric and historic Yup'ik practices including land use, material culture, and normative practices.

22.5 Scope of Work

The scope of the cultural resources study in the Bristol Bay drainages was to locate, identify, and describe documented and previously undocumented archaeological, historic, and ethnographic cultural resources in the vicinity of the Pebble Deposit and the exploratory drilling sites for the Pebble Project. This work was conducted by Stephen R. Braund and Associates (SRB&A).

22.6 Methods

In order to characterize the cultural resources in the mine and transportation-corridor study areas in the Bristol Bay drainages, researchers reviewed the Alaska Heritage Resources Survey (AHRS) database maintained by the Alaska Department of Natural Resources, Office of History and Archaeology (OHA, 2009), as well as relevant geological, archaeological, ethnographic, and historical literature, and archival data; conducted cultural resource interviews and consultations; and conducted field surveys. The review of existing data regarding cultural resources in the study areas and the effort to identify previously undocumented cultural resources through interviews, consultations, and field surveys helped to inform researchers as to where and what manner of cultural resources were likely to be found in the study areas. The cultural resources research and field work were conducted during 2004, 2005, 2006, 2007, and 2008.

The research and field work were conducted using the approach described below and in Chapter 14 of the Pebble Project study plan (a copy of which is provided in Appendix E of this environmental baseline document):

- AHRS files were examined for known cultural resources in the vicinity of the study areas.
- A review of the geological, archaeological, ethnographic, and historical literature was conducted.

- Consultations with representatives of communities in the vicinity of the study area were conducted and knowledgeable residents of the communities closest to the possible Pebble Project were interviewed with regard to cultural resources.
- A methodology was developed and implemented for identifying and surveying areas with a high-probability of containing cultural resources and surveyed locations where geological investigations and other ground disturbing activities were planned.
- In 2004, the field crew made four trips to the claim boundary area. The trips included pedestrian surveys and subsurface testing of several areas within the claim boundary (Figure 22-2). The field crew also monitored the excavation of 18 geotechnical assay pits.
- In 2005, the field crew made three trips to the mine claim boundary. The field crew conducted a site inspection of the drilling program in April 2005 and made field trips in July and August to conduct field surveys in the claim boundary (Figure 22-3).
- In 2006, the field crew made three trips to the mine claim boundary. In June and August 2006, the crew surveyed an area near Upper Talarik Creek; surveyed the South Fork Koktuli River, both recent and ancient channels; and examined ridgelines and overlooks on Kaskanak, Koktuli, and Groundhog mountains (Figures 22-4, 22-5, and 22-6). In October 2006, the field crew examined the newly developed drilling-core storage area in Iliamna (Figure 22-7) and the western shore of the Newhalen River (Figure 22-8).
- In 2007, the field crew conducted two surveys in the mine claim boundary. In June 2007, the field crew surveyed sites north of Koktuli Mountain along Upper Talarik Creek and on a side ridge of Kaskanak Mountain (Figure 22-9). In August 2007, the crew surveyed areas in the vicinities of Kaskanak and Groundhog mountains (Figure 22-10).
- In 2008, the field crew completed three surveys in the mine claim boundary. In June 2008, the field crew surveyed the area northeast of Kaskanak Mountain (Figure 22-11) in a gap between previously surveyed areas. In July 2008, surveys were conducted in a valley in the southwest area of the claim boundary (Figure 22-12), in a valley system on the west side of Koktuli Mountain, and along a route connecting several proposed piezometer or pumping well sites located east of Koktuli Mountain and Upper Talarik Creek (Figure 22-13). In August 2008, the field crew returned and conducted surveys around Big Wiggly Lake, north of the Cone, and along the northern slopes of Kaskanak Mountain (Figure 22-14).

Documents and databases there were reviewed included the AHRS files, archaeological literature for southwest and southcentral Alaska, documents and maps pertaining to surface geology of a relatively broad region centered on Iliamna, and ethnographic and historical literature and accounts for the southwest and southcentral areas of Alaska. The methodology for the literature and database review is described in Section 22.6.1.

In 2004, consultation was initiated with the State Historic Preservation Officer (SHPO), the National Park Service, tribes residing in the area, and other interested parties. (A list of tribes and other interested parties consulted is included in Chapter 22, Section 22.6.2.7.) Tribes and other interested parties were sent consultation letters on August 31, 2004. As of 2008, no response regarding those consultation letters has been received. Further consultation in the form of cultural resources interviews in area communities began during the winter of 2007 as an adjunct to the documentary and field components of the survey.

Cultural resources interviews occurred in the communities of Kokhanok, Newhalen, Nondalton, and Port Alsworth. Efforts were made to conduct interviews in Iliamna, Pedro Bay, and Igiugig, but the study team was unsuccessful in scheduling interviews at times when appropriate elders would be present in those three communities. The methodology for the cultural resources interview is described in Section 22.6.2.7, and information about cultural resources obtained during these interviews is described in Section 22.7.7. Information derived from subsistence interviews conducted in area communities by Stephen R. Braund & Associates (SRB&A) in 2005, 2006, and 2007 informed the cultural resource field surveys.

As noted above, in addition to a literature review and information gathering about cultural resources through consultation and interviews, field surveys were conducted in the spring, summer, and fall of 2004, 2005, 2006, 2007, and 2008. These surveys were conducted primarily in areas determined to have a moderate or high probability of containing cultural resources and in locations where geological investigations and other ground disturbing activities were planned. The surveys and the cultural resources identified during surveys were documented through field notes, photographs (see photographs section at end of chapter) and global positioning system (GPS) track points and waypoints. The methodology for the field surveys is discussed in Section 22.6.2.

22.6.1 Literature Review

The literature review included a review and analysis of the geology, glaciation, and prehistoric environment to establish a possible maximum time depth of human occupation in the study areas. The literature review also included ethnographic and historical literature in order to develop an understanding of historic land-use patterns. These patterns suggest a possible range of artifacts and sites that might occur in the study areas. Further review of literature included sources on Russian America, Russian Orthodox Church clerics' encounters with the Dena'ina, reindeer herding, and historic mining in the greater Iliamna Lake region.

Ethnographic and linguistic studies, such as those listed in Section 22.4, provide important windows into the historic and prehistoric record. Linguistic studies include folk-tale analyses; place-names studies; and structure, grammar, and vocabulary research. Such studies can highlight cultural change and continuity over time as recorded in the language of a living people. Ethnographic studies provide systematically collected observations about the customs, lifeways, place names, and material culture of a people at a particular time. Each area of inquiry informs archaeological and historical research, including consultations with local informants who are the product of cultural change. Analyses of oral-history interviews, where available, provide windows into how people used to live on the land. In particular, the University of Alaska Fairbanks Oral History Program's Project Jukebox for Katmai and Lake Clark national parks provided relevant information about the history of humans acting on the land, including travel, industry, old villages and camps, subsistence, trails, and the like (UAF Oral History Program, 2008a, 2008b).

22.6.1.1 Alaska Heritage Resources Survey Sites

The literature review included a review of the AHRS, which is an inventory of all reported historic and prehistoric sites within Alaska and is maintained by the Alaska Department of Natural Resources, Office of History and Archaeology (OHA). This inventory of cultural resources includes ". . . objects, structures, buildings, sites, districts, and travel ways, with a general provision that they are over 50 years old" (OHA,

2009). The AHRS is primarily a map-based system. OHA assigns an individual designation consisting of three elements to each site: "49" to indicate the state of Alaska (the 49th state), a unique trigraph for the U.S. Geological Survey (USGS) 1:250,000-scale (equivalent to one inch to the mile) topographic quadrangle map on which it is located, and a unique sequential number within that quadrangle. For example, 49-ILI-00018 is the AHRS designation for the eighteenth site recorded in the Iliamna quadrangle. The "49" prefix is generally omitted in this document, because it is understood that all the sites under discussion in this report are in Alaska.

Each individual site record contains information such as the site name, a description of the physical remains, data on the site's location, a list of bibliographic citations, site significance, affiliated cultures and dates, preservation status, site condition, property owner, and other associated site numbers. The site-location information contained in the AHRS inventory is not available to the general public and thus all AHRS sites depicted on maps in this environmental baseline document have been generalized to ensure confidentiality. OHA maintains a list of authorized users of AHRS information, including government representatives on official business, scientific researchers, those conducting cultural resource surveys intended to protect such sites, or individuals determined by OHA to have a legitimate need for access. The AHRS is intended as a tool to assist in protecting cultural resource sites. Using the AHRS as a planning tool helps avoid project delays and prevent destruction of the sites. Listing on the AHRS does not, in and of itself, provide protection for cultural resources, as would a listing on the NRHP; however, the AHRS allows agencies to make knowledgeable decisions regarding the future of the listed sites.

22.6.1.2 Place Names

Place names can provide historic information about natural and social environments as well as about human populations and their histories. In a study of cultural resources, it is important to include place names not only to properly analyze more mundane aspects of geography, as well as land- and resource-use data, but also to provide insights into a culture's worldview and its perceptions of features of the environments it inhabits. Place names can be a key component for determining specific cultural resources in an area, as well as for establishing territorial range and means of travel throughout a traditional territory (J. Kari, 2006).

Researchers have been collecting data on place names for the Dena'ina area for decades (BBNA, n.d.; Ellanna and Balluta, 1992; J. Kari 1975a, 1988, 1996a, 1996b, 1996c, 2000, 2006; P. Kari, 1983, 2003; Kari and Fall, 2003; Kari and Kari, 1982), including data for Iliamna Lake (J. Kari 1999). Dena'ina locational place-name data for the Bristol Bay and Cook Inlet drainages are available through a number of these sources. Kari and Kari (1982) published *Dena'ina Ełnena*, a compendium of place-names information with maps showing general locations. Ellanna and Balluta (1992), in their ethnographic account of Nondalton, included an appendix of Dena'ina place names used in the account and their locations. Kari and Fall's (2003) *Shem Pete's Alaska* includes geographic place-name information about areas near the Iliamna region. Other publications with mappable place-name data include Gross (1991), Ellanna (1986), and Wright and Chythlook (1985).

As part of the Pebble Project studies, researchers reviewed these sources and compiled a database and corresponding map of known place names for the Bristol Bay and Cook Inlet areas. Locational information for some of the place names noted in the above sources was imprecise and, therefore, those place names are not included in the place-name maps provided in this chapter; however, those place names are listed in Appendix 22A.

22.6.2 Field Survey Methods

During the 2004 through 2008 field seasons, survey efforts for cultural resources were focused in the claim boundary area in the vicinity of the possible Pebble Project in locations where geological investigations and other ground disturbing activities were planned. Because of the extent of the area to be surveyed, survey efforts also were focused on areas deemed to have a high or moderate probability for the discovery of previously undocumented cultural resources (Section 22.6.2.1.)

Field crews walked high- and moderate-probability areas looking for surface indications of cultural resources and conducted enhanced testing with closely spaced surface walkovers and excavations of test units near cultural resources discovered during the surveys. Areas within the line of sight of field crews but considered to have low probability for cultural resources were not transected and were considered to be surveyed for the purposes of future ground-disturbing activity. For example, the swampy wetlands that feed into Frying Pan Lake were considered to have low probability for cultural resources and were considered to have been surveyed following a pedestrian survey of the adjacent areas. Likewise, the highly visible steep talus slopes overlooking the Frying Pan Lake valley were considered to have low probability for cultural resources and were not transected after survey tracks were completed in adjacent higher probability areas. The areas transected by pedestrian surveys are depicted on Figure 22-15.

Field crews also conducted subsurface testing in high-probability areas with soil accumulation or near surface finds of cultural material. Test units were excavated by hand to approximately 2 feet square and, in most cases, to more than 1 foot deep, with the goal being 2 feet or deeper. In practice, this effort was restricted by the surface geology, which consisted of decomposed angular blocks of local bedrock, rounded cobbles to boulders of glacially deposited granites, frozen soils, and high surface water. In survey areas where soil had accumulated, the field crews excavated deeper test units. Removed soil and the surface vegetation mat, where present, were chopped finely with trowels and examined for artifacts, lithic debris, charcoal, organic deposits, and other indications of human use or occupation.

Crew members recorded GPS waypoints at the locations of landmarks, features, soil exposures, and test units and used GPS track points to record positions during a survey. In 2004, track points and waypoints were recorded periodically on one GPS unit at the field leader's discretion. The survey tracks shown on Figure 22-2 are the result of connecting the periodic waypoints in ArcGIS. Larger memory cards, the use of laptops in the field, and the purchase of additional GPS units beginning in 2005 allowed automatic tracking of individual track points by survey personnel and daily archiving of the track-point and waypoint data. In 2006, 2007, and 2008, each crew member received a GPS unit to record their survey tracks. The survey routes were designed to follow certain landforms rather than a rectangular grid (Figure 22-15).

22.6.2.1 Probability Survey Methodology

The probability survey is an appropriate method to survey the claim boundary area because of the scale of the possible project, the geology and geomorphology of the area, the lack of known cultural resources in the area, and information in the historical and ethnographic literature. To predict the probable locations of cultural resources, investigators frequently combine data from previous geological, geomorphological, archaeological, historical, and ethnohistorical research for similar areas. Investigators develop models to identify areas that would have greater or lesser potential for cultural resources. These models are based

partly on an examination of the surface geology and geomorphology of an area. Investigators take into account both the human behavior that forms sites and the relative probability that cultural resource deposits, if present, would persist in an identifiable form in various landform settings. Some landforms may have been used by humans in the past but may not preserve evidence of that use because of factors such as erosion, slumping, deflation, freeze/thaw cycling, acidic or basic soils, soil movement, flooding, cyclical wildfires, plant growth, and inadequate soil formation or deposition.

Cultural resources investigators also use ethnographic and historical data to prepare maps of past human land use. The distributions of land use exist in both space (geographic) and time (e.g., yearly or seasonally). Cultural resources investigators use Native place-name information, interviews with knowledgeable local residents, and records from early EuroAmerican exploration to identify cultural features on the landscape. Records of subsistence harvests or zoning for industrial, recreational, or habitat use also may reveal information of use to understanding historical land use. Cultural resources investigators document historical features such as abandoned and occupied communities or villages, subsistence camps, trading posts, mining sites, roads, and trails. The resulting maps and documentation show patterns of historical and contemporary land use by both Native and non-Native populations. Additional information comes from the AHRS, which lists reported historic, prehistoric, and paleontological sites throughout Alaska, including on state-owned submerged lands (OHA, 2009).

Because much of the Pebble Project survey areas consists of unvegetated rock or thinly covered glacial till and decomposed bedrock, researchers believe that previously undocumented cultural resources are likely to include surface features such as rock alignments, lithic scatters, natural rock features, surface depressions and mounds, and man-made arrangements of local, natural materials. Previously documented examples of surface features include a “votive” rock, where local Dena’ina historically left offerings on the portage between Iliamna Bay and Old Iliamna (Hrdlička, 1943), and a rock feature with a cave along the Telaquana Trail where local Dena’ina left cartridges and other offerings (Ellanna and Balluta, 1992). Ellanna and Balluta (1992) also reported the use of caribou fences by the Dena’ina in the Lake Clark-Telaquana Lake corridor before the advent of firearms. Yup’ik hunters and later reindeer herders may have used such techniques for directing caribou towards snares or hunters using natural topographic elements and “pretend people” made of stacked rock to redirect migrating caribou for selective harvest.

Landscape components with high probabilities of having cultural resources sites include those useful in hunting and fishing, as camps, as residential areas, and in transportation. Streams provide important transportation routes by boat, dog sled, and snowshoes, and the streamside environment provides good campsites, with water, wood, and fishing. Lakes also may provide good campsites, with longer-term camps usually situated at the outlet stream (Ellanna and Balluta, 1992). Ridgelines and mountaintops are summertime refuges for caribou seeking relief from biting insects, as well as year-round overlooks for large-game hunters, who may leave behind traces of their activities (Ellanna and Balluta, 1992).

Based on an assessment of geology and geomorphology, available literature, and a review of the AHRS, it was determined that high probability areas—those areas most likely to have archaeological and historic sites—would be in the following types of locations:

- Dry areas in the uplands and dry landforms elevated above surrounding wetlands.
- Areas in the vicinity of fresh water.
- Near areas that could concentrate game animals.

- Prominent ridges and landforms with broad overlooks for spotting game animals.
- Areas with moderate to flat slopes, benches, or the crests of banks and bluffs.
- Along the shores of rivers and lakes.

Well-drained lowlands, valley bottoms, and the lower slopes of hills do not generally host sufficient activity in specific locations for the creation of stratified sites, but these areas may have cultural materials in the form of lithic scatters, brush camps, corrals or drive lines, or tent rings. Drive lines, corrals, tent rings, and stone caches would likely be widely visible on the tundra and somewhat less visible in vegetated areas. Use of these areas was likely scattered and widespread, and specific areas were unlikely to be used repeatedly, making stratified accumulations of cultural material unlikely. These areas were considered to have moderate probability for discovering previously undocumented cultural resources.

Wetlands (i.e., those areas marked as wetlands on USGS quadrangle maps), seasonally wet tundra, and steep slopes are the least likely areas to have discoverable, well-preserved cultural resources. Wetlands and seasonally wet tundra are often subject to flooding, cryoturbation, and other soil disturbance resulting from freeze/thaw cycles. Soil conditions in wetlands and seasonally wet tundra preclude preservation of bone because they are acidic from decaying vegetation; however, the tannic acid may preserve soft tissues and wood in some cases. Water saturation of and movement through the soils, as well as suspended particulates, limits the utility of test units in these types of areas. Winter use may have occurred in water-saturated sites, but it is unlikely that evidence of that use would be recovered archaeologically. These areas are considered to have a low probability for discovering previously undocumented cultural resources.

Surveys in 2004 through 2008 included the following types of locations:

- Modern and visible relict stream channels on the South Fork Koktuli River and Upper Talarik Creek.
- Lake shores, including those of Frying Pan Lake and numerous unnamed lakes.
- Ridgelines and benches, with good views, on Kaskanak, Koktuli, and Groundhog mountains.
- Passes, draws, and areas adjacent to steep mountainsides, rock formations, and other geologic or geographic features that could constrain the movements of caribou and other large mammals.

Areas with soil accumulation were subjected to subsurface testing that, in a few cases, revealed subsurface artifacts or stratified soil deposits. Areas where soil had accumulated included stream channels, gullies, kettles, lakebeds and shores, and the lee slopes of hills and glacial features. Most subsurface testing revealed sorted, unstratified deposits of decomposed bedrock and glacially deposited gravels, cobbles, and boulders with significant fracturing of the rock from freeze/thaw cycling. Seasonally wet tundra and wetland-like areas were transected, but frequently were not subjected to subsurface testing because of water saturation and infiltration.

Pedestrian surveys and, where possible, subsurface testing that focused on high probability and moderate probability areas were conducted in 2004 through 2008 (Figure 22-15). The elevated areas were transected by three people spaced approximately 20 meters apart in landscapes where little vegetation obscures the ground surface. The wooded areas were examined with similar effort, but likely less precision because trees and shrubs in the survey area were high-density types such as alder, willow, and

cottonwood. Alluvial deposits were likewise examined for cultural remains that may have washed out of higher-elevation areas.

22.6.2.2 2004 Field Season

During 2004, the Pebble Deposit area (as delineated at that time; Photos 22-1 and 22-2) received the most intensive survey (Figure 22-2). Areas of particular interest were the ridges and benches above the deposit to the east and west and the elevated glacial-outwash deposits perched above Upper Talarik Creek at the north end of the valley. The glacial-outwash landforms are the divide between the Upper Talarik Creek drainage and the South Fork Koktuli River drainage, which begins in Frying Pan Lake.

Field crews examined the area surrounding Frying Pan Lake (Figure 22-2; Photo 22-3), with particular attention to the area along the southeast quarter where a beaver-trapping camp had been reported by informants. Field crews also surveyed the valley north of Kaskanak Mountain (Photos 22-4 through 22-8). Along the eastern valley slope were numerous boulder fields and rock formations that could have been used as rock shelters, navigation points, and caches for hunting equipment and harvested food (Photos 22-9 and 22-10). Field crews examined the rock faces in detail for cached materials, glyphic art, and other signs of human use. At the pass at the head of the valley, boulders were aligned naturally to create a possible caribou fence or drive-line structure where the valley is most constricted (Photo 22-11).

In a valley south of Kaskanak Mountain (Photos 22-12 and 22-13), field crews excavated test units on an alluvial feature at the confluence of the main stream and a side stream, where a flattened area gave the impression of some human activity in leveling the ground surface (Photo 22-14). As the stream appeared to have a population of beavers (Photo 22-15), it is conceivable that it could have been a location for a winter trapping camp.

An area on a 1,222-foot-high knoll south of the outlet of Frying Pan Lake was presumed to have a high probability of containing cultural resources sites because it has commanding views over valleys of the South Fork Koktuli River (Photo 22-16) and may have been used as a lookout for subsistence resources. An area on the 1,567-foot-high ridge west of the Pebble Deposit has wide views (Photo 22-17), and caribou frequent the area in the summer for insect avoidance. Two other surveyed areas were located on the peaks of Koktuli Mountain in locations with virtually no soil or vegetation (Photos 22-18 and 22-19), reducing the likelihood that artifacts, if present, would be found.

Test units were excavated in high probability areas and in areas where soil had accumulated. Some areas were amenable to shallow testing, particularly in sheltered areas where fine soils could accumulate (Photos 22-20 and 22-21). The excavation of test units was frequently stymied by the surface geology, which consisted of decomposed angular blocks of local bedrock and rounded cobbles to boulders of glacially deposited granites (Photos 22-22 and 22-23). Soils along the north shore of Frying Pan Lake appeared to be crushed local rocks, probably caused by ice movement on the lake. Thick ice pans combined with strong winds could crush the gravel and push up a berm of fine material (Photos 22-24 and 22-25).

The field crew also monitored the excavation of geotechnical assay pits by geotechnical crews using small backhoe-type excavators to dig to depths up to approximately 5 feet (Photo 22-26). With the assistance and cooperation of the excavator crews, a field crew member used a shovel and a trowel to partition the excavated soil and examined the soil for artifacts, organic layers, and other structures.

22.6.2.3 2005 Field Season

In 2005, the field crew conducted pedestrian surveys, with visual examination of existing exposed gravel in selected portions of the claim boundary area and subsurface testing where deemed appropriate by the field supervisor. The locations of the pedestrian surveys for the 2005 field season are illustrated in Figure 22-3. For a description of general field survey methods see Section 22.6.2 above.

Most of the 2005 field effort was spent in the area southeast of Kaskanak Mountain and north of the South Fork Koktuli River (Figure 22-3; Photo 22-27). Ridgelines (Photos 22-28 and 22-29), stream-channel areas (Photos 22-30 and 22-31), outwash fans and valley-bottom lakes (Photos 22-32 and 22-33) were examined for cultural resources, with test units excavated where field crews believed soil was present or where artifacts or features were visible on the surface. Field crews examined the area surrounding a possible lithic artifact identified during the survey to determine if more cultural resources were present on and below the surface in the immediate area.

Surveys also were done on the slopes of Kaskanak Mountain between the Pebble Deposit location and Frying Pan Lake (Figure 22-3; Photo 22-34). A survey was conducted along several bench features with test units excavated where soil was retained by the landforms (Photos 22-35 and 22-36). Descending the slopes towards the valley bottom, numerous perched lakes with glacier-formed ridges in between were surveyed, with attention paid to the ridges and lakeshores (Photos 22-37 and 22-38). Faunal disturbance of the soil was noted in the form of extensive ground-squirrel burrows that had been excavated by brown bears (Photo 22-39), which, in this environment, may be an important factor in soil-formation processes. Because of the less-steep slopes of this survey area, some animals find it easier to access the high ground; for example, caribou use these high-elevation areas for avoiding insects (Photo 22-40).

Field surveys also were conducted in the Upper Talarik Creek basin, in the valley southwest of Kaskanak Mountain, and on the northern bluffs along Koktuli Mountain. The April 2005 visit to the Upper Talarik Creek basin was accomplished despite the snow and ice covering much of the area and test units excavated in the area rapidly filling with groundwater (Photos 22-41, 22-42, 22-43, and 22-44). This side of the Upper Talarik Creek basin appears to be a lateral moraine with very coarse, but friable, angular blocks of frost-shattered till that allows snow melt and rain water to return rapidly to the stream. A further survey was undertaken later in the season in an area expanding beyond the old moraine into the vicinity of the creek bottom (Photos 22-45 and 22-46). The field crew examined the northwestern end of the valley southwest of Kaskanak Mountain for caribou fences, rock caches, “pretend people” or stone cairns, and other cultural resources. The higher area along the ridge had several promising, but non-cultural, stacked-rock formations with views over wide areas (Photo 22-47) and a persistent snow patch that the field crew examined for preserved organic material (Photo 22-48).

Descending toward the south into the valley southwest of Kaskanak Mountain, the field crew examined the stream banks and other promising locations for evidence of human use and for possible paleontological deposits in stream bank cuts (Photos 22-49 through 22-52).

The field crew also surveyed the northern slopes of Koktuli Mountain (Photo 22-53), which was suggested by several archaeologists as a favorable location for hunting stands and lookouts. The benches in the foreground of the photograph are gravel glacial features with sparse vegetation, allowing excellent visibility for possible artifacts on the surface. The series of benches was descended following the slope

and the bench features, with the field crew excavating test units near the base of the slope in an area protected from wind and having an accumulation of soil.

22.6.2.4 2006 Field Season

Survey methods during the 2006 field season were based on pedestrian surveys, with visual examination of exposed soils in selected areas with high or moderate probability for finding cultural resources. Figures 22-4 through 22-8 show the areas surveyed during the 2006 field season. For a description of general field survey methods see Section 22.6.2 above.

In June 2006, the field crew surveyed an area where exploration drilling was planned. Much of this area is in the Upper Talarik Creek basin, below the North Fork Koktuli River divide (Figure 22-4; Photo 22-54). A survey track went across the basin, which consists of primarily wetlands interspersed with glacially deposited gravel ridges and kettle lakes (Photos 22-55 and 22-56). A second survey track followed the possible northern extent of the ore body area, with attention paid to rock outcroppings, glacial gravel hillocks, and lake shores as possible locations of cultural material. Test units excavated along this track where surface vegetation indicated the presence of soil revealed primarily shallowly buried gravel (Photo 22-57). On a third survey track, evidence of relatively modern use was discovered in the form of a fragmentary ceramic teacup of indeterminate age found on a game trail (Photo 22-58). Exposed bedrock features (Photos 22-59 and 22-60) were examined for cached material, votive offerings, and petroglyphs.

A survey followed lake shores and raised features in the deposit area and westward toward Kaskanak Mountain, going from the ridge top to the valley floor and around the east side of the three lakes (Figure 22-4; Photo 22-61 and 22-62). After reaching the valley bottom, an additional survey was made around the three lakes in the deposit area, which consisted of primarily tussocky tundra (Photo 22-63).

The field crew surveyed along the northwestern slopes of Koktuli Mountain (Figure 22-4), beginning from Frying Pan Lake (Photo 22-64) and proceeding north along the upper edges of the slope (Photo 22-65). The crew ascended the slopes of the mountain to a level where rock outcrops were prevalent and examined these outcrops for lithics or other evidence of use as hunting stands or lookouts. Further north, a canyon with a stream-cut along the bottom of the canyon transects the mountain slope, and the northwest quarter of the mountain features glacial gravel deposits rather than exposed bedrock and colluvial deposits. Snow patches and stream cuts make this area challenging to traverse (Photo 22-66). The field crew finished the survey track on the slopes east of the three-lakes area (Photo 22-67).

Field crews returned in August 2006 to examine relict outwash features along the South Fork Koktuli River (Figure 22-5) and the southwest slopes and foothills of Groundhog Mountain (Figure 22-6). The area surrounding this portion of the South Fork Koktuli River contains a number of prominent glacial-outwash features that may have hosted human activities in the past (Photo 22-68). The modern river meanders in a wide path along the bottom of a set of steep banks, with much higher relict bank features located at varying distances from the lower banks. The field crew first followed the low banks (Photo 22-69) along a survey track parallel to the low banks' edges. Continuing the survey along the low bank edge, the crew then excavated test units near a gravel bar with trees and other woody shrubs that indicated possible campsites (Photo 22-70). The field crew also surveyed the higher relict bank (Figure 22-5; Photo 22-71).

A survey was made on the slopes of Groundhog Mountain (Figure 22-6) to investigate a series of steep-walled cliffs and canyons. In other areas of North America, prehistoric hunters made it a practice to stampede herd animals off cliffs as a means of efficiently harvesting large amounts of meat. Archaeological evidence for these practices include bone dumps, structures designed to direct stampeding animals, and cache pits or rock caches to store harvested and processed meat. Photos 22-72 and 22-73 show landform types favorable to the stampede hunting strategy, and Photo 22-73 also shows a landform type traditionally used by Athabascans to hunt caribou and moose by forcing them to swim in a river or lake and then harvesting them from boats. Field crews also examined areas where materials or offerings may have been left by prehistoric or historic hunters (Photo 22-74). The incised channels on the lower slopes of Groundhog Mountain (Photo 22-75) also were surveyed because they may have provided good locations for hunters to intercept small groups of caribou.

In October 2006, Northern Dynasty Mines Inc. requested that two areas near the community of Iliamna be examined for cultural resources. The two areas are both on lands owned by Iliamna Natives Limited. One area, near the post office, was leased for Pebble Project for storage of geological cores from drilling operations and of field equipment. The lot was already being modified with a sand pad over the highest portion of the lot. The field crew conducted a pedestrian walkover with some subsurface testing and examination of soil exposures in unfilled areas (Figure 22-7; Photos 22-76 and 22-77). A thin covering of wet snow did not obscure surface features; however, in areas off the pad, the existing water level created small hummocks surrounded by slush and ice. Much of the lot was relict lakebed deposits with thin silt over large cobbles, creating a water-permeable seasonal wetland (Photos 22-78 and 22-79).

Also in October 2006, field crews examined the western bank of the Newhalen River, 9 river miles downstream from Sixmile Lake (Figure 22-8; Photo 22-80). The field crew established the approximate location on the high bank above the Newhalen River (Photo 22-81) after a short walk from the nearest helicopter-accessible landing area. The light snow covering did not obscure, but rather enhanced, some surface depressions (Photo 22-82). Following the high bank, the field crew investigated a gravel bar on the river.

22.6.2.5 2007 Field Season

During 2007, field investigations were conducted to survey two locations near Upper Talarik Creek northeast of Koktuli Mountain, two areas on a northern side ridge of Kaskanak Mountain (Figure 22-9), and areas where geological investigations were being conducted (Figure 22-10). For a description of general field survey methods see Section 22.6.2 above.

In June 2007, the survey team performed pedestrian surveys and subsurface testing at two areas northeast of Koktuli Mountain along Upper Talarik Creek and at two areas at different elevations on a northern side ridge of Kaskanak Mountain (Figure 22-9).

In August 2007, the field crew conducted pedestrian surveys, subsurface testing, and monitoring in areas where geological investigations were being done or where hydrological monitoring was planned (Figure 22-10). The survey route was defined by locations for geological or hydrological investigation, and the survey was focused in areas determined to have a higher probability for cultural resources. The monitoring of the excavation of drill site "sump pits" was undertaken at the request of the equipment operators encountered during the survey of drill sites.

Similar to previous field surveys, most of the surveyed areas were found to have insufficient soil for the excavation of test units. The field crew excavated six test units in areas where silt, sand, and gravel soils had accumulated (Figures 22-9 and 22-10).

22.6.2.6 2008 Field Season

Field surveys in 2008 focused on examining areas proposed for future hydrological monitoring and geological examination, as well as continuing probability-based surveys in previously unsurveyed portions of the claim boundary area. For a description of general field survey methods see Section 22.6.2 above.

In June 2008 (late June through July 1), the field crew conducted pedestrian surveys in the area northeast of Kaskanak Mountain (Figure 22-11) in a gap between previously surveyed areas. The three-person survey crew surveyed 13 tracks in this area and excavated 33 test units in areas thought to have a high or medium probability for containing subsurface cultural material. A portion of the survey track included areas scheduled for ground-disturbing activities (e.g., soil tests, drilling of geotechnical or other drillholes, and installation of hydrological testing/monitoring wells). In these areas, the field efforts included closely spaced surface walkovers and excavation of test units when appropriate.

In July 2008, the field crew returned to conduct surveys in a valley in the southwest portion of the claim boundary area, along a valley system on the west side of Koktuli Mountain, and along a route connecting several proposed drill sites for hydrological investigations in the coulee-like area east of Koktuli Mountain and Upper Talarik Creek (Figures 22-12 and 22-13). The field leader also inspected several proposed drill sites for groundwater monitoring, closely examining the sites for surface remains and excavating 13 test units. The field crew excavated an additional three test units during the surveys.

In August 2008, the field crew conducted surveys around Big Wiggly Lake, north of the Cone, and along the northern slopes of Kaskanak Mountain between the Cone and Big Wiggly Lake (Figure 22-14). The field crew identified no areas for subsurface testing along the survey tracks during this trip. The field supervisor separately inspected one proposed drill site for cultural resources and excavated one test unit at the location prior to any ground disturbance.

22.6.2.7 Cultural Resources Consultation Interviews

In 2004, consultation was initiated with the SHPO, the National Park Service, tribes residing in the area, and other interested parties. Tribes and other interested parties that were sent consultation letters on August 31, 2004, are listed below:

- Bristol Bay Native Association
- Iliamna Natives Limited
- Iliamna Village Council
- City of Newhalen
- Newhalen Tribal Council
- City of Nondalton
- Kijik Corporation
- Nondalton Tribal Council
- Pedro Bay Native Corp.
- Pedro Bay Village Council
- Port Alsworth Improvement Corp.
- Tanalian Inc.
- City of Ekwok
- Ekwok Natives Limited
- Ekwok Village Council
- Igiugig Native Corp.
- Igiugig Village Council
- Kokhanok Village Council
- Koliganek Natives Limited
- New Koliganek Village Council
- Levelock Natives Limited
- Levelock Village Council
- City of New Stuyahok
- Stuyahok Limited
- New Stuyahok Traditional Council

As of the end of 2008, no response regarding the initial consultation letters has been received from these entities. Further consultation in the form of cultural resources interviews in area communities began during the winter of 2006/2007.

On December 5, 2006, researchers sent additional letters to seven communities—Igiugig, Iliamna, Kokhanok, Newhalen, Nondalton, Pedro Bay, and Port Alsworth—requesting each community's participation in interviews to document local knowledge of the land and cultural resources. Researchers made follow-up telephone calls to confirm receipt of the letters and were successful in scheduling trips to four communities. Field crews conducted cultural resources interviews in Nondalton, Newhalen, Kokhanok, and Port Alsworth in February and March 2007. Residents of Iliamna that were contacted declined to participate. Interviews in the communities of Pedro Bay and Igiugig did not occur because of scheduling difficulties.

Participation varied from 13 individuals each in Nondalton and Kokhanok, to five in Newhalen, and one in Port Alsworth (Table 22-1). Researchers worked with local tribal governments and residents to identify individuals, especially elders, who were knowledgeable about locations of cultural resources in the Bristol Bay drainages. Other possible respondents were identified by field workers who had previously been to these communities to conduct subsistence mapping interviews and who had compiled lists of active and knowledgeable subsistence users and elders.

The cultural resource mapping and interview method was derived from the systematic mapping protocol developed for the subsistence mapping interviews. Prior to field work, the study team developed a cultural resources protocol to be used as a guide during interviews. Researchers used 1:250,000-scale USGS quadrangle maps with acetate overlays to identify traditional and historical properties and asked questions intended to elicit specific information about the mapped features identified by respondents. Global Information System (GIS) technicians digitized the information marked on the acetate overlays and compiled the results in a geodatabase for analysis. One shortcoming of using 1:250,000-scale maps is the imprecision introduced by the scale; however, this scale allows for a single map to encompass most land-use history for each individual. The wide scale proved advantageous for interviewing people who had traveled extensively throughout the region. All respondents took care to precisely locate and represent, to the best of their abilities, features they considered to be of historic or cultural significance.

As a result of the map scaling and level of detail, maps of cultural resources generated from this data set are accurate in that they reflect the knowledge of the respondents, but may not be precise for purposes of locating specific structures or landscape features on the ground. Different respondents, sometimes from different communities, reported many of the same features independently. These features may not have been placed in the same location by each respondent; therefore, the final map compiling all respondent data often depicts more than one location for a single feature. It should be noted that the features identified during the cultural resource interviews have not been ground-truthed. The purpose of the interviews was to document locations of possible cultural resources and areas of cultural importance.

The cultural resource interviews were conducted based on guidance for cultural resources identification provided by the Advisory Council on Historic Preservation and on local ethnographic and historic knowledge gained in the course of literature reviews and subsistence interviews. Categories of cultural resources to be identified included the following:

- Historic structures or built features such as village sites, cabins, caches, camps, reindeer corrals, and marked grave sites.
- Travel routes, including traplines, trails, and portages.
- Definable areas such as burial grounds, battle sites, areas associated with legendary creatures, and other areas of religious or traditional significance.
- Named or storied locations, landscape features, or other places with traditional or cultural significance.

Respondents were asked for information in addition to location regarding each recorded feature, including when the reported features occurred or were in use and whether the respondent had personally seen or experienced the reported feature or was relating second-hand knowledge. Second-hand knowledge is distinguished here from traditional knowledge by the fact that second-hand knowledge often comes from a specified individual or group source (e.g., an elder or relative) and often describes recent phenomena. Traditional knowledge is collectively held, is related by individuals with no specific source cited other than a collective attribution, and usually describes a persistent or recurrent phenomenon, event, or feature.

Certain questions regarding times of use and abandonment were chosen to determine which of the reported cultural and historical resources were more than 50 years old, a general age guideline for historic significance under the NRHP. It is inadvisable, however, to discount the NRHP eligibility of any features noted during interviews and lacking age-related information without further in-depth research. Other features may not lend themselves to documentation in the NRHP, as the subject matter may be too sensitive to individuals or communities.

In addition to the cultural resources interviews described above, information regarding sites of historic and/or cultural importance was obtained during subsistence and traditional knowledge interviews that were conducted in 2005 and 2006 in the communities of Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelok, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth. Interviews were conducted with active harvesters, both male and female, who resided in the Bristol Bay region and who had used the region during the previous 10 years, as well as with elders who historically used the area. Using acetate overlays on a 1:250,000-scale USGS map, the subsistence and traditional knowledge interviewers recorded locations of subsistence-use areas, travel routes, camps and cabins, and cultural

resources. These features were coded as "last 10 years" or "11 plus years"; were recorded as either a polygon, a line, or a point; and were assigned a number to tie the mapped feature to interview notes. The cultural resource records were later coded as "50-plus years," "multigenerational," or "unknown" to correspond to the data obtained during the cultural resource interviews. Similar to the cultural resource interviews, different respondents in the subsistence and traditional knowledge interviews reported many of the same cultural resource features independently and often in slightly different locations. This sometimes resulted in multiple points for the same feature. The cultural resource features identified during the subsistence and traditional knowledge interviews were added to the cultural resources database.

22.7 Results and Discussion

Previous cultural resources surveys, such as those cited in Section 22.4, have resulted in the identification of a prehistoric cultural sequence from some time after the retreat of glaciers covering the area through the first, presumably proto-Dena'ina, users of the area. Sites of presumably Dena'ina origin were contemporary with or were replaced by presumably Yup'ik-style structures and materials in some locations, such as Newhalen and Pedro Bay. This indicates the likelihood that both Athabascan (Dena'ina) and Eskimo (Yup'ik) types of material culture and sites may be present in the study areas. The relative remoteness of the Pebble Deposit likely limits the number of cultural resource sites and the extent of cultural deposits in the claim boundary area. The transportation-corridor study area, however, traverses areas where possibly both Yup'ik and Dena'ina people have lived for several thousand years, increasing the likelihood that archaeological or culturally significant sites may be found in this area. Areas with a higher likelihood of having archaeological or culturally significant sites include the Newhalen River corridor and other stream corridors, lakes, and mountain passes, as well as the shores of Iliamna Lake and its tributary streams. All these areas have high subsistence-food productivity. The village site of Pedro Bay, which was occupied at least 2,370 ±115 years ago (I-3716; Riddell, 1970), is one example of Native occupation stretching back several thousand years within the transportation-corridor study area.

Field crews conducted five seasons of cultural resource field surveys in the claim boundary area, with four trips in 2004, three trips in 2005, three trips in 2006, two trips in 2007, and three trips in 2008. (For a full discussion of the 2004 through 2008 cultural resource surveys see SRB&A 2005, 2006, 2007, 2008, and 2009.) Cultural resource discoveries that resulted from these surveys include the following:

- Two prehistoric lithic sites (ILI-00193 and ILI-00194) along the South Fork Koktuli River.
- One rock circle and nearby rock stack (ILI-00212) on a large glacial rubble pile south of the Cone.
- Two possible tent rings (ILI-00203 and ILI-00204) on a south-facing ridge of Kaskanak Mountain.
- Several isolated lithic finds (ILI-00196, ILI-00201, ILI-00202, ILI-00205, ILI-00207, ILI-00208, ILI-00209, ILI-00218, and ILI-00219).

Evidence of more recent use also was discovered during the surveys; these discoveries included subsistence camps and hunting sites along the South Fork Koktuli River, around Big Wiggly Lake (ILI-00213 through ILI-00217), and on the high ridges and benches of Kaskanak Mountain. Isolated modern

objects (e.g., cartridge scatters, a fragmentary teacup, and metal cans and wires [ILI-00220]) were observed throughout the claim boundary area.

22.7.1 Literature Review

22.7.1.1 Geology, Glaciation, and Prehistoric Environment

The surface geology in the study areas is the result of a long history of glacial advances and retreats throughout the Pleistocene epoch—a part of the geological timescale that lasted from 1.64 million years ago to about 10,000 before present (BP)—and the early Holocene epoch beginning 12 to 10 thousand years BP. The timing of these glacial events puts a bottom time limit on possible archaeological resources in the study areas. The extent of glaciation also indicates that downstream areas, as well as areas not covered by the last glaciation, may have preserved early sites. Figure 22-1 shows the maximum extent of the last glaciation in the Iliamna-Nushagak area, with the general location of the Pebble Deposit marked with a red asterisk. Researchers have designated this region as the Nushagak-Big River Hills Upland (after Wahrhaftig, 1965), which is elevated above the Nushagak-Bristol Bay Lowland by 600 to 1,000 feet (Detterman and Reed, 1973). The terrain consists of low rolling hills composed of remnants of Tertiary period (65 to 1.6 million years ago) volcanic activity with valley infill of Pleistocene glacial debris that originated in the Alaska Range. Aeolian (wind-carried) deposits of tephra (volcanic ash) and glacially derived sands, silt, and loess are additive to existing sands and silts derived from locally decomposed rock. The Pebble Deposit area shows evidence of relict permafrost features and ongoing perennially frozen ground, including frost wedging, frost polygons, beaded lakes at polygon intersections, thermokarst lakes, and angular and expanded oxbows in streams that follow former polygon margins (Detterman and Reed, 1973). Cobbles and gravels in the silt and sand matrix of the area are a combination of blocky, angular frost-shattered bedrock and rounded, tumbled granite cobbles. Valley floor deposits contain larger rocks with evidence of seasonal artesian events. Meltwater appears to flow through the highly permeable matrix between frozen soil levels and erupt as geysers or boils during the spring thaw, carrying away sand and gravel and redepositing the material downstream (Knight Piésold Ltd., 2004; WMC, 2004). Gelifluction (the downslope movement of soil in a gelatinous state because of freezing, moisture content, and particle shape) combined with graviturbation (gravity-caused rock and soil movement), have resulted in the tops of hills being denuded of vegetation and soil, as the water-saturated soils creep downslope in arc-shaped waves during freeze-thaw cycle events in the spring and fall (Detterman and Reed, 1973; Wood and Johnson, 1978).

Recent work on the glacial history of southwest Alaska has refined the understanding of the timing of the sequence of glacial advances and retreats that carved the landscape of the Iliamna area into its present form. The vicinity of the Pebble Deposit appears to have been under glacial ice during the last major glaciation of the Late Wisconsin period (30,000 to 10,000 BP; Manley and Kaufman, 2002; Stillwell and Kaufman, 1996). As indicated by radiocarbon dating of relict soils, these glaciers began retreating approximately 12,600 BP, approximately the same time as the inundation of the Beringian plain, which had connected Siberia to North America and was the presumed migration route of early people to North America (Dumond, 1987; Karlstrom, 1964; Stillwell and Kaufman, 1996; West, 1996). The Karlstrom sequence for Cook Inlet glaciation has been refined using Carbon 14 dating techniques and a broader selection of samples (Reger and Pinney, 1996). By 9,500 BP, most glaciers had retreated into mountain valleys (West, 1996). Because of this timing sequence, it is unlikely that early cultural materials like those at Lime Hills near the Stony River (approximately 10,500 BP) or possibly older materials such as that of

Bluefish Caves (23,000 BP), located in the northern Yukon Territory glacial refuge, would be present in the vicinity of the Pebble Deposit (Ackerman, 1996; Dumond, 1981, 1984; West, 1996).

Vegetation followed the retreating glaciers, as evidenced by the analysis of pollen deposited in lake sediments. During glacial advances, herbaceous tundra was dominant in ice-free areas; as glaciers retreated, birch and willow pollen began to rise in prominence, indicating a shift to a shrub tundra regime (Kaufman et al., 2005). The sequence of vegetation regimes derived from these records indicate that as glaciers retreated, mossy tundra was replaced by shrub tundra, which in turn was replaced by spruce forest. The sequence reversed when glaciers re-advanced (Briner, Kaufman, Axford, et al., 2000; Briner, Kaufman, Hu, et al., 2000). At present, the glaciers have been generally retreating further into the alpine zones, with few significant re-advances in the last several thousand years. By 5,500 BP, spruce pollen appeared, indicating a further shift from shrub tundra to forest in the lowland. No deposits of large mammal remains have been discovered in the Iliamna area, but it may be inferred that the species, variety, and numbers of herbivores changed with the succession of plant types during glacial advances and retreats (West, 1996). The area could have hosted human populations as early as 12,000 BP.

22.7.1.2 Prehistory

The first peoples to colonize the area likely specialized in the use of glacial margin habitats, and could have been present in the Bristol Bay region 12,000 or more years ago and left some traces of their presence on the land (Dixon et al., 1979). The earliest documented prehistoric sites in southwest Alaska are located along the Kuskokwim River drainage (Ackerman, 1996), the Aleutians (West, 1996), and Cook Inlet (Reger and Boraas, 1996; W. Workman, 1996). The older sites of the middle Alaska Range and Nenana Valley are relatively distant from the study areas, but it is possible that materials from Denali Tradition and other early cultural complexes could be found in southwest Alaska, including the vicinity of the study areas (Ackerman, 1996; West, 1996). The earliest tool traditions share many similarities with those of Siberia and appear to change in response to variations in climate. Researchers have noted similarities between early cultural complexes such as Denali and Dyuktai traditions and a later tradition, tentatively called Late Beringian, that resembles Sumnagin tradition assemblages in Siberia, with examples of the latter from Kagati Lake in the Togiak National Wildlife Refuge in southwest Alaska approximately 175 miles west of the study areas (West, 1996). These traditions disappeared suddenly in time frames associated with climactic shifts, which may indicate that climatic and environmental instability made continued use of the far north occasionally untenable for hunters and gatherers or that the changes required new strategies or changes in emphasis for group subsistence (Vasil'ev et al., 2002).

The earliest known archaeological culture in North America is the Paleoindian horizon, presumably dating from the first people entering the New World through the Beringian plain. Paleoindian sites have been tentatively dated to as old as 27,000 BP, and most have been solidly dated to approximately 12,000 BP (West, 1996). This horizon includes core and blade technologies and fluted projectile points or knives. The Paleoindian lithic reduction technique involved relatively large cores of appropriate lithic material fashioned into roughly triangular blanks, with sharpened blades on two faces of the material. These bifaces, which could be from two to several inches long, may have been tools themselves or may have been further reduced into projectile points, knives, scrapers, and other tools. Fluted points may have been fashioned from these bifaces. Fluted points are usually several inches long in unbroken form, with a fluted groove from the flat base on one or both flat faces of the blade, presumably for hafting into a handle or shaft (Dumond, 1981, 1984).

Subsequent to and probably overlapping with the period attributed to the Paleoindian horizon are a number of regionally distinct archaeological cultures, comparatively better represented and well dated, that include microblade technology. These archaeological cultures date from approximately 9,000 BP to 2,000 BP, with local and regional variations as well as variations based on season of use and intended use of the tools (Dumond, 1981, 1984). Microblade technology uses small stone cores to create large numbers of small, roughly rectangular microblades that were used alone or were embedded in handles or shafts made of wood, bone, or ivory using pitch or hide glue. This technology made very efficient use of lithic raw material as compared to the large flakes and correspondingly large volume of waste material typical of the Paleoindian technology. Associated tools made from stone include a number of types of scrapers, gravers, and other tools to facilitate the manufacture and maintenance of composite (organic and lithic) hunting and crafting tools. Stone projectile points discovered with these materials include stemmed-, notched-, straight-, and curved-based projectile point forms (Dumond, 1981, 1984; West, 1996).

Dumond (1981, 1984, 1987) has provided a synthesis of the named archaeological constructs containing microblade technology as they were described in the literature of Arctic archaeology. These named units may or may not have any bearing on the date, age, or artifact composition of sites at this time, but serve as comparison sets for further research and analysis as more sites are excavated and analyzed. Dumond proposed that the two largest units of analysis are the Northwest Microblade tradition and the Arctic Small Tool tradition (ASTt). In addition, Dumond contrasts the two on the basis of reduction-flake fineness, the sizes of the tools themselves, and the varieties of tool types found in assemblages of each type. ASTt is the more refined lithic technique, with smaller reduction and sharpening flakes, smaller tool sizes, and a wider variety of small, specialized stone tools. Regional subsets of these two traditions include the American Paleo-Arctic tradition of the Alaska Peninsula and Kobuk River areas, the Denali complex of the central Alaska Range, the Northern Archaic on the Kobuk River, the Tuktu or Tuktu-Naiyuk tradition, and the Athabascan tradition.The earliest known site in the Bristol Bay study area was found at Igiugig near the outlet of Iliamna Lake and was assigned to the American Paleo-Arctic tradition (Dumond 1984). According to Dumond, the artifact characteristics at Igiugig resemble those of a similar site located at the mouth of the Kvichak which dated to 9,000 to 8,000 BP.

Coastal sites best present the sequence for the years from 7,000 to 4,500 BP as divergent archaeological cultures appeared, flourished, and retreated. Anangula, a long-occupied site near Nikolski in the Aleutian Islands, has the longest continuous record of use and occupation. Anangula Village phase materials resemble the Ocean Bay I materials of Kodiak, which may share some features of the Northern Archaic tradition north of the Alaska Peninsula (McCartney and Veltre, 1996). By 4,500 BP, a shift in technology from percussion technique or flaked tools to ground and polished tools made of softer materials was underway in the coastal sites. In the Aleutians, the technology from this time presents a direct continuity with the technology noted at first contact, showing an evolutionary refinement over time. ASTt materials have been found in coastal and some interior sites in strata dating from 4,000 to 3,000 BP (Dumond, 1984, 1987; W. Workman, 1996). The sudden appearance of this material in the archaeological record, with no prior signs of its origin and development in Alaska, may represent the arrival of new people from Siberia, where similarly manufactured artifacts have been found (West, 1996). This may represent the initial colonization of the coastal and riverine areas of southwestern Alaska by predecessors of contemporary Eskimo groups (W. Workman, 1996). On the Alaska Peninsula, this shift from ASTt to the Norton tradition appears to have occurred at approximately 2,500 BP (Dumond, 1984).

The main technological shifts in material-culture manufacturing techniques from ASTt to Norton included the almost complete abandonment of percussion techniques of stone-tool manufacture in favor of pecking, polishing, and grinding techniques and the advent of well-developed, high-temperature-fired ceramics. The early dates of this shift began in the Norton phase, named after Norton Sound, the geographic area in which the key sites defining the tradition were discovered (Dumond, 1987). The replacement of most percussion-formed tools with polished-stone tool manufacturing and the gradual decline in the quality and manufacture of ceramics defines the later Thule tradition, which segues into contact-period Eskimo material culture. The Thule tradition was a successful adaptation to reduced climactic variability, using a broadened variety of possible subsistence resources and having an ability to exploit the resources of maritime, riverine, and interior provinces. Sites of Norton and Thule affiliation also represent a shift in emphasis to marine mammal harvests, particularly seals and sea lions in southwest Alaska, and the advent of coastal bowhead whaling in the Bering Strait and northern Alaska. Thule, in general, represents the material culture of contact-period Eskimo people (Dumond, 1984, 1987).

The most recent interior Alaskan material-culture tradition is called the "Athabascan tradition" for its ubiquity in historic and late prehistoric contexts linked to historically known Athabascan-language-speaking people of interior Alaska and Cook Inlet (Dumond, 1981; K. Workman, 1996). This period extends from about 2,000 BP through the very recent past, with the last 250 years displaying an increasing rapidity of technological replacement as metal replaced stone and the hunting-tool complex was supplemented by and ultimately replaced by firearms. During this period, group territories were solidifying, and the Dena'ina were moving from the interior mountain valleys to occupy the shores of Cook Inlet (Fall, 1981a, 1981b; Kari and Fall, 2003). Inter-group conflicts contesting territory occurred between the Dena'ina and the Yup'ik and Alutiiq people of coastal southwest Alaska, the Alaska Peninsula, and outer Cook Inlet (Reger and Boraas, 1996; K. Workman, 1996). Athabascan sites are frequently noted for their sparse character. Unlike Yup'ik and Alutiiq associated sites, there are usually no prominent midden deposits, no large stashes of well-preserved composite tools and housewares, and few stone-tool fragments. This paucity of recovered cultural materials coupled with the relatively early introduction of imported metals contributes to ongoing issues with the definition of Athabascan material-culture traditions (K. Workman, 1996).

There are 37 prehistoric sites in the mine and transportation-corridor study areas (Table 22-2). Seven additional sites have both prehistoric and historic components, and four sites do not have assigned prehistoric or historic designations. Two NRHP-eligible sites with prehistoric components are the Iliamna River Site Complex (ILI-00046), which has numerous surface depressions, and ILI-00049, a prehistoric site with large, multi-room house pits and cache pits. There are no previously reported prehistoric cultural resources in the immediate vicinity of the Pebble Deposit; however, as discussed in Section 22.4, no cultural resources surveys had been conducted in the vicinity of the deposit before this study began in 2004. In 2005, one isolated prehistoric lithic find site (ILI-00196) was documented. Two multi-artifact prehistoric sites (ILI-00193 and ILI-00194) and three isolated lithic find sites (ILI-00207, ILI-00208, and ILI-00209) were documented in the claim boundary area in 2006, and two prehistoric rock ring sites (ILI-00203, ILI-00204) and three isolated lithic find sites (ILI-00201, ILI-00202, ILI-00205) were documented in the mine claim boundary area in 2007. In 2008, field crews discovered two isolated lithic find sites (ILI-00218 and ILI-00219), and one rock ring and nearby stack of rocks of possible prehistoric origin (ILI-00212).

22.7.1.3 Ethnography

Three Native languages, Dena'ina, Yup'ik, and Alutiiq, were spoken in the Bristol Bay area during the late prehistoric through the historic periods (Figure 22-16). Language can be used to distinguish people living in an area and marks the cultural identity of the speaker.

Prior to direct European contact, the Native people of Alaska had indirect access to Asia through trade fairs held along the Bering Sea coast and through shipwrecks and flotsam washing up on the beaches of the Gulf of Alaska from Japan and China (Oswalt, 1990; VanStone, 1967). Indirect contact with Europe likely occurred early as fur traders traveled to the northwestern reaches of Canada, Spanish California, and the soon-to-be Oregon Territory of the United States (Gibson, 1976). Early direct contact with explorers from Russia, Spain, France, and England resulted in increased contact over time and mixing of Alaska Native, European, and Asian people in Alaska as fur trade, mining, and fish harvesting and processing gained in importance over time. Increased contact often resulted in increased conflicts, disease, and loss of autonomy for Alaska Natives.

During the late prehistoric and early historic periods, the settlement patterns of the Dena'ina, Yupiit (plural of Yup'ik), and Alutiiq generally were seasonally dispersed hunting and fishing camps interspersed with large populations periodically gathering in centralized locations for certain resource harvests, such as salmon fishing, whaling, and sealing. Both Russian and American administrations and missionaries encouraged the creation of stable, permanent communities with year-round occupation by Alaska Native residents, such as around trading posts at Nushagak and Old Iliamna (Black, 2004; Fienup-Riordan, 1991; Oswalt, 1990; VanStone, 1967, 1984a; Znamenski, 2003). Permanent communities also grew around traditional Native sites, such as Nondalton, which was a fish camp for many Kijik residents and was believed by the local Russian Orthodox priest to be a superior subsistence location (Znamenski, 2003). During the American period, communities were built near new sources of possible income, such as canneries and trading posts, or near areas where resources were concentrated or accessible (Hrdlička, 1943; VanStone, 1967). Chronic, endemic, and epidemic diseases during the historic period resulted in abandoned villages, widows and widowers, and orphaned children (Fienup-Riordan, 1991; Fortuine, 1992; Hrdlička, 1943; VanStone, 1967). The survivors gathered at central locations, such as canneries or at Kanakanak, where there was a hospital, orphanage, and regional school (VanStone, 1967).

Dena'ina

The Dena'ina are speakers of one of 13 distinct Athabascan languages in Alaska. Researchers have identified at least four dialects of Dena'ina (Figure 22-16): Upper Inlet (Tyonek, Alexander Creek, Susitna, Kroto Creek, Montana Creek, Knik, and Eklutna), Outer Inlet (Kenai, Seldovia, Kustatan, and Polly Creek), Iliamna (Pedro Bay and Old Iliamna), and Inland (Nondalton, Lime Village, and Stony River) (J. Kari, 1975a; Kari and Fall, 2003). While it is unclear when the Dena'ina people expanded into Cook Inlet, researchers believe that they have inhabited this area for at least 1,000 years (Kari and Fall, 2003). Prior to their expansion into the Cook Inlet area, researchers believe that the Dena'ina occupied an area west of the Alaska Range in the upper Stony River area and perhaps the South Fork of the Kuskokwim River. The Dena'ina then entered the Cook Inlet area through Rainy Pass or Ptarmigan Pass and established clusters of villages (Kari and Fall, 2003). Dena'ina speakers range from the shores of Cook Inlet to the margin of the Copper River basin in the east, north to the vicinity of Denali (Mt. McKinley), to Stony River and Iliamna Lake in the west. In the study area, the Dena'ina inhabited the Lake Clark region and north and east portion of Iliamna Lake. The Russians recognized the linguistic

similarities connecting the Cook Inlet-Susitna River people to the Stony River area people and referred to these Dena'ina speakers as "Kenaitze" (Black, 2004; von Wrangel, 1980; Znamenski, 2003). The Russians also noted the similarities and differences between groups of interior Native people based on linguistic differences and generally used Dena'ina or Yup'ik words to describe other groups such as the Kolchans and Ingalik (von Wrangel, 1980).

The Dena'ina are the only Athabascan group to use both the coastal habitats and marine resources of Cook Inlet— harvesting marine mammals, fish, and shellfish—in addition to the terrestrial, riverine, and lacustrine environments and resources used by other Athabascan groups. Like other Athabascan groups, the Dena'ina highly valued and relied on resources, such as salmon and caribou, that were harvestable for short amounts of time in very specific places, necessitating extensive travel during much of the year (Osgood, 1966; VanStone, 1974; von Wrangel, 1980). The Dena'ina regularly came together for cooperative harvest activities that resulted in the formation of semi-permanent villages. Dena'ina people traveled between communities on the Stony River via the Telaquana Trail, to the Mulchatna River and down the Nushagak River, or through passes in the Alaska Range to Tyonek for trade, visiting, and subsistence harvesting (Hrdlička, 1943; Znamenski, 2003).

The Dena'ina used a hunter-gatherer settlement pattern, termed "Central Based Wandering," that suggests that the group "wanders" for part of the year while returning to one or a number of central locations or camps for other parts of the year (VanStone, 1974). The Dena'ina had an acute knowledge of the timing and location of seasonal resources that they orally recorded and transmitted between generations (Ellanna and Balluta, 1992; Vaudrin, 1981; Znamenski, 2003). The Dena'ina had a graded sedentism based on proximity to Cook Inlet (Znamenski, 2003)—groups that settled on the inlet and along the rivers had longer sedentary periods during the year than those settled further inland. As contact with EuroAmericans intensified during the Russian and American periods, and particularly during the late nineteenth century, the settlement pattern changed as more of the sedentary village residents began to spend more time out on the land trapping for furs. Increased direct contact with EuroAmericans during that period may have increased the number and severity of new diseases introduced into the local populations, reducing local populations as diseases swept through the communities and the survivors concentrated into fewer, more permanent communities closer to transportation routes and reliable resources (Fortuine, 1992; Znamenski, 2003). These nucleated villages attracted Alaska Natives of different ethnic groups and EuroAmericans who wished to settle, prospect, trade, or trap for furs in the region. Creole families of mixed Russian and Alaska Native heritage became the entrepreneurs, traders, Orthodox clergy, and government functionaries in many of these communities (Znamenski, 2003). New activities accompanied a desire for a new resource: cash or credit at trading posts and stores, which could be exchanged for a variety of newly introduced products such as tea, tobacco, sugar, flour, steel needles, and cloth (VanStone, 1974; Znamenski, 2003).

The Dena'ina people observed a moiety system in which the society was split into two groups that were further subdivided into six and five subgroups (von Wrangel, 1980; Osgood, 1966). The names of the first six clans were "Kachgiia, from the Raven's croak; Kali, from a catch of fish; Tlakhtana, from a grass woven mat; Montokhtana, from the rear corner of a hut; Tschichgi, from a color; and Nuchshi, who fell from heaven" (von Wrangel, 1980). The names of the second five clans were "Tulchina, because they liked to bathe in cold water during late autumn; the Katluchtna, because they like to string glass beads; the Schishchlachtana, similar to the betraying Raven, who at the creation of the earth and of mankind constantly tricked the latter; and the Nutschichgi and Zaltana, from a mountain not far from Lake Skilach

(near the source of the river Kaknu)" (von Wrangel, 1980). The tribes were matrilineal, meaning ancestry passed down along the mother's lineage, and exogamous, or requiring marriage outside of the clan. There may have been further implications of the moiety system in the manner in which villages were constituted, where opposite moiety clan segments may constitute a village community, but no further evidence of this has been developed.

Regional groups formed around accomplished leaders or wealthy men (*qeshqa*) whose leadership role was based on his continued ability to demonstrate and maintain his skills in hunting, war, or trade (Osgood, 1966; VanStone, 1974). The chief or headman roles were the most complex in terms of the duties, responsibilities, and reciprocal obligations of the position (Osgood, 1966; von Wrangel, 1980). One of the chief or headman's responsibilities was organizing potlatches, an event used to recognize important passages, renew and maintain social ties within and between communities, and to redistribute wealth locally and regionally through gifting (Osgood, 1966; VanStone, 1974; von Wrangel, 1980).

There were distinctions within Dena'ina groups based on wealth and skill, with wealthy men and successful hunters being the highest class, a fluid middle to lower class that was able to leave and live in other areas as they wished, and a captive class made up of war captives who could be ransomed (Osgood, 1966; VanStone, 1974; von Wrangel, 1980). The household, consisting of a husband, his wife or wives, and children living with the family unit, was the minimum unit of production (VanStone, 1974). The Dena'ina sent male children, who belonged to their mother's clan, to live with the mother's brothers at six years of age to be raised and trained in various life skills necessary for survival (Osgood, 1966). While use of specific camps could be passed through inheritance, it is unclear what effect this had on the rights of others to use such areas for hunting and what the cost for this use, if any, would be (Osgood, 1966).

Yup'ik

Yup'ik, one of three major Eskimo language families, is spoken primarily in western Alaska on the coast and river systems draining into Bristol Bay and the Bering Sea (Figure 22-16). The Yup'ik people historically subdivided themselves into regional groups that identified themselves based on their area of residence, with the suffix "*miut*" appended to the name for a place, e.g. Kuskowagamiut for people of the Kuskokwim River. The two regional groups in the Bristol Bay drainages study area were the Kiatagmiut, who inhabited the Nushagak and lower Multchatna rivers and into the western portion of the Iliamna Lake area, and the Aglurmiut, who inhabited the coastal areas of Nushagak Bay, the Naknek River area, and areas near Iliamna Lake (Vanstone, 1984a). At the time of contact with Europeans, the regional and local Yup'ik subgroups were shifting residence areas in response to conflicts between Yup'ik groups as well as with neighboring Alutiiq and Dena'ina groups (VanStone, 1967). The Yupiit also had positive interactions with neighboring groups, sharing language and technology, as well as expanding networks for reciprocal resource use, trade, and marriage (VanStone, 1967).

Fyodor Kolmakov was tasked by the Russian governor with establishing a permanent trading post in 1819 on the north side of the Alaska Peninsula at a site on the Nushagak River dubbed Novo-Alexandrovskiy Redoubt, now the seasonal fishing camp called Nushagak. Kolmakov and other Russian traders attempted to mediate disputes and reduce conflict within and between Yup'ik groups to facilitate and increase fur trade at the establishment (Oswalt, 1990; VanStone, 1967). From this post, further exploration into the interior was made along routes established by Native people, who were encouraged to trade at the redoubt.

Contact with Europeans brought diseases with which the Yupiit had no previous experience, resulting in epidemics that significantly reduced the population periodically (Fortuine, 1992). For example, smallpox spread throughout western Alaska in 1838, and the Yupiit blamed the illness on the Russians. As a result, they attacked the outpost at Ikogmiut (near Anvik on the Yukon River) and the trading post where Semen Lukin was trading on the Kuskokwim River, forcing him to defend himself from the attackers (Zagoskin, 1967). Periodic outbreaks of epidemic and pandemic disease swept the population at frequent intervals despite Russian efforts to inoculate against or treat diseases (Fortuine, 1992; Zagoskin, 1967). The 1900 and 1918 influenza pandemics also had devastating effects on the Yup'ik population (Fienup-Riordan, 1991; Fortuine, 1992; Napoleon, 1996).

The Yup'ik-based social organization around extended family groupings and larger networks of biological and fictive kin, and extra-kin relationships were based on trading partnerships in different communities. Yup'ik society was overtly egalitarian, and differences in social rank, wealth, luck, and abilities were mitigated through redistributive social events that mitigated inequalities without limiting the more productive or wealthier members of the community (VanStone, 1984a). Age, harvest skills, and social skills were the bases for social status among men. Women were valued for age, productivity, fecundity, and the self-discipline to conduct themselves correctly in their roles as proxy animals, owner of the harvest, distributor of the harvest, and ritual actor responsible for correct treatment of harvested game animals. These duties included collecting and preserving various animal parts, such as seal bladders, for rituals held annually to insure the success of future harvests. In their roles as proxy animals, wives were expected to behave as the game animals were desired to behave while the husband was engaged in the hunt, maintaining silence, stillness, and sometimes sequestration in specialized houserooms.

The pattern of social organization prior to contact was a number of overlapping extended family networks that united into territorially centered village groups ranging in size from 50 to 250 people (Fienup-Riordan, 1991). Nuclear and extended family groups occupied summer fish camps and hunting camps (VanStone, 1984a). In the winter and summer villages, the men, boys, and post-menopausal women lived in a central large house called a *kashim* (or some variant spelling thereof) while the fecund women and young children lived in smaller individual houses. The *kashim* was the ceremonial center of a community, and large communities could have more than one. Festivals held within and between communities, such as bladder festivals and messenger feasts, were hosted in the *kashim*; guests were often quartered in the *kashim*, and communal steam baths were often taken in the *kashim*. Elders and active hunters taught young men how to behave, how to make tools and crafts, and how to hunt, as well as the songs, stories, and dances important to their communities. Young girls and women prepared food for their spouse or parent and brought it to the *kashim*, but were allowed to enter the *kashim* only during ceremonial events (Fienup-Riordan, 1991; Oswalt, 1990; VanStone, 1967, 1984a).

During the late prehistoric to early historic period, the Yupiit fit the category described for the Dena'ina as "Central Based Wandering" (Oswalt, 1990; VanStone, 1974). The Yupiit frequently moved among a central winter village (which may also have been a summer village if there was a suitable salmon supply there), one or more summer fishing camps, and a number of ancillary "brush" or "spike" camps and travel camps used in fall and winter for large-mammal hunting and later for fur trapping (VanStone, 1967). The Yupiit were a "nomadic population moving annually within a fixed range. Village groups demarcated minimal subsistence ranges, that is, fixed areas including one central settlement and a number of seasonally occupied sites within which people circulated throughout the year in the acquisition of seasonally and culturally appropriate resources" (Fienup-Riordan, 1991). The degree of overlap between

communities' land-use areas was somewhat circumscribed by the individual users' networks of relatives and trade partners, but use otherwise was open, with a kind of payment system when a user harvested game in the use area of a neighboring community.

During the American period, missionaries and the federal government made efforts to change the highly mobile way of life of the Yupiit through mandated education and other policies (Fienup-Riordan, 1991; Oswalt, 1990; VanStone, 1967, 1984a). For the Nushagak and Kuskokwim river areas, the missionary director of education for Alaska, Sheldon Jackson, designated that Moravians would missionize and educate the Yupiit, settle them into fewer larger villages, and manage reindeer herds and stores. The Russian Orthodox clergy and lay people, who had been in the communities since the Russian period, resented the invasion of government-sponsored missionaries (Fienup-Riordan, 1991; Znamenski, 2003). Conflicts between the Russian Orthodox and Moravian clergy resulted in dramatic conflicts in the communities, whose religious sensibilities tended to merge Christian theological dogmas with Native traditions in unique ways (Fienup-Riordan, 1991). The express purpose of the Moravian mission was to Christianize and civilize the Kuskokwim and Nushagak Yupiit, with financial assistance from the federal government that funded the mission schools and health care (Fienup-Riordan, 1991). Moravian missions were located at Bethel and at Nushagak, the former site of the Novo-Alexandrovskiy Redoubt. The Nushagak mission closed soon after opening, but the Moravian Church has established itself along the Kuskokwim River as the main Protestant sect in that area.

Other forces affecting traditional Yup'ik settlement patterns in the late nineteenth century were the newly established salteries and canneries that provided seasonal employment opportunities and trade goods, mining camps that purchased game meat and hired laborers, and trading posts that served fur trappers (Fienup-Riordan, 1991; VanStone, 1967, 1984a). After years of competition with independent traders and with the Western Fur and Trading Company, the Alaska Commercial Company established a de facto monopoly, resulting in reductions in prices paid for furs and increased efforts to have trappers pay up their credit accounts, discouraging many trappers.

The Yupiit persisted in their seasonally mobile way of life insofar as it could accommodate the new demands and opportunities presented by EuroAmerican government, religion, and economic systems. While the locations of settlements continued to change in response to outside influences, the patterns of settlement and seasonal activities changed relatively little until the 1940s (VanStone, 1967).

Alutiiq

Alutiiq belongs to the Western Eskimo language group and is spoken on the Alaska Peninsula throughout the Kodiak Archipelago (Figure 22-16) to the vicinity of the Copper River Delta beyond Prince William Sound. The Alutiiq nearest the Bristol Bay study areas were the Koniagmiut, or Koniaq Alutiiq (Figure 23-16). Evidence of their settlements closest to the Bristol Bay study areas is found in the Naknek River drainage. Alutiiq also is spoken in the Cook Inlet communities of Seldovia, Nanwalek (formerly English Bay), and Port Graham. Alutiiq, also called Sugpiaq, Sugcestun, Suk, or Pacific Coast Eskimo, is different from the Yup'ik language spoken by people further north (Clark, 1984), although some early explorers did not see the Alutiiq language or material culture as being substantially different from the Yupiit of Bristol Bay (von Wrangel, 1980).

It is unclear what the social organization of the Alutiiq was prior to Russian contact, because conflicts between the Alutiiq and the Russians following the arrival of Russian fur traders altered the traditional

social organization before it could be documented by European explorers. At contact and for some time after, it is likely that the Alutiiq, particularly in Prince William Sound, organized themselves around an extended-family social unit, with a headman in each house and marriages resulting in the male moving in with the wife's family. Russian sources reported social classes that included nobles who were wealthy or successful hunters; middle- to lower-class people; and slaves, prisoners, and hostages (Black, 2004; Clark, 1984). Winter villages were generally located in areas protected from the prevailing winds along the coast—in bays, behind a headland, or in the lee of an island. Summer villages were located near mouths of salmon streams or near spawning lagoons. Hunting camps were located where needed and often consisted only of an overturned baidarka (skin-covered boat) on the beach. The Alutiiq people also made use of militarily defensible positions, called *kekur*, usually tall rock formations isolated by tide and steep cliffs near their winter villages. This strategy, often used to hide entire villages out of the reach of neighboring Native groups after raids, merely concentrated an entire village in one place where they could not leave and where they were vulnerable to Russian firepower, despite armor, wooden defensive walls, and magical intervention by shamans (Black, 2004; Clark, 1984; Solovjova and Vovnyanko, 2002).

The Russians conquered the Alutiiq occupying Kodiak, and the Alutiiq who survived became indentured workers or slaves for the Russians, hunting sea otters and other animals and contributing to the feeding of the Russian workers (Clark, 1984). The various Native groups under Russian administration saw improvements in how they and their families were treated by the Russians following the organization of the Russian American Company, but Native labor was still necessary for the sea otter hunt and in other jobs in the expanding Russian colonies (Black, 2004). Some Alutiiq people, including the Creole class composed of the offspring of intermarried Russian and Native people, became part of an educated middle class in the Russian colonies. The people that took advantage of the Russian American Company's educational opportunities became navigators, ship captains, managers, and clergymen. This middle class remained after the sale of Alaska to the United States in 1867 and maintained elements of Russian colonial culture, including religion, education, and architectural styles (Black, 2004).

22.7.1.4 Contact and the Historic Period

History begins with the first documented accounts of contact between non-literate and literate people. The context of contact in Alaska is typically a part of the Russian expansion of the fur trade from the coast to the interior in search of peltry for sale as part of a world-spanning system of trade that connected China, Europe, North America, and Siberia. Tea, tobacco, sugar, opium, cloth, and ceramics exchanged hands over the Atlantic and Pacific oceans and helped determine the destiny of the United States, Britain, China, Russia, Spain, and Portugal, as well as their colonies.

The earliest European exploration of the Cook Inlet region included Spanish and British expeditions between 1778 and 1794. However, European contact with the Dena'ina likely occurred as early as 1762, as Russian fur traders looked for trade opportunities in the area (Townsend, 1970b). These explorations provided the earliest written descriptions of the region and the Dena'ina people who lived there. British expeditions were led by Captain James Cook (1778), Captains George Dixon and Nathaniel Portlock (1786), Captain John Mears (1788), and Captain George Vancouver (1794). Spanish expeditions were led by Ignacio Arteaga y Bazan and Lieutenant Juan Francisco de la Bodega y Quadra (1779), Esteban José Martinez and Gonzalo Lopez de Haro (1788), and Salvador Fidalgo (1790).

The Russian Period

Soon after the 1741 discovery of Alaska by Captains Bering and Chirikov, independent traders in Irkutsk and other Siberian towns organized expeditions to the Aleutian Islands to harvest sea otters for trade with China through the port of Kiakhta in Siberia, the only port of exchange then open between the then-closed nation of China and Russia. The number of individual companies diminished, leaving two major firms in Alaska: the Shelikhov-Golikov Company and the Lebedev-Lastochkin Company. Competition was intense; however, the two firms comprised a small number of Russians in a sometimes-hostile land, a situation which fostered some cooperation in the field (Solovjova and Vovnyanko, 2002). Direct contact with EuroAmericans in the vicinity of Iliamna likely took place in the late eighteenth century as Russian explorer-entrepreneurs searched for people with furs to trade for items such as knives, beads, cloth, tobacco, tea, and tea-related ceramic ware (Black, 2004; VanStone, 1967).

The fur of primary interest to the Russian fur traders was sea otter. The sea otters were over-harvested as decades of unregulated and unmanaged harvests by competing independent companies depleted sea otter populations and led Russian fur traders to explore inland and into Bristol Bay and the Bering Sea and to take longer sea voyages along the coast into territories such as California that were claimed by other nations (Gibson, 1976). In 1792, Bocharov explored the Alaska Peninsula and Iliamna Lake areas for the Shelikhov-Golikov Company, portaging over the mountains to the lake that now bears an Anglicized variation (Becharof) of his name (VanStone, 1967). In 1799, Medvednikov, a member of Bocharov's 1792 party, returned to the area to explore farther into the interior and specifically to find a portage to the Kuskokwim River (Black, 2004). The competing Lebedev-Lastochkin Company had previously explored inland through the Iliamna Lake portage and possibly as far north as the Yukon River, and had an outpost on the lake near Old Iliamna. In 1798, a group of Dena'ina attacked and destroyed the outpost, leaving the territory free of competing traders (Black, 2004; Solovjova and Vovnjanko, 2002; Znamenski, 2003).

Until 1799, the individual traders associated with poorly regulated Russian fur trading firms operated in coastal Alaska in a sometimes openly hostile fashion, pitting indigenous groups against one another or attacking indigenous villages associated with competing companies in order to increase their market share at the expense of a competitor's work force (Black, 2004). Lebedev-Lastochkin Company employees reputedly plundered villages befriended by Bocharov (VanStone, 1967). The Shelikhov-Golikov Company practiced a system of keeping *amenaty*, or child hostages, wherein they took custody of a child from an important Native person to secure an agreement or ensure crew safety (Solovjova and Vovnyanko, 2002). Clergy from the Russian Orthodox Church, a state entity, reported abuses and protected people where possible, but were too few in number to protect many people. Other reports indicate that within the Lebedev-Lastochkin Company, shortages of trade goods and food caused internal conflicts, and interpersonal conflicts promoted attacks by company personnel and allied tribes on the posts and allies of other companies (Solovjova and Vovnyanko, 2002). Because of the complicated nature of negotiations taking place in Moscow and Saint Petersburg, Russia, which included planting false and inflammatory stories about competing firms in the press and official records, it was difficult for the Russian government to ascertain how competitors in Alaska were actually behaving.

Promoting rumors and accusations of abuse by competing independent companies was part of the strategy of the Shelikhov Golikov Company in political intrigues in Moscow to press for their company to become the core of a state-chartered monopoly. To this end, Shelikhov and his associates planted and fueled ongoing rumors that Russian America outside of Shelikhov's sphere was a *gulag* ruled by force of arms,

despite the very small number of poorly armed and supplied Russians and employees in the colony (Black, 2004). Managers cheated and abused not only the Native people, but also their Russian and Siberian employees as well as their heirs (Solovjova and Vovnyanko, 2002). As a result of alleged abuses and in the interest of extending imperial dominion over the new territories and new subjects, the Russian American Company was chartered in 1794 by the Russian imperial government. The charter granted a business monopoly with limited governmental power, mandated that the company support the mission of the Russian Orthodox Church in Alaska as a watchdog, and granted certain responsibilities to its employees and to the indigenous people of Alaska (Black, 2004; Sarafian, 1970). The charter became the governing document for the colony in 1799, and the imperial government revised it at every renewal until the 1867 sale of Alaska to the United States (Black, 2004). Sitka, the new capital, was established in 1804 on the site of a former Tlingit fort and became the most advanced outpost of European culture on the North Pacific Ocean for its time.

Competition, commerce, and cooperation with other national powers drove relations on the Pacific Ocean. Britain's position as an aggressive military and industrial power presented a challenge to Russia and Spain and, later, between the United States and Great Britain. Sea otters, the pelts of which had driven trade from the 1740s to the 1840s, were driven to near extinction in coastal Alaskan waters by 1810. The Russian American Company intensively managed sea otter harvests in Alaska to rebuild their numbers by limiting harvests and attempting to exclude foreign hunters and traders while company ships proceeded down the Pacific coast of North and South America, establishing posts in California to support the sea otter harvests, to grow crops, and to trade with the Spanish missions and Americans to support the Alaskan enterprises (Black, 2004; Gibson, 1976). Sea otter pelts and later beaver and other furs were traded with Chinese merchants at Kiakhta, which was one of the only ports open to European foreigners for trade until the British established Hong Kong following the Opium War of 1841. Tea, ceramics, cloth, and opium formed part of a triangle of trade that fueled economic competition between European and North American powers through the early twentieth century. Until Britain coerced China to open its markets in the mid-nineteenth century, the Russians and Portuguese were able to profit handsomely from their exclusive access to Chinese products such as silk and other fabrics, tea, and opium. The shift to beaver and other land and river mammal pelts was encouraged by a desire for those pelts in China and the trend for beaver felt hats in Europe and Great Britain (Gibson, 1976).

Figure 22-17 is a portion of a map of Russia's possessions in the New World, published in 1802, showing the area around Lake Clark, Little Lake Clark, and Iliamna Lake. This map demonstrates relatively informed early knowledge of the Pacific Coast and parts of the Alaska Peninsula, but limited knowledge of the interior or the area north of the peninsula. The area of the lakes is clearly known if not surveyed to modern levels of cartographic detail.

The Russians built their outposts in southwest Alaska on the coast in places with protected deep-water harbors or anchorages, such as nearby Novo-Aleksandrovskiy Redoubt on the Nushagak River, and at interior ports on portages and river transportation routes like Kalskag, Paimute, Russian Mission, Kolmakovskiy Redoubt on the Kuskokwim River and the post located near Old Iliamna (Townsend and Townsend, 1961; VanStone, 1988). The post at Old Iliamna was constructed by 1794, when Ivanov crossed a portage from Cook Inlet to Iliamna Lake. The Dena'ina attacked the Old Iliamna and Tyonek posts in 1798. The Russians had rebuilt the Old Iliamna post by 1818, when Korsakovskiy's expedition passed through Lake Clark and Iliamna Lake (Znamenski, 2003). The Korsakovskiy expedition used the trading post built by Eremy Rodionov, a Tyonek-based trader tasked with engaging the Dena'ina and

Yupiit of the lakes region into the broader fur trade (VanStone, 1988). The Iliamna region became a central area for the Russian land fur trade. Those wishing to trade peltry could take advantage of the different pricing schemes and selection of goods available at Novo-Alexandrovskiy on the Nushagak or at Cook Inlet posts at Kenai and Tyonek. Another option was to sail directly to Kodiak, the first capital and major port for Russian America, which was still an important port and key stop en route to the new capital at Sitka from Okhotsk. Trappers in debt to the company at one redoubt could avoid repayment by choosing to trade at different posts or through intermediaries. As beaver peltry became more important to the business of fur trading, the Russians sought to intensify trade with the people of the Interior.

Contact with Russian and Creole traders brought Russian Orthodox indoctrination, education, medical care, and other positive and negative by-products of contact (Black, 2004; Fortuine, 1992; Sarafian, 1970; VanStone, 1967). The effects of Russian contact included the conversion of many people to Russian Orthodoxy; the introduction of Native people to schools, medicine, and networks of international trade; and a new system of social hierarchy based on achievement and education in new skill sets and wealth accumulation. In 1838, an epidemic of smallpox spread rapidly throughout the region and caused significant mortality in the Native communities, which had not yet been exposed to that and several other diseases (Fortuine, 1992). Ongoing epidemic and endemic diseases kept the Native population below what it had been at contact, and each successive epidemic disease caused significant population loss and subsequent cultural and social disruption (Fortuine, 1992). Russian and Siberian employees married to Native wives had children, called “Creoles” by the company, who had a special status in the colonial charter and were entitled to education and other benefits, and became the most important class of people in the colony for their facility in managing the fur trade (Black, 2004). Descendents of this important group are present in the Iliamna area as evidenced by the many residents with traditional Russian names (e.g. Agafia, Nicholai, Ivan) and patronymics as signified by “ov” or “off” endings (e.g., Rickteroff, Pavloff, Ivanoff). Native people were considered subjects of the Russian Empire, which gave them certain rights, and the Russian government further subdivided Natives into three categories: wild, settled, and independent of the company (Black, 2004).

Figure 22-18 is a map detail from a chart published in Russia in 1844 showing the increase in knowledge of and mapping effort put into southwest Alaska by the Russian America Company. This effort was in response to the growing demand for beaver pelts. Compared to Figure 22-17, this map demonstrates much more precise knowledge of inland areas such as the Wood-Tikchik lakes area, the Nushagak-Holitna portage to the Kuskokwim River, and the portages over the Alaska Peninsula from the Pacific side to the Bristol Bay side via the lake and river systems draining north.

National and international conflicts in Europe and America, together with the limited profitability of the fur trade in Alaska for the Russian American Company resulted in increased calls to sell Russian America. Beaver peltry continued to serve as the main economic engine for the region’s indigenous people through the sale of Russian America to the United States in 1867. Russia was concerned that its holdings would be taken by conquest by Britain, would be subject to legal claims of ownership, or would be overrun by people looking for gold deposits, events which were taking place along the Pacific coast at the time (Black, 2004). Commercial whalers based in Hawaii were passing through the Aleutians beginning in 1841 and invading the Bering, Chukchi, and Beaufort seas, and the Russian government had no ability to stop them. American and British colonialism in the Pacific had already established a solidified hold on Hong Kong (1841), California (1849), Japan (1853), and western and northwestern Canada (1843 and 1847 respectively). Attempts were made by the Russian American Company to add

businesses, such as coal and mineral mining, brick making, boat building, sales of cut ice to San Francisco, whaling, and other side ventures, to the company's pursuits, but these attempts met with little success (Gibson, 1976). Company directors made overtures to United States political and business interests to sell the territory to the United States and the fur and trading company to private interests in order to prevent the colony from being taken by force. After the interference of the Civil War (1861 through 1865), the United States purchased the colony in 1867 (Black, 2004). The Russian American Company fur-trade posts were purchased by what became a de facto American monopoly, the Hutchison-Kohl Company of San Francisco. Colonial and international trade in beaver and other pelts continued at varying levels of activity based on prices and fashion trends (VanStone, 1967).

The American Period

The sale of Russian America to the United States and the concurrent sale of Russian America Company assets to the Hutchison-Kohl Company, later known as the Alaska Commercial Company (ACC), marked the beginning of a new era of trade and management in Alaska. The United States administered the Alaska Territory through the Army, the Navy, and finally through the U.S. Revenue Service of the Department of the Treasury. The Army ejected the Hudson Bay Company at Fort Yukon and occupied camps in Kodiak and Sitka. The Navy dealt forcefully with Native tribes in southeast Alaska and began efforts to locate tidewater coal for its ships. The Revenue Service operated several ships that traveled to the farthest reaches of Alaska's coast and waterways and became the public face of the federal government in Alaska. The first new economic development in the Iliamna region was the turnover to the ACC, subsequent expansion of fur-trading posts, and aggressive pursuit of fur-trade opportunities. Other economic development included the establishment of commercial salmon fishing, and salting and canning plants on the Nushagak and Kvichak rivers (VanStone, 1967). Following the gold rush to the Klondike in the 1890s, gold prospectors traveled along the rivers of the region, often supporting their prospecting with fur trapping. Prospectors discovered gold on the Mulchatna and Koktuli rivers, and prospects for other minerals were undertaken soon after (USGS, 2004). Beginning in the late 1880s, private and government parties undertook exploration that continues today in the case of mineral exploration (Unrau, 1994).

Exploration during the American period retraced the paths of Russian fur traders along the portages and pathways to the interior from the coast (Unrau, 1994). A group sponsored by Frank Leslie's Illustrated Newspaper undertook a winter expedition by snowshoe and dogsled from the Nushagak into the Iliamna region in 1890 and 1891. The group included John Clark, manager of the ACC post at Nushagak and later at Clark's Point, who traveled up the Nushagak and the Mulchatna rivers, then through the Koktuli River to the Chulitna River. A.B. Schanz, the expedition leader, named Lake Clark, formerly Kijik Lake, after John Clark (Ellanna and Balluta, 1992; Unrau, 1994; VanStone, 1967).

Other parties explored the Upper Nushagak, Mulchatna, Koktuli, and Stuyahok rivers looking for gold. These explorations first took place in 1887/1888 through 1912, when a minor gold rush took place on the upper Mulchatna River at Bonanza Creek (VanStone, 1967). Other activity occurred on the Stony River, where prospectors and fur trappers married into Dena'ina villages such as Qeghnilen and Lime Village (Ellanna and Balluta, 1992). Guided hunters entering the country by way of steamships that stopped at the ACC post on Iliamna Bay traversed the portage trail to access the greater Iliamna basin (Branson, 1997; Unrau, 1994). Aleš Hrdlička, a physical anthropologist, visited the area in 1931, traveling up the Nushagak and Mulchatna rivers then back down to the coast. He then traveled around the coast, up the Kvichak River, and across Iliamna Lake to the portage, leaving by steamship from Iliamna Bay (Hrdlička,

1943). Hrdlička recovered human remains from buried and unburied contexts and measured living Native people to establish details of their health and skeletal anatomy.

Most commercial fishing and fish packing took place downstream from Iliamna Lake on the Kvichak River and downstream on the Nushagak River, as Native workers from the Iliamna area traveled to Bristol Bay for seasonal work in commercial fisheries (Branson, 1999; Ellanna and Balluta, 1992; VanStone, 1967). Canneries were in place and operational by 1894, but were operated primarily by outside workers and management and made relatively little use of Alaska Native workers (Ellanna and Balluta, 1992; Moser, 1902; Unrau, 1994; VanStone, 1967). Non-local employees included Norwegian, Filipino, Japanese, Chinese, and Italian workers who seasonally arrived with ships from Seattle and San Francisco to fish for and to clean and pack salmon for the cannery companies. Labor shortages during World War II allowed Alaska Native people more fishing jobs, and Alaska Native participation in fishing and processing peaked after slowly increasing through the 1930s. The Koggiung (Libbyville) cannery on the Kvichak River was operating with an entirely Native crew in 1947 (Unrau, 1994).

Reindeer herding was practiced for nearly 40 years around Iliamna Lake, but it does not appear to have been a commercial success (VanStone, 1967). Sponsored by the Bureau of Education under the direction of Sheldon Jackson, reindeer herding was intended to provide a modern way of life for Native people. The goal of the program was to pay the herders in stock until they could become independent reindeer herders, creating self-sustaining employment and a marketable product for Native people to use as an introduction into the commercial economy. The first herd was sent south from Bethel in 1904 and was to proceed east to the Copper River area to support a school there (Unrau, 1994; VanStone, 1967). Hedley E. Redmyer, a Norwegian Saami, could not find a route that would allow the herd to travel there and he received permission from Sheldon Jackson to relocate to Kokhanok in 1905. In 1909, the reindeer were herded to Koggiung on the Kvichak River because it was a better environment with more reindeer browse (Unrau, 1994). The number of reindeer in the Iliamna district increased to 9,000 in 1920 and 14,000 in 1923 and was divided between herds at Kulukak Bay, Wood River, Kvichak River, Egegik River, Ugashik River, and Iliamna Lake. After reorganization in 1930, more than 9,000 reindeer were kept at Ugashik, Togiak, Kulukak, Koggiung, and Kanakanak. Schoolteachers were in charge of accounting and herd management, as recounted for Kulukak in 1931 through 1933 by teacher Abbie Morgan Madenwald (1992). A herd managed from Newhalen numbered over 1,000 reindeer in 1936, shortly before reindeer herding ended. The animals from this herd were moved frequently because of shortages of browse. The practice of reindeer herding ended by 1940 because of poor range conditions resulting from overgrazing, effects to the wild caribou populations, better wages in the Bristol Bay fisheries, the decreased market for reindeer meat because of the Depression, and troubles with marketing and transporting the meat to other areas (Unrau, 1994).

Based on the review of available literature and cultural resource databases, as well as on surveys conducted in the claim boundary area in 2004 through 2008, none of the historic period activities noted above left traces in the claim boundary area. However, it is likely that subsistence activities and reindeer herding took place in this area; these activities simply did not leave physical remains sufficient for discovery by the study team. Evidence of modern subsistence hunting was documented during surveys in the claim boundary area, for example, caribou skulls with antlers intact and placed with the noses of the animals pointing towards Nondalton were found during the 2006 survey. This tradition may be based on a belief that harvested animals will return if they are treated appropriately and that pointing the skull

towards the hunters' community will direct the reborn animals there (Ellanna and Balluta, 1992). Other evidence of modern use is discussed in Section 22.7.

Known historic resources in the vicinity of the mine and transportation-corridor study areas are few. There are 37 historic sites documented in the mine and transportation-corridor study areas (Table 22-2). As noted previously, seven additional sites have both prehistoric and historic components, and four sites do not have assigned prehistoric or historic designations. The historic Russian Orthodox churches in Pedro Bay and Nondalton (ILI-00022 and ILI-00023, respectively) are listed on the NRHP (Table 22-2). Other sites of historic importance in the area are Russian Point (ILI-00003), Chekok (ILI-00006), Old Iliamna (ILI-00010), Newhalen Russian Orthodox churches (ILI-00024), Severson's Roadhouse (ILI-00040), the Federal Aviation Administration (FAA) buildings in Iliamna (ILI-00108 through ILI-00117), Iliamna River Bridge (ILI-00131), and the Williamsport to Pile Bay Road (ILI-00132). Historic sites documented during the 2004 through 2008 surveys of the claim boundary area include five campsites with tent rings and fire rings around Big Wiggly Lake (ILI-00213 through ILI-00217) and one site containing a rusted metal can and metal wires (ILI-00220).

22.7.1.5 Alaska Heritage Resources Survey Sites

Based on information from the AHRS, 85 documented cultural resource sites are located in the mine and transportation-corridor study areas (Table 22-2 and Figure 22-19). Of these 85 documented sites, two are listed on the NRHP, five have been determined eligible for the NRHP, 17 have been determined not eligible for the NRHP, and the remaining 61 have had no determinations of eligibility for the NRHP.

The two sites that are listed on the NRHP are Russian Orthodox churches: St. Nicholas Chapel in Pedro Bay (ILI-00022) and St. Nicholas Chapel in Nondalton (ILI-00023).

The five sites that are eligible for the NRHP are as follows:

- Fish Camp (ILI-00018), a prehistoric and historic summer fish-camp site.
- Iliamna River Site Complex (ILI-00046), a prehistoric and historic site.
- Site 9 (ILI-00049), a prehistoric site with cache pits and multi-room house pits.
- Iliamna River Bridge (ILI-00131).
- The Williamsport to Pile Bay Road (ILI-00132).

The 17 sites determined not eligible for the NRHP include the following:

- Russian Point (ILI-00003), an historic (AD 1800-1851) site with house pits.
- Japanese Point (ILI-00028), a prehistoric, protohistoric, and historic site.
- Stonehouse Cave (ILI-00037), a rock shelter used historically and recently by local hunters.
- Transfiguration of Our Lord Chapel (ILI-00024)
- Leon Bay Cabin Site (ILI-00076), an historic site with cabin remains.
- Various buildings associated with the Iliamna Civil Aeronautics Association, now FAA, facility (ILI-00108 through ILI-00117 inclusive).

- ILI-00135, a prehistoric and historic site.
- XLC-00096, a prehistoric house site

Cultural resources identified in the claim boundary area by the study team during 2005 through 2008 field surveys are 11 cultural resource sites (ILI-00193, ILI-00194, ILI-00203, ILI-00204, ILI-00212, ILI-00213, ILI-00214, ILI-00215, ILI-00216, ILI-00217,and ILI-00220) and nine isolated lithic find sites (ILI-00196, ILI-00201, ILI-00202, ILI-00205, ILI-00207, ILI-00208, ILI-00209, ILI-00218, ILI-00219).

Numerous cultural resources, including the Williamsport to Pile Bay Road (ILI-00132), are located north and east of Iliamna Lake, and some are in the immediate vicinity of the possible transportation corridor.

22.7.1.6 Place Names

Background

The mine and transportation-corridor study areas are mostly in Dena'ina Athabascan-speaking territory (Figure 22-16). Also within the study areas, as well as to the west and south, are Yup'ik speakers. The majority of place names in the study areas are either EuroAmerican or Dena'ina. Anglicized Dena'ina names also occur, for example, Newhalen, from the Dena'ina *Noghilen*; the numerous lake names that reflect one of the Dena'ina words for lake—*vena* or *buna*; or names of rivers and streams that reflect the Dena'ina *tnu,* for streams. Alutiiq-speaking peoples formerly lived in the region, but were forced out during conflicts with the Inland Dena'ina, who commemorated the milestones of this conflict in place names like *Ułcha Tsaye,* or Alutiiq Cliff, on Sugarloaf Mountain near Iniskin Bay in Cook Inlet, and *Ułcha Dghil'u*, or Alutiiq Mountain, which is the Dena'ina name for Roadhouse Mountain (Kari and Kari, 1982). The relatively recent arrival of Yup'ik speakers in this contested area has limited their effect on the mapped names and folk toponymy of the region, except along the south shore of Iliamna Lake and on the Kvichak River where it exits Iliamna Lake, called *Igiugig* for how the area resembles a throat to Yup'ik speakers. The outlet of Lake Clark is also called *Igiugig*. Newhalen is an Anglicized Dena'ina name for a contemporary Yup'ik community; the archaeological remains of square Dena'ina house pits and round Yup'ik house pits exist side by side in the tundra beyond the community, showing the time depth of this transitional zone (Newhalen Tribal Council, 1997; Townsend, 1968a, 1968b).

According to James Kari (2000), when one compares place names among Athabascan languages in Alaska and northern Canada, there are common themes and patterns, which include the following:

- The territories of northern Athabascan bands were large, averaging about 3,000 to 5,000 square miles. Active men typically knew the territories of two to three bands fairly well.
- Athabascan place names occur in place-name networks, where names with similar structural and semantic properties are interlinked from language area to language area across huge and continuous bioregions.
- Most Athabascan place names are analyzable and have clear meanings. The names are naturalistic images of the landscape and resources or of prehistoric cultural values. Athabascans almost never name places after people.

- Athabascan place names function as signs on a mental map and are vital for orientation in the large territories used. There are numerous rule-driven features of the names that facilitate memorization.
- The oral transmission of the names is a conservative tradition. Usually the earliest recordings of Athabascan place names are known by the expert speakers of an area.

In addition, James Kari (2000) reported the following:

- In generic toponymic terms, the morphemes for stream, mountain, lake, etc. that appear regularly in place names are concepts by which Athabascans classify the landscape. The generic toponymic terms are quite similar across the Athabascan language boundaries.
- To facilitate memorization, there is an economy of naming that emphasizes the master stream-drainage system and the clustering of names around prominent features. There is some local and distant reduplication in names (reduplication is a linguistic process in which a word root or stem, or a portion thereof, is repeated).
- There are boundary-marking generic terms (for "stream" and "mountain") and some overt boundary-marking place names.
- The widely known names for other Athabascan and Native peoples (ethnonyms), such as "headwaters people," "the dwellers of the lakes," "the downriver people," "the dwellers of the uplands," and "the dwellers of the mountains," reflect extraterritorial awareness on the regional and even the continental scale.

So Athabascan, including Dena'ina, place names are logical, functional, and readily memorized. Athabascans have a geographic-names system that is based on conventions for memorizing and transmitting the names, the many patterns of the structure, and the typical distribution of names (J. Kari, 2006). Names often occur in clusters, such as a hill/mountain, stream/river, and lake that have the same referent with the generic stem for mountain, stream, or lake. In addition, Athabascan place names were designed to be "coarse-grained" to facilitate memorization and functional orientation; in other words, one place name can encompass several local places, use areas, or sites. Different site types that often have place names include large areas such as the Southern Alaska Range (*Dzeł Ken*), those for long-term use and settlement areas that are steeped in lore and are revered as important or sacred, those associated with legends (*sukdu*), those that seem to be of elevated importance based on the striking nature of the place name, places of graves or cemeteries, and votive places that evoke ritual activity. According to Ellanna and Balluta (1992), the discussion of place names, both English and Dena'ina, highlights the view that "official" place names, such as those reported by the USGS, often disregard the names given to places by indigenous occupants. Dena'ina place names offer a wealth of information about Dena'ina culture, oral tradition, history, ethnogeography, and ideology.

Place-name data often contain valuable information about the history of peoples in an area. For example, as already noted, *Noghilen* is the Dena'ina name for the now-Yup'ik village of Newhalen. This and other clues indicate details about changes in the ownership and occupation of various places over the history of interaction between Dena'ina and Yup'ik peoples. Historic and culturally significant events may be encoded into place names, such as the names for places where Dena'ina and Alutiiq people fought battles or went for trade. Dutna Lake, for example, was a lake where the Dena'ina often met Yup'ik fur trappers. "Dutna" is the Dena'ina name for the Yup'ik people. Likewise, Indian Point was a location where

Dena'ina and Yup'ik trappers and their families would camp as they waited for the ice on Lake Clark to break up, allowing them to travel down the Newhalen River to their homes. Place names may be shared between groups or there may be different names—e.g., Dena'ina, English, Russian, and Yup'ik—for a single place. Dena'ina place names do not change over time, and many place names are now untranslatable because the old names are retained even when new significances are added to them. Place names may be further individualized based on perceived ownership or the experiences people have had with certain areas. These individualized names are the most tenuous, because the meanings behind them disappear rapidly, and sometimes the meanings of the names must be reconstructed through linguistic inference or risk being lost for all time (Kari and Kari, 1982).

Place Names in the Study Areas

Based on existing published sources, researchers found 950 place names in the Bristol Bay and Cook Inlet drainages (Appendix 22A), 808 of which have locational data. These 808 place names are associated with locations throughout the Bristol Bay drainages and along the western shore of Cook Inlet, with higher incidences along the shore of eastern Iliamna Lake, around and north of Lake Clark, and in western Cook Inlet (Figure 22-20).

Sixteen place names are associated with locations in the mine study area (Figure 22-21) and 103 place names are associated with locations in the transportation-corridor study area (Figure 22-22). Place names in the study areas are either English, Dena'ina, or Yup'ik in origin. The 16 place names in the mine study area are primarily Dena'ina in origin—such as the Nikabuna Lakes—or Yup'ik in origin—such as Koktuli River (Figure 22-21 and Table 22-3). Place names in the transportation-corridor study area are more numerous (Figure 22-22 and Table 22-3) and are primarily Dena'ina in origin. They are especially frequent around Sixmile Lake and Lake Clark, and along the northeastern shore of Iliamna Lake. Few place names are associated with locations in the immediate vicinity of the Pebble Deposit (Figure 22-21); however, the collection of place-name data is ongoing, and more place names for this area may be uncovered.

22.7.2 2004 Field Season

No artifacts or archaeological or historic sites were located during the 2004 field season. (The only "artifact" found was a reproduction of an Eastern Woodlands arrowhead made by former archaeologist Don Quillman [pers. comm., 2004] from heat-treated Missouri chert.) The results of the 2004 field season were surprising in the lack of cultural resource finds; field crews had expected to find cultural resources because the area seemed similar to other areas in Alaska that contain archaeological sites, for example, Anaktuvuk Pass in the central Brooks Range (Rausch, 1988), the Matanuska Valley (Reger and Bacon, 1996; Robinson, West, and Reger, 1996), and central Alaska (West, 1996). Holocene archaeological sites from cultures following the Late Wisconsin glaciation of the study areas could have survived subsequent environmental and climactic changes if soil was present to bury them.

The post-glacial environment of the study areas is characterized by strong, channeled winds blowing across recently deglaciated rocky surfaces, with finer particles deposited in windbreaks. On the surface are frost-degraded stones and hardy lichens and moss, with small pockets of grasses or woody shrubs in places where fine soils have accumulated. In the valley bottoms and along some of the slopes are perched lakes where runoff from snowmelt is caught for some time in small pond basins where cotton grass and

other wetland species may grow. Stream channels have relatively dense thickets of willow, alder, and grasses, with cottonwood trees and occasional spruce trees sheltered by the stream-channel gullies and nurtured by soil deposition and annual nutrient deposits from spawning salmon. With little or no soil deposition or formation to cover artifacts over most of the area, any artifacts would likely remain on the surface where they would be subject to damage, dispersion, and destruction.

It is possible that the area may not have been used by Native people in the recent or distant past. An emphasis on salmon as the core of subsistence and the difficulty of travel into the high country could account for the lack of sites and artifacts. Prehistoric people may have used the area infrequently, or their use may have been so extensive geographically that no one area was used often and intensively enough to create an archaeological deposit. Coupled with this would be the Athabascan notion of a "clean camp," wherein discarded materials are disposed of in a fashion that leaves very little material behind (K. Workman, 1996). It may also be that prehistoric people left archaeological deposits which were destroyed or dispersed by natural processes.

The people of southwest Alaska based their subsistence activities on the wide availability of sufficient salmon at predictable locations and on being able to store the fish for deferred consumption through drying, freezing, fermenting, pickling, salting, and/or packing in oil or fat (Osgood, 1966; J. VanStone, 1967; Zagoskin, 1967). The reliance on salmon, supplemented by other fish, birds, and mammals, may have minimized the need for people to travel far into interior areas to hunt for moose and caribou. Ease of travel on and hunting from the water using boats would make residing, traveling, and hunting along lakes, rivers, and streams preferable to having to travel overland by foot. Historically, the lowlands along the lakes, rivers, and streams have been productive habitat for caribou and bears. This model for residence and land use is somewhat supported by the disposition of known archaeological and historical sites in these areas, although this pattern may be due to the locations where most cultural resource investigations have occurred.

Although known finds of surface artifacts in the lowlands between the Newhalen River and the mountains to the east support the adequacy of the survey method for finding cultural resources (M. Yarborough, 1994, 1986a), it must be noted that the absence of evidence is not evidence of absence. Other factors may better explain the apparent lack of finds.

Infrequent use of the area or use dispersed over a wide area over time would not create a large, sealed, stratified deposit. The vicinity of the Pebble Deposit is poorly suited for long-term human occupation in some important ways. The availability of fresh water is an issue in snow-free months because the rock rubble underlying the area does not retain water well, and local streams and lakes may be dry by mid-July in some years (Knight Piésold Ltd., 2004; WMC, 2004). There is little protection from wind and weather in the treeless tundra of the Bristol Bay drainages study areas. Drive lines and caribou fences used to harvest caribou may not have been permanent, suitable to the terrain, or considered necessary if resources other then caribou were preferred, easier to get, and/or more plentiful. Moose habitat tends to be along streams where cover and browse are available. Subsistence resources such as furbearers, berries, bears, grayling, and trout all were available in the river and lake environments where people most likely lived.

Historically, preferred routes to the uplands did not go through the mine study area. For example, preferred routes included the Chulitna River—west of Lake Clark—as a route to Nikabuna Lakes, traveling from the Chulitna River to Tutna and Whitefish lakes en route to the upper Mulchatna River, and going from upper Lake Clark overland to Telaquana Lake and further to communities on the Upper

Mulchatna River and Stony River. However, before the deglaciation of the lakes and lowlands of the Iliamna Lake-Lake Clark area, the mine study area may have been suitable for glacier-margin hunting of large fauna, possibly including mammoth, mastodon, bison, and the like in the earliest time following the retreat of glaciers at the end of the Late Wisconsin period (West, 1996).

It has been suggested that, more recently, for the Dena'ina, preferential ordered waste disposal emerged as a cultural value, which practice would further limit the formation of recognizable archaeological deposits (K. Workman, 1996). A similar constraint on the formation of archaeological deposits could be that traveling light in the uplands for prehistoric hunters meant they brought little or nothing in the way of stone tools that would provide evidence of human use.

Subsurface testing in 2004 consisted of 58 test units (Table 22-4), with 53 test units located in the immediate vicinity of the Pebble Deposit, two near Frying Pan Lake, and three in the valley south of Kaskanak Mountain (Figure 22-2). Photos 22-21, 22-22, 22-23, and 22-83 show typical test units excavated during the 2004 field season. In general, relatively thin soils appear to overlay poorly sorted round cobbles and gravels with little stratification, especially in the upland areas. Stratification was noted in some locations, for example in the test unit depicted in Photo 22-84, where light gray band in the two visible pit walls may indicate the presence of volcanic ash. Future research may benefit from sampling of these possible ash layers and submitting the samples for geochemical analysis to find out if they correspond to ash falls of known age, particularly if cultural resources are found. Tephras (fine materials ejected from volcanoes and transported through the air) may be used to provide reference dates for archaeological sites based on relative stratigraphic position and are particularly useful for narrowing down the possible date ranges for sites with no datable carbon or organic material.

Soil disturbance caused by freezing and thawing (cryoturbation) and animal activities (faunalturbation) is prominently in evidence in the study areas (Detterman and Reed, 1973, 1980; Detterman, Reed, and Rubin, 1965; Wood and Johnson, 1978). Arctic ground-squirrel burrows are ubiquitous in every area surveyed, and the disturbance caused by predators (bears, wolves, and foxes) that prey on these animals includes burrows that have been dug out entirely (Photo 22-39). Floralturbation—disturbance caused by plant roots—is present, but is a relatively minor contributor to soil disturbance. Strong winds have been previously noted and may, in combination with other processes, disperse patterned deposits of cultural material.

Evidence of and types of cryoturbation in the survey areas include the following (Wood and Johnson, 1978):

- *Patterned ground* refers to the geometric patterns (including polygons with raised outlines of grasses, sedges, mosses, or dwarf shrub vegetation) created in repeatedly frozen organic silts.
- *Patterned rock* formations, with polygons generated from angular blocky cobbles by freeze and thaw processes, were observed on Koktuli Mountain. Frost sorting of rocks is a similar phenomena.
- *Frost boils* are locations where soils saturated with water under pressure burst through frozen surface layers, pushing soil and rock out into a surface mound. Animal burrows that flood during a spring thaw may exaggerate the regular boil-formation process or the flooding itself may deposit soil from underground on the surface (Photo 22-43).

- *Artesian geysers* are created when meltwater trapped in permeable soil between two frozen layers on a slope travels downslope at increasing pressure to be released at a weak point, bursting out under high pressure and washing away finer soils while leaving behind large sorted rocks with little matrix. Evidence of this process can be found southeast of the Pebble field supply camp near the lakes, where the patterned-ground vegetation, consisting of rings or polygons of woody shrubs, surround unvegetated deposits of boulders and cobbles where the matrix of silt and sand normally found in the interstices of the larger rocks has been washed away by the action of liquid water under pressure between converging ice fronts.
- *Solifluction* and *gelifluction* are processes where water-saturated soils in perennially or permanently frozen ground become mobile, either sliding down slopes or oozing between frost fronts and other subsurface impediments. Solifluction is driven by gravity, which moves soil down a slope by the action of water-saturated soils moving over impermeable subsoil or bedrock. Gelifluction is also a gravity driven mass-wasting or moving process found in periglacial environments and which depends on the soil being gelatinous when water saturated rather than waterlogged. One example of solifluction is the visible waves sliding down the bedrock-cored mountains of the mine study area (Photo 22-85). As the soil creeps down a slope, the top of the slope is left bare, the surface of the slope appears wavy, and the base becomes relatively steep as soil piles up (Detterman and Reed, 1973; Wood and Johnson, 1978).
- *Slumping* is caused by changes in soil cohesion and may be due to freeze and thaw cycles. It is usually seen on banks and bluffs where soil will break off in chunks and fall or, if gelid, will slide into a pile at the slope bottom.
- *Frost jacking* and *sorting* are related processes in which objects in the ground or on the surface of the ground (e.g., rocks, bone, ivory, wood) and that are longer than they are tall become oriented vertically by repeated freeze and thaw cycles, then are forced out of the ground to lay flat on the surface (Wood and Johnson, 1978). By the same set of processes, soils and rocks can be sorted by size as a frost front moves through the ground and depending on soil moisture and saturation, direction of freezing, presence of permafrost, and the size and shape of the rocks (Photo 22-33; Wood and Johnson, 1978).

Recent experiments conducted in Katmai National Park indicate that, over relatively short periods, surface deposits of lithics associated with stone tools and their manufacture can move relatively large distances (Hilton, 2002). In addition to cryoturbatory effects, wind and rain apparently have some effects on the disposition of artifacts after their deposition. Buried objects moved little after the first year, but objects on the surface that were protected from wind moved 4.7 centimeters the first year. Objects on the surface that were not protected from the wind moved an average of 18 centimeters per year (Hilton, 2002). That amount of movement would decontextualize artifacts in a relatively short time. Loss of context, if it involved an entire site, would likely render the site ineligible for the NRHP and reduce its value to archaeological research. Damage from freeze-and-thaw cracking, tumbling, and wind movement could further disturb or destroy visible artifacts, soil structures, and surface improvements, making it difficult or impossible to identify those sites subject to these processes over time (Hilton, 2002).

The focus of the 2004 surveys (Figure 22-2) was the approximate Pebble Deposit area (as defined at that time). Areas of particular interest were the ridges and benches above the deposit to the east and west (from which a group of caribou was observed in June 2004) and the elevated glacial deposits on the north side of the valley above Upper Talarik Creek, with streams and lakes feeding into that drainage. Lake and

stream shores also were of interest, because they could contain prehistoric or historic caribou-hunting sites, fishing areas, and bird-hunting areas. The streams in the valley bottom hosted numerous beaver lodges of impressive size. Photos 22-1 and 22-2 show overviews of the valley, with some solifluction lobes that support alders and willows and with interstitial areas hosting thin moss, grass, lichen, and berry plants. Photo 22-3 shows an overview from the southwest above a chain of lakes and benches, with predominantly lichens, mosses, and berries as surface mat and patches of alder and willow where wind and water have deposited soil. No artifacts or sites were located here, but one interesting piece of frost-shattered rock resembled, in passing, a semi-lunate knife or scraper (Photo 22-86). Field crews saw no signs of retouch, polish, platform preparation, or use-wear on the piece, and it appeared to refit with neighboring fragments.

During the cultural resource interviews, several respondents reported camping at the outlet of Frying Pan Lake during the period from the 1950s to the 1980s, accessing the area primarily by dog team. The area surrounding the north half of the lake includes streams, beaver ponds, and marshy ground that feed into Frying Pan Lake. Along the northwest quadrant of the lake, the shore changes to sand and sediment that appear to be seasonally pushed up by wind-driven lake-ice into a large stabilized bank. Numerous kettle lakes and outwash landforms are present in this area, which slopes moderately down to the valley bottom where the South Fork Koktuli River meanders in a wide, wooded gully. Two test units (TH-04-20 and TT-04-14) were excavated in a sandy bank on the north shore of Frying Pan Lake in places that looked like rectangular depressions, but there was no indication of cultural material in or around these features. No signs of camps were found, although it may be that the camp area was only a clearing in the willows and not an accumulation of usable and discarded material. Most respondents reported using the area for only one or two nights at a time during the winter, camping in the willows to get out of the wind. Dena'ina rules regarding keeping a clean camp may have precluded the development of a midden-type deposit. However, evidence of contemporary use, in the form of an array of discarded aluminum cans on the surface and some buried refuse dug out by scavengers, was found on the west side of the lake. Propane canisters, a plastic washtub, and other refuse of recent origin, including pistol cartridges in two calibers, were in a buried pit with some food waste that had attracted animals and had been dug out (Photo 22-87).

The valley north of Kaskanak Mountain (Figure 22-2) was surveyed on foot over two days. The ridge above the west side of the valley (Photo 22-4) was exposed to strong winds from the west during the survey. The surface of this survey area is primarily large, angular boulders and cobbles that are exposed or are covered with moss and lichen, as well as woody shrubs and trees that grow only in the lee of rock formations on the ridge where wind-deposited soils could accumulate (Photos 22-4 and 22-5). A creek with dense growth of willow and alder and some large cottonwood trees ran below the ridge at the northern end of the valley (Photo 22-6). On the eastern ridge were thin layers of moss and lichen over angular cobbles and, in some cases, just cobbles with islands of vegetation (Photo 22-8). A talus slope may have been a persistent snowfield in the past, but no artifacts or animal remains were found during the survey (Photo 22-7). Boulder fields and rock formations along the eastern valley slope and on the south end of the valley (Photos 22-8 and 22-9) could have been used prehistorically or historically as rock shelters, navigation points, caribou fences, or caches for hunting equipment and harvested food. No evidence of cached material, glyphic art, or other signs of human use were found during the survey.

The valley southeast of Kaskanak Mountain also was surveyed in 2004 (Photos 22-12 and 22-13). Test units (TH-04-21, TR-04-01, and TT-04-15) were excavated on an alluvial area that gave the impression of

some human activity and that was located at the confluence of the main stream and a side stream (Photo 22-14). The stream appeared to have a population of beavers (Photo 22-15) and could have been a winter trapping camp.

The 2004 survey area also included two areas on Koktuli Mountain, an area south of Frying Pan Lake, and one west of the Pebble Deposit (Figure 22-2). The areas on the peaks of Koktuli Mountain had virtually no soil or vegetation (Photos 22-18 and 22-19), reducing the likelihood that cultural resources, if present, would be preserved and intact. Surveys on a 1,222-foot-high hill south of the outlet of Frying Pan Lake (Photo 22-16) and on a 1,567-foot-high ridge west of the Pebble Deposit (Photo 22-17) produced no cultural resources. These areas were presumed to have high probabilities of having cultural resources because they have commanding views over the valleys of the north and south forks of the Koktuli River.

A field-crew member accompanied each of two crews that were excavating geotechnical assay pits with small backhoe-type excavators and monitored the excavation of the pits. No cultural resources were observed by the field crew during these excavations.

22.7.3 2005 Field Season

The field crews conducted surveys in the area of the ore body in April, July, and August 2005. The State Archaeologist, J. David McMahan, joined the field crew for two days of field survey in July.

The April surveys located no sites; however, through observations of the late winter landscapes, test units, and animal burrows (Photos 22-41, 22-44, and 22-88) the field crew gained insights into the geology and the natural processes that may influence the formation and preservation of potential archaeological sites in the area. These observations support the hypothesis that the formation of archaeological sites in the claim boundary area was restricted by frost-prone, water-permeable soils in conjunction with high winds and animal burrowing (Photos 22-42 and 22-43).

The July and August surveys were conducted in the areas southeast of Kaskanak Mountain and north of the South Fork Koktuli River, in the area between the Pebble Deposit and Frying Pan Lake, and in some areas in the eastern portion of the Pebble Deposit area and eastward toward Upper Talarik Creek (Figure 22-3). In an overview photograph of Kaskanak Mountain, gelid soil lobes are visible on the leftmost hill, appearing as horizontal parallel ridges on the slope (Photo 22-27). Frost sorting of relatively large stones was noted on ridge tops and in lakebeds (Photos 22-29 and 22-33). Stream banks in the valley southeast of Kaskanak Mountain gave the field crew a window into the stratigraphy in the area, adding valuable insight into local soil- and site-formation processes (Photo 22-51). The large cobbles tend to be blocky or fractured in a cubate form, which allows seasonal runoff and rain to percolate through quickly, washing finer rock particles, sand, and silt away. Some slopes and high valley bottoms in the claim boundary area, such as in the vicinity of the Pebble Deposit, host colonies of vegetation that perch on the tops of frost-sorted groups of large cobbles, leaving interstitial holes with flowing groundwater (front right of Photo 22-52). These gaps may concentrate, redistribute, and mechanically degrade lithic and organic artifacts trapped in them. One local informant stated that “Koktuli” means “always pissing,” because in the winter water spurts up through the ground and river ice under pressure, likely from water flowing between underground and surface frost fronts and gravitic pressure caused by surrounding steep and permeable mountains. Photo 22-89 shows an overview looking from near Frying Pan Lake toward Groundhog

Mountain with the deposit area in between. The field team excavated 10 test units during the 2005 surveys (Figure 22-3 and Table 22-5). No cultural resources were identified during these excavations.

The field crew located one possible artifact in the area north of the South Fork Koktuli River (AHRS Site ILI-00196). This bifacial reduction flake was unretouched and showed no use wear (Photos 22-90 and 22-91). It was found on the surface of an alluvial fan next to a streambed (Photo 22-30). Further intensive search and test excavations (Photo 22-92) found no additional flakes, stone tools, or similar gray chert source material. Nodules of deep red material were found on the slopes above the isolated find, but despite having conchoidal fracture properties, the material was too shocked (defective material prone to crumble rather than break cleanly) to create stone tools. Small quartz nodules also were found along the slope above the isolated find, but none of the nodules were large or stable enough to use to make tools.

Surveys of the ridgelines (Photos 22-28 and 22-29), stream-channel areas (Photos 22-30 and 22-31), outwash fans, and valley-bottom lakes (Photos 22-32 and 22-33) revealed a number of interesting geomorphological processes in action, including frost-patterned rock features and boulder alignments, as well as yielding the first evidences of prehistoric (ILI-00196) and modern use of the area. Other features of interest included animal habitats (including those for bear and caribou) and animal trails (Photos 22-35, 22-36, 22-39, and 22-40). However, no additional cultural resources were found.

The field crew also explored the north slope of Koktuli Mountain, the Upper Talarik Creek bottoms, and benches south of the creek. The vicinity of Upper Talarik Creek is well vegetated and has accumulated some soil (Photos 22-45 and 22-46). Photo 22-45 shows the surface runoff from a seasonal rain shower. The runoff is washing surface soil into the stream despite the dense vegetation, which includes grasses, willows, alders, cottonwoods, and fireweed. Such runoff could preclude the formation of archaeological sites where surface scatters of lithics, deposits of bone, or other organic wastes could be washed away, scattered, or mechanically crushed by tumbling in the stream. No cultural resources were identified during the survey of this area.

Modern finds identified during the July and August 2005 survey included areas used for hunting birds in the spring (as described by informants), as well as a natural and a man-made bird-hunting blind (Photos 22-93 and 22-94, respectively), with nearby scatters of shotgun shells in .410, .20, and 12 gages with bird-shot loads indicated on the cartridge bodies. These bird-hunting blinds are located on esker-like deposits of glacial till that overlook areas where streams are backed up by beaver dams or ice jams in the spring, the only time migratory birds pass through this area. Fire-pit rings were occasionally found, as were piles of caribou bone, usually with sawn pelvic bones. This evidence demonstrates a continuity of use of the area by subsistence hunters and supports the use reported by respondents in the cultural resource and subsistence interviews.

22.7.4 2006 Field Season

During the 2006 field surveys, the field crew identified two previously unidentified prehistoric archeological lithic sites with surface exposures (ILI-00193 and ILI-00194) and discovered three isolated finds of individual worked stones (ILI-00207, ILI-00208, and ILI-00209) along the South Fork Koktuli River southeast of Kaskanak Mountain (Figure 22-5). Modern subsistence-use sites were identified during surveys on Groundhog Mountain, on Kaskanak Mountain, on the Upper Talarik/North Fork Koktuli drainage divide, and on a relict river-channel bench below Sharp Mountain overlooking the South Fork

Koktuli River (Figures 22-4 through 22-6). These subsistence-use sites included a scatter of rifle cartridges on Groundhog Mountain, a stove base and rifle-cartridge scatter on Kaskanak Mountain (Subsistence Site 1), a broken teacup in the North Fork Koktuli/Upper Talarik drainage divide, and a sizable campsite on the South Fork Koktuli River (Subsistence Site 2). With the exception of ILI-00193 and ILI-00194 and the isolated lithic finds, features identified during the 2006 survey were modern in age. In addition, with the exception of Subsistence Sites 1 and 2, the modern features were isolated finds. The isolated subsistence sites represent the use of hilltop areas to harvest caribou that take refuge there from insects in the summer and, in other seasons, may eat mosses and lichens exposed by strong winds blowing the snow away. While these modern, isolated features are depicted on Figures 22-4 through 22-6 and Figure 22-8, they are not discussed in the text in detail because they are not likely eligible for the NRHP based on their age and isolated nature.

During the 2006 surveys, field crews excavated 14 test units where warranted in the judgment of the field supervisor in areas where silt, sand, and gravel soils had accumulated (Figures 22-4, 22-5, and 22-7). Test units frequently revealed little sediment, and most consisted of exposed angular cobbles of frost-damaged, glacier-deposited, and fluvially reworked local rock with a thin layer of hardy, low-growing vegetation on the surface (Table 22-6).

In June 2006, a field crew surveyed the area north of Frying Pan Lake from Kaskanak Mountain on the west to northeast of Upper Talarik Creek (Figure 22-4). The field crew surveyed along a survey track that stretched along the face of the moraine in the Pebble Deposit area from the Upper Talarik Creek divide southeasterly to the base of Koktuli Mountain. This survey began on the lower slopes of Groundhog Mountain and crossed the basin of the Upper Talarik Creek, which is characterized by perched lakes, gravel ridges, kettles, and other post-glacial landforms. The streambed was relatively broad and flat, with incised, braided channels and vegetation consisting of cottonwoods, alders, willows, grass, and fireweed. The streambed and cutbanks were examined for signs of camps or prehistoric and paleontological materials, but field crews found none. Test units TH-06-01, TH-06-02, TS-06-01, and TS-06-02 revealed small accumulations of silt, but no subsurface indication of human use or occupation (Table 22-6; Photo 22-57). No cultural materials were identified on this survey. The field crew also surveyed a parallel track nearer the foot of Groundhog Mountain (Figure 22-4) in order to examine several prominent rock formations and lakes. On the surface in a caribou trail, the field crew found a fragment of a teacup, including the handle and two-thirds of the bowl with no base, transfer-printed with wild roses (Figure 22-4; Photo 22-58). After investigating the vicinity of an exposed rock outcropping (Photo 22-60), the field crew surveyed through the stream bottom, crossed Upper Talarik Creek, and continued up the moraine face.

The June 2006 survey also included an area near the summit of Kaskanak Mountain and descended the ridge, bench, and lakes complex north of Frying Pan Lake (Figure 22-4; Photo 22-61). On the ridgeline near some distinctive esker-like gravel deposits, the field crew identified a camp-stove platform made of distinctive flat rocks selected from a nearby ridge and a nearby scatter of more than twenty .223-caliber rifle cartridges (Photos 22-95 and 22-96). This area was designated Subsistence Site 1 (Figure 22-4). Farther down the slope, the field crew found cut spruce logs that had been brought up from the valley bottom (Photo 22-97). After descending to the valley floor following vegetation and landforms with moderate probability of containing cultural resources, the field crew skirted the eastern side of the area of the three lakes on the east side of the valley bottom. The lakes were found to have salmon remains surrounding them. The east side of the valley above the lakes had tussock tundra growing over alluvial

fans coming from the west side of Koktuli Mountain. Much of the flats south of the three lakes consisted of water-covered or saturated tundra with deeply incised stream channels and active and relict beaver lodges and dams.

On the last day of the June survey, the field crew traversed the west face of Koktuli Mountain from an outlet stream of Frying Pan Lake (Photo 22-64), up the slopes through alders, to a series of rock outcrops and benches or terraces that were examined for evidence of human use (Photo 22-66; Figure 22-4). The field crew continued along the slope face, with detours to examine perched lakes and alluvial fans. Field crews noted several nodules of maroon jasper or similar material that was potentially usable for lithic cores, but identified no lithic reduction debris in the area. These nodules were generally too fractured from freeze/thaw processes to use in tool manufacturing, but some judicious selection could have provided suitable material for small blades or other small tools. The field crew found no cultural resources on this survey track. The survey track ended on a moraine overlooking the Upper Talarik Creek drainage on the north and the three-lakes area to the south.

In August 2006, a field crew surveyed along the South Fork Koktuli River south of Kaskanak Mountain (Figure 22-5) and along a ridge descending from the slopes of Groundhog Mountain (Figure 22-6). The survey began along the South Fork Koktuli River on a bench above the modern channel of the river, several feet above the modern late-summer stream level. Proceeding from west to east along the stream course, the field crew observed a lithic flake (ILI-00193) on the exposed gravel surface immediately adjacent to the stream bank (Photo 22-98). The field crew briefly examined the site (as noted below, the crew returned later and discovered additional artifacts) and continued to survey along the low benches, subsequently discovering a surface scatter of lithics (ILI-00194. The artifacts at ILI-00194 consisted of 14 lithic fragments—one biface fragment and 13 primary reduction flakes—of a coarse material (Photos 22-99 and 22-100), all found on the surface of a gravel bench. More flakes may be present, but in a degraded state from exposure. The field crew collected materials from the site at the time of discovery. More intensive survey of the immediate vicinity revealed no further cultural material.

Other finds besides ILI-00193 and ILI-00194 were isolated lithics similar in material and workmanship to the artifact shown in Photos 22-101 and 22-102. These individual finds (ILI-00207, ILI-00208, and ILI-00209) were located in a large area of unvegetated or lichen-covered rocks, most of which had been frost shattered or tumbled in the deposition phase. No additional flakes or other materials were found near these bifacially worked lithics, which were not collected.

The field crew later returned to the first discovered site (ILI-00193) and collected 119 surface artifacts on the advice of the SHPO (example artifacts shown in Photos 22-103, 22-104, and 22-105). They also excavated a 20-by-20-inch test unit (TT-06-01) on the margin of the blowout (Figure 22-5; Photos 22-106 and 22-107). This test unit contained 23 in situ flakes in two arbitrary 4 inch levels: 19 flakes in the top 4 inches (example flakes shown in Photos 22-108 and 22-109) and four flakes from 4 to 8 inches below the surface (example flakes shown in Photos 22-110 and 22-111). These results suggest that more flakes may be present in their original contexts and that the site may extend beyond the blowout area (Photo 22-112). Artifacts at the site included one complete biface, five biface fragments, three possible unificial blade fragments, one used blade fragment, one used complete flake, and four used flake fragments. The remaining artifacts included 97 flakes and seven fragments of rock-shatter. Artifacts were collected and bagged, and will be placed at the University of Alaska Museum of the North repository. There is cultural

material in a soil context and there may be charcoal or other datable material in a stratified context (such as that revealed in the test pit) in areas with silt or soil deposits adjacent to the blowout.

After completing excavation of the test unit at ILI-00193, the field crew continued the pedestrian survey eastward along the South Fork Koktuli. The field crew discovered a series of grassy mounds on a relict, moss-covered gravel bar. Field crews excavated three test units (TH-06-03, TP-06-01, and TT-06-02) on the linear mounds (Figure 22-5; Table 22-6; Photo 22-113). The test units indicated that the mounds were natural, alluvial deposits with a layer of tephra, likely attributable to the 1912 Katmai eruption (Photo 22-114).

The survey proceeded along the lower banks of the South Fork Koktuli River until reaching the seasonal lakes near the 1,222-foot-high knoll south of Frying Pan Lake. With the exception of a recent piece of cut willow, rifle cartridges, and a pit (Figure 22-5), no cultural resources were identified in this area, and the landform changed from terraced river channels to broad, poorly drained flats with tussock tundra over a glacial outwash of large cobbles to boulders.

The field crew also surveyed the higher banks of an older, larger outwash feature that created a bench approximately 30 feet higher than the previously surveyed lower terrace. The crew landed at a riverside bench with some large cottonwood trees and large surface rocks (Photo 22-70). Field crews excavated test units TH-06-04, TP-06-02, and TT-06-03 along the top of the riverbank (Table 22-6; Figure 22-5). With the exception of sawn wood and a possible flake core, no cultural material was found in this area. The field crew surveyed southeast to the beginning of a series of benches or terraces below Sharp Mountain, and then proceeded east, where they discovered an extensive recent camp, Subsistence Site 2 (Figure 22-5; Photo 22-71), on the highest bench less than a mile from ILI-00193. A cut through the slope face bisected the camp and provided a less-steep ramp to the lower terrace. This area shows a combination of landforms that might concentrate and slow herds of caribou during the snowy season. Those landforms include a steep mountain face to the north, low vegetation in the stream channels and gullies that trap and sequester loose wind-blown snow, and broad wind-scoured flats with exposed browse.

Subsistence Site 2 has at least four regularly spaced sets of deadmen (anchors) buried in the tundra to tie down tents or tarps, as well as fire rings between the anchors and the bluff edge, with burnt material, plastics, tin cans, glass, and other modern materials. On the ramp itself were some aluminum, extensible tent poles; rebar spikes with survey caps on them; modified, discarded caribou antlers with tines missing; and a caribou skull pointing approximately east. A length of parachute cord with a handmade caribou-antler tent spike attached was located on the edge of the ramp. Other modern subsistence finds along the survey route after passing Subsistence Site 2 included axe- and saw-cut willows cut to uniform lengths, often with dog toothmarks and crushing, located along the riverbanks in the general vicinity of the subsistence camp.

The field crew conducted a survey on the lower slopes of the south side of Groundhog Mountain (Figure 22-6) because this area had a high probability for the discovery of cultural resources as suggested by its steep cliffs, long views, and location at a major divide between the North Fork Koktuli River and Upper Talarik Creek drainages. The field crew did not identify any prehistoric materials, but did find a scatter of Remington 7-millimeter rifle cartridges near a hidden lake (Photo 22-115) and saw several caribou in the vicinity during the survey. Interviews with local community members indicated that it is more likely that these areas were used because of their capacity to shield approaching hunters from small groups of caribou, rather than because they are favorable for the use of the mass harvest techniques used in other

places. Field crews examined areas where materials or offerings may have been left by prehistoric or historic hunters, but discovered only occasional skeletal caribou remains that appear to have been dragged up and around small hillocks by predators or scavengers. The incised channels of the lower slopes of Groundhog Mountain may have provided good locations for intercept hunting of small groups of caribou, but it does not appear that jumps or fences were used here.

In October the field crew and a representative of Iliamna Natives Limited (INL, the landowner) visited the location of the then recently constructed drilling-core storage area adjacent to the new post office in Iliamna (Figure 22-7; Photos 22-76 and 22-77). The pad area had been leveled before being topped with sand fill. The field crew believed the area had a low probability of containing archaeological materials because of its wet tussock/tundra vegetation over a very shallow water table. Bedrock juts up through the vegetation, and several areas are unvegetated pavements of glacial outwash adjacent to a shallow lake. Three test units (TH-06-05, TH-06-06, and TH-06-07) excavated in the undisturbed areas adjacent to the sand pad revealed no archaeological materials and showed very little soil or sediment accumulation (Figure 22-7; Table 22-6; Photos 22-78 and 22-79).

The field crew and a representative of INL also traveled by helicopter to the west bank of the Newhalen River (Figure 22-8; Photo 22-80), where a cultural resources site had been reported previously by an INL observer. The vicinity of the Newhalen River is considered a high-probability area for cultural resources from the prehistoric to the present. For this reason, the survey trip occurred despite poor weather and the late season. The field crew landed at a partially frozen and partially peat-filled lake, a site suggested by a previous INL observer. The GPS location given was reported by the INL observer to be part of a fish camp. Test units excavated in this vicinity filled rapidly with water from the melting mix of rain and snow running off the frozen ground; therefore, efforts to conduct subsurface testing in that location were discontinued in favor of covering more ground and perhaps locating more obvious indications of human use, such as surface depressions that might be visible through the snow. The survey team followed a route downslope from the helicopter landing area to the high western bank of the Newhalen River (Figure 22-8; Photo 22-81). Along this bank of the river is a well-indented trail along which were located three or more rectangular surface depressions similar to cache pits depicted in ethnographic sources (Photo 22-82). Proceeding northeast along the trail, the crew then investigated an area approximately 35 feet below the high bank near water level. The site showed indications of human use, including at least four rectangular surface depressions (Photos 22-116, 22-117, and 22-118), two axe-cut tree stumps, and indications of stripped limbs on trees located nearest the water on the terraced river bar. Because of the wet conditions, no test units were excavated in the surface depressions located on the high bank or on the river bar; however, the area clearly had been used at some time and, as noted above, had been reported to the field crew as part of a fish camp.

22.7.5 2007 Field Season

During the 2007 surveys in the claim boundary area, two previously undocumented stone tent rings (ILI-00203 and ILI-00204) and three isolated surface lithics (ILI-00201, ILI-00202, and ILI-00205) were identified (Table 22-2).

In June 2007, surveys were conducted at two possible locations for meteorological station near Upper Talarik Creek northeast of Koktuli Mountain and two locations on the northern side ridge of Kaskanak

Mountain (Figure 22-9). (Photo 22-119 shows an example of an existing meteorology station in another location.) No cultural resources were documented in or near the surveyed areas.

Of the two locations northeast of Koktuli Mountain, one is east of Upper Talarik Creek and the other is west of the creek on the slopes of the mountain itself (Figure 22-9). Peat deposits in frost polygons with cottongrass, crowberries, cloudberries, and grassy tussocks characterize the area of the site east of the creek (Photo 22-120). Upper Talarik Creek runs in a deep, vegetated gully between the site and the slopes of Koktuli Mountain. Two 6-by-6-inch test units (TH-07-01 and TH-07-02) were excavated with a trowel into the peat deposits, but in each case, solid ice was encountered 6 to 9 inches below the surface of the peat (Table 22-7; Photos 22-121 and 22-122). The site west of Upper Talarik Creek also is in a peat- and moss-filled clearing surrounded by willows, alders, and stunted spruce trees (Photo 22-123). One test unit (TH-07-03) was excavated there and revealed 6 inches of water-saturated peat over frozen peat (Table 22-7; Photo 22-124).

The two locations on the northwestern side ridge of Kaskanak Mountain (Figure 22-9) are at different elevations with different exposures to strong prevailing westerly winds. The farther east of the two areas is located midway up the slope, where a patchy and sparse mat of moss and vegetation clings to boulders, with little to no interstitial soil, gravel, or other material (Photos 22-125 and 22-126). It is very unlikely that archaeological deposits could form in this area, because water flows unobstructed through the boulder matrix and high winds scour the surface, leaving no accreting soil deposits to bury and protect artifacts. The other area, located further up the slope and farther west, is on the lee side of a 2,354-foot-high knob on the ridge (Figure 22-9). Some areas at this site had a slightly thicker moss and vegetation mat than at the lower site; however, immediately below the surface, the water table showed in the interstices between boulders where vegetation and soils have not accumulated (Photos 22-127 through 22-130). Runoff during spring breakup, high wind exposure, and the relative scarcity of soil make this area unlikely to have significant deposits of cultural resources. During the 2004 survey in this vicinity contemporary human use was indicated by deposits of cut caribou bone and skulls noted in an area where soil accumulation and protection from the wind allowed trees and willows to grow (SRB&A, 2005). No cultural resources were found in this area during the June 2007 survey.

Pedestrian surveys, subsurface testing, and monitoring of drilling sites and hydrological investigation sites were conducted during August 2007 along the ridge complex on northwestern side of Kaskanak Mountain (Figure 22-10). The survey began at the pass at the head of the valley in which an unnamed tributary of the North Fork Koktuli River flows north to its confluence with the North Fork Koktuli. The survey route ran across the pass and up the northwesternmost ridge of Kaskanak Mountain (Figure 22-10; Photo 22-131). Along this route the survey crew discovered several drill site “sump pits” (mechanically excavated pits approximately 8 feet wide by 20 feet long and approximately 4 to 6 feet deep used for circulating drilling mud; Photo 22-132). The soil excavated from the sump pits was examined for evidence of cultural resources.

During the course of the August survey, three test units (TH-07-07, TP-07-01, and TS-07-01) were excavated where soil accumulations appeared to be present (Table 22-7). The test units were excavated on the slope above the North Fork Koktuli tributary and revealed relatively thin soil accumulations and rapid water penetration, with rainwater runoff moving silt and clay through the cobble-rich matrix. Much of the area traversed on Kaskanak Mountain, however, consisted of exposed or thinly clad boulders with moss

coverings or areas with low-growing willows and alders that obscured a boulder surface (Photos 22-133 and 22-134).

Another survey of drilling sites began near Big Wiggly Lake in August 2007 (Figure 22-10). During this survey, the survey crew encountered a crew excavating sump pits (Photo 22-135). At the request of that crew, the survey crew monitored the excavation of sump pits and traveled between drilling sites by helicopter. After monitoring four sump-pit excavations, the survey crew continued to survey on foot, descending the lower slopes of Groundhog Mountain to a bluff overlooking the Upper Talarik Creek basin (Figure 22-10; Photo 22-136). On the slopes of Groundhog Mountain, more fine soils were present; however, monitoring of the sump-pit excavations and sidewalls for evidence of human activity became the priority for the survey crew.

Also in August 2007, the survey crew followed a route in an upland basin of the Kaskanak Mountain complex from a south-facing knob 2,224 feet in elevation, around the basin, and ending in the valley of a tributary of the South Fork Koktuli River (Figure 22-10; Photo 22-137).

The survey crew recovered three artifacts along the northwestern ridge of Kaskanak Mountain (Figure 22-10): one flake (ILI-00202) and two blade core fragments (ILI-00201 and ILI-00205) found on the surface in different locations. These artifacts had not been sorted through the thin surface vegetation into the boulders and cobbles below by frost, wind, or water action (Table 22-2; Photos 22-138 and 22-139). No other flakes, cores, or debitage were found near these lithics. Two tent rings (ILI-00203 and ILI-00204) were located on the south-facing knob of Kaskanak Mountain within approximately one hundred yards of each other (Figure 22-10; Table 22-2). These are likely Yup'ik, and the ring locations overlook valleys where, in previous years, hunting blinds, subsistence and archaeological sites, and surface finds have been located. The first rock ring (ILI-00203), near a steep precipice, was about 15 feet in diameter and was nearly buried in moss; however, it was clearly a unique formation and did not appear to be the result of freeze/thaw processes or other natural sorting. The second ring (ILI-00204) was approximately 20 feet in diameter and was located in a small gully (Photos 22-140 and 22-141) leading to a chute down a slope into a constricted valley. The end of the gully farthest from the slope terminates in a bowl, where water was percolating up through the rocks and there was a relatively profuse growth of dwarf willows suitable for firewood. The layout of the second ring superficially resembled tent rings found in high-arctic Canada, and the ring was in a geographical setting similar to areas reported by Canadian Inuit informants as favorable for siting tents (Gould and Gonzalez, 2000).

22.7.6 2008 Field Season

During the 2008 field season, the field crew examined areas proposed for drilling of further wells for hydrological monitoring and for examination of the underlying geological structure. No cultural resources were documented in areas that could be affected by these activities. Surveys of other portions of the claim boundary area revealed two isolated lithic finds (ILI-00218 and ILI-00219), one rock ring and nearby stack of rocks of possible cultural importance (ILI-00212), and five campsites around Big Wiggly Lake (ILI-00213 through ILI-00217; Table 22-2). One site containing evidence of modern use (ILI-00220) was discovered during a survey conducted to the east of Koktuli Mountain and Upper Talarik Creek.

The first round of surveys were conducted during June 2008 (late June through July 1) in a gap between previously surveyed areas in the northern part of the Pebble claim block. This gap extended from

Kaskanak Mountain on the west through a valley system to a ridge to the east (Figure 22-11). The terrain is primarily rolling tundra hills with relatively thin soils and mostly sparse vegetation interspersed with areas of denser vegetation including willows and alders, usually in sheltered locations where the wind was not so strong or persistent (Photos 22-142 through 22-146). Thirty-three test pits were excavated, none revealing any indications of human occupation, prehistoric or historic (Table 22-8; Figure 22-11). Two isolated lithics were found on the surface (ILI-00218 and ILI-00219; Photos 22-147 through 22-153). These lithic sites each consisted of an isolated surface lithic with no associated subsurface stratified deposits.

In July 2008, the field crew made a second trip to the claim boundary area. A number of sites that were scheduled to be drilled for groundwater monitoring in 2008 were examined for cultural resources. Test pits were excavated at these 13 locations (Figures 22-12 and 22-13), but no cultural materials indicating prehistoric or historic human use were found. Also in July, the field crew traversed the "J" valley in the in the southern portion of the Kaskanak Mountain complex, but was hampered by the weather and vegetation. Three test units were excavated during this survey (Photo 22-154). The crew also conducted a survey in the valley system on the west side of Koktuli Mountain and along the rocky western slopes of the mountain, but found no cultural materials (Photo22-155). An additional survey was conducted along a route connecting several proposed drill sites for hydrological investigations located in the coulee-like area east of Koktuli Mountain and Upper Talarik Creek. Several modern finds were made, including plywood (not given an AHRS number) used in constructing totes used by helicopters for slinging loads and a campsite (ILI-00220) with a tin can, a Spam-can winder key, several pieces of plastic, and a granola bar wrapper copyrighted 1985 (Photo 22-156).

The last survey in 2008 occurred during August around Big Wiggly Lake and in the portion of the claim block extending from the northernmost slopes of Kaskanak Mountain to north of the Cone (Figure 22-14). The crew circumnavigated Big Wiggly and some smaller, adjacent lakes. Finds for this area included multiple tent rings, multiple fire rings, and campsites with modern refuse (ILI-00213 through ILI-00217; Photos 22-157 through 22-171). These campsites are likely contemporary hunting camps from recreational and sport-hunting groups or from Native subsistence hunters. These are difficult to date, however, and may have been used several times after having been originally constructed.

After being dropped off by helicopter on top of the Cone, field personnel walked north to a location at the edge of the Pebble claim block overlooking the Nikabuna lakes. The field crew then turned south, ending the survey track on a glacially deposited rubble pile south of the Cone ((Figure 22-14; Photos 22-172 through 22-178). The northeast slope of the rubble pile yielded numerous greenish chert nodules, some suitable for use as lithic source material, but no definitive flakes or tool preforms (e.g., bifaces, wedges, or reduced flakes) were identified. The material is likely too fractured and delicate to serve as source material for stone tools, but perhaps some of the material would be usable as tools of convenience. The crew identified a small rock stack and a nearby rock circle on the top surface of the rubble pile (ILI-00212; Photos 22-179 and 22-180).

The survey continued at the northern edge of the claim block, to the east of the previous day's turning point, and headed south to the North Fork Koktuli River (Figure 22-14). The crew surveyed the ridges on the river's north side, ending at a rock outcropping. The field crew noted no cultural resources along this survey track. A survey track south of the river along a slope on the northern side of Kaskanak Mountain crossed several tributaries of the North Fork Koktuli River. Upon reaching the river, the crew headed east

along the ridges overlooking the river bottom. One hydrological drill site was tested and examined during this survey. Weather conditions precluded the survey team from visiting the other sites the drilling crew wanted to have surveyed. No cultural resources were noted.

22.7.7 Cultural Resources Consultation Interviews

The aggregation of data from various respondents provided a picture of historic land use because the respondents lived in the communities in the study areas and may have lived in several area communities and traveled widely in the region during their lifetime. Respondents reported various cultural resources in the Bristol Bay drainages study areas. The Pebble Deposit location is in an area noted by respondents from every community where interviews occurred as having been a place where caribou hunting, beaver and other fur trapping, fishing, and camping were important in the past. The possible transportation corridor may contain cultural resources, particularly where the route passes close to the shores of lakes and where streams are crossed.

Table 22-9 lists cultural resource features in the Bristol Bay drainages study areas that were identified by the 32 respondents to the cultural resources interviews (Table 22-1), with additional contributions from subsistence and traditional knowledge interviews. Appendix 22B lists all 1,154 cultural resource features identified in the Bristol Bay and Cook Inlet drainages by respondents to cultural resource interviews in the communities of Nondalton, Newhalen, Kokhanok, and Port Alsworth and by respondents to subsistence and traditional knowledge interviews in the communities of Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth. Figure 22-23 shows all 1,154 cultural resource features. Of these features, 565 are in the Bristol Bay drainages study areas, with 184 in the mine study area (Figures 22-24a through 22-24c) and 381 in the transportation-corridor study area (Figures 22-25a through 22-25d).

The use of individual map overlays in each interview sometimes resulted in multiple identifications of and locations for a single feature by different people, each of whom may have had different ideas about the age, use pattern, and history of a given feature. This was the case especially for camps, cabins, and old villages. Forty villages, 106 camps, and 21 cabins were identified by respondents in the mine and transportation-corridor study areas; however, this does not indicate that, for example, there are 40 unique old villages in the study areas, but rather that any particular village (e.g., Old Iliamna) may have been identified by multiple respondents who placed it, or specific aspects of it, in slightly different locations. Other types of features, some with few or no tangible remains, include battle sites, burial sites, material sources, sites of reported sightings of mythical or legendary creatures, reindeer stations, sacred places, archaeological deposits and other culturally significant sites, trading posts, trails/routes, traplines, place names, and so on.

Identified cultural resources in the immediate vicinity of the Pebbel Deposit included several trail/routes bypassing or intersecting the area and several camps south of the area (Figure 22-24a). (Because of the concentration of overlapping trails, this feature type is not numbered on Figure 22-24a.) Other identified cultural resources in the mine study area included clusters of camps, cabins, and burials near the mouths of Upper Talarik and Lower Talarik creeks, and 11 camps around Nikabuna Lakes (Figures 22-24a through 22-24c; Table 22-9). Identified cultural resources in the transportation-corridor study area included numerous camps located along the shores of several lakes and the Newhalen River, and trails or routes along or across the northeastern shore of Iliamna Lake (Figure 22-25a; Table 22-9). (Because of

the concentration of overlapping trails, this feature type is not numbered on Figure 22-25a.) Sites of historic villages also were identified on the shores of Sixmile Lake, along the Newhalen River, and on the northeastern shore of Iliamna Lake (Figure 22-25b; Table 22-9). Respondents pointed out the locations of various burials and place names in the same areas (Figure 22-25c; Table 22-9), as well as locations of observations/sightings (that is, observations or sightings of extraordinary occurrences, for example, giant fish or ghosts; Figure 22-5d; Table 22-9).

Cultural resource interviews with local residents in Nondalton, Newhalen, Kokhanok, and Port Alsworth revealed the locations of cultural resources where little or no tangible evidence remains. Informants from several communities recalled camping during the winter at Frying Pan Lake, often in the alder thickets near the outlet stream; however, rules about camp cleanliness and other historic factors prevented the formation of middens or other permanent indicators of human use. Sled dogs consumed food waste, deep snow prevented items from being trod into the soil and buried, and careful practices and the need to travel light prevented historic users from bringing things that might be lost. Items left at the site would be on the surface and would likely be dispersed in the spring by wind, water flow from snowmelt, frost action, animal foraging, and plant growth. The advent of snowmachines made camping there unnecessary except when bad weather or fatigue made it necessary. Other subsistence camps were located along the South Fork Koktuli River, which served as a natural trap for caribou seeking wind-blown snow-free areas to browse in during the winter.

Cultural resources consultations revealed a number of historic and prehistoric locations outside the Pebble claim boundary that have long-term significance to the communities. The Newhalen River and the valley between Lake Clark and Iliamna Lake were important areas for fishing, hunting, and later, reindeer herding. The mountains north of these lakes were the home of the ancestors of modern-day residents of Nondalton, Iliamna, and Pedro Bay, who still access and use what they consider traditional or family areas. The rivers, lakes, and marshes of the Mulchatna and Chulitna river basins have hosted historic winter villages and, more recently, subsistence and commercial hunting and trapping by the descendents of the residents of those villages, some of whom still return each winter to those locations and old villages. The shores of Iliamna Lake have long hosted Dena'ina and Yup'ik residents, who rested there en route to camps and cabins up the streams and rivers that are tributary to the lake. A web of relationships connects and subdivides the communities surrounding Iliamna Lake, with shared histories of conflict, cooperation, and lives lived out on the land.

22.8 Summary

In 2004, pedestrian surveys, subsurface testing, and monitoring of geotechnical excavations were performed in the claim boundary area. The vicinity of the Pebble Deposit is primarily in an upland zone with potential for archaeological and historic sites; however, no sites were identified during the 2004 surveys.

In 2005, field surveys in the claim boundary area uncovered one possible surface artifact (ILI-00196) and evidence of contemporary subsistence use.

In 2006, pedestrian surveys near the South Fork Koktuli River uncovered two prehistoric archaeological sites (ILI-00193 and ILI-00194), two isolated surface finds (bifaces), recent subsistence camp areas (Subsistence Sites 1 and 2), and other evidence of contemporary subsistence use (cut wood and bone).

ILI-00193 contained in situ buried lithics, as evidenced by one test unit on the margin of the exposed gravel surface of the site. ILI-00194 was a surface scatter consisting of coarse-grained and coarsely manufactured bifacial lithic reduction flakes and cores discovered in an area with little or no soil or surface vegetation. Field crews found evidence of contemporary subsistence use in the form of a cartridge scatter and a stove platform on Kaskanak Mountain (Subsistence Site 1) and a scatter of rifle cartridges on Groundhog Mountain. A second large subsistence camp with indications of recurrent use, Subsistence Site 2, was located on the South Fork Koktuli River on a high bench. Cartridge scatters, fireplace rings with associated saw-cut caribou bone, a stone hunting blind, and trails of dropped cut willow branches, including some with dog teethmarks, are indications of continued land use for subsistence hunting and gathering. An undatable teacup fragment was found on the surface in the Upper Talarik drainage divide. Rectangular surface depressions were discovered along the upper and lower bank of the Newhalen River near a location then being considered for a possible access bridge.

Field surveys in the claim boundary area in 2007 resulted in the discovery of two previously undocumented cultural resource sites (ILI-00203 and ILI-00204), as well as three isolated surface lithics (ILI-00201, ILI-00202, and ILI-00205). ILI-00203 and ILI-00204 are stone tent rings located within approximately one hundred yards of each other on a south-facing ridge of Kaskanak Mountain. One tent ring (ILI-00203) is located near a steep precipice, and the other (ILI-00204) is located in a gully feeding into a chute that leads to a southerly-trending drainage channel. The tent rings are likely Yup'ik in origin and are located near locations of previously documented evidence of modern subsistence activity.

In 2008, nine sites were discovered in the course of the summer survey program. Of these sites, two surface lithic finds are likely to be prehistoric (ILI-00218 and ILI-00219). One rock circle may be potentially culturally important (ILI-00212). One site (ILI-00220) was clearly dated as 1985 or later by a copyright on a granola bar wrapper tucked inside a can and a wire assemblage. Five tent rings (ILI-00213 through ILI-00217) are likely contemporary hunting camps from recreational and sport-hunting groups or from Native subsistence hunters. These are difficult to date, however, and may have been used several times after having been originally constructed.

The compilation of place name data in the Bristol Bay and Cook Inlet region resulted in the identification of 119 place names in the Bristol Bay drainages study areas and 808 place names (with associated locational data) in the Bristol Bay and Cook Inlet drainages. Cultural resources interviews, as well as subsistence and traditional knowledge interviews, in communities in the Bristol Bay and Cook Inlet drainages study areas resulted in identification of 1,154 cultural resource features in the Bristol Bay and Cook Inlet drainages, and 565 features in the Bristol Bay drainages study areas. The cultural resources consultations and the collection of place names provided additional cultural context for the area and assisted researchers in determining the possible location and manner of cultural resources in the area.

Cultural resources work for the Pebble Project has added to the base of knowledge regarding the prehistoric and historic uses of this, until now, sparsely explored area at the crossroads of the Alaska Peninsula, interior Alaska, coastal Alaska, and the lower Cook Inlet region.

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22.10 Glossary

Alluvial—soil or sediments deposited by a river or other running water.

Bioregion—an area constituting a natural ecological community with characteristic flora, fauna, and environmental conditions and bounded by natural rather than artificial borders.

Blowout—an area where the finer surface-soil components have been removed by winds blowing across a devegetated surface and leaving behind sorted particles too heavy for the wind to disperse.

Colluvial—pertaining to material transported by gravity, typically deposited and accumulated on lower slopes and/or at the base of slopes.

Conchoidal—mussel-shell- or cone-shaped fracture pattern in brittle materials such as fine-grained minerals or glass.

Cryoturbation—the mixing of soil materials as a result of freezing and thawing.

Cultural resources—prehistoric or historic districts, sites, buildings, structures, or objects.

Debitage—the by-products of reductive stone-tool production using percussion. These by-products include waste rock, tool preforms, failed tool preforms, flakes used as tools of convenience, and waste flakes.

Ecozone—an area of the earth's surface that represents a large ecological zone and has characteristic landforms and climate.

Esker—a sinuous ridge formed from sand and gravel deposited in tunnels running through a glacier.

Ethnonym—a name for an ethnic group: if the group name is self-given, it is an autonym; if given by another group, it is an exonym.

Fictive kin—kinship relationships given to biologically nonrelated persons with similar roles and stations. Aunt and uncle titles given to family friends of a person's parents' age is an example.

Fluvial—refers to the action of flowing water.

Gelifluction—slow downslope movement of soils that are in a gelatinous state as a result of freezing, moisture content, and particle shape.

Geomorphology—the study of landforms, their origin, their evolution, and the processes that shape them.

Glaciofluvial—transported by glaciers and subsequently sorted and deposited by streams flowing from the melting ice.

Holocene epoch—the epoch that covers the last 10,000 years, often referred to as Recent or post-glacial.

Hydronymic—the proper name of a body of water.

In situ—in its natural or original position.

Lacustrine—of or relating to lakes.

Lithics—of or relating to stone tools.

Loess—loosely consolidated, fine, windblown soil deposit derived from glacial processes.

Moiety—either of two kinship groups that together make up a tribe or society.

Morpheme—the smallest unit of language that has semantic meaning.

Periglacial—occurring or operating adjacent to the margin of a glacier.

Pleistocene epoch—from 1.64 million years ago to about 10,000 years ago, the first of two epochs of the Quaternary sub-era.

Proto-Dena'ina—presumed Athabascan speakers who occupied a region before the differentiation of Dena'ina from other Athabascan languages.

Semi-lunate—half-moon shaped.

Soil horizon—a layer of soil that is approximately parallel to the land surface and can be distinguished from adjacent layers by physical properties and by chemical and biological composition.

Solifluction—the slow creeping of fragmented material down a slope as a result of the alternate freezing and thawing of the water contained in the material.

Talus—rock fragments deposited by gravity at the base of a cliff or very steep slope.

Tephra—volcanic ash.

Thermokarst—a land surface formed in ice-rich permafrost as the ice melts, leaving a topography of marshy hollows and small hummocks on the ground surface.

Toponymic—of or having to do with the naming of places.

Undertaking (as defined by under the National Historic Preservation Act)—a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on the behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency (36 CFR 800.16(y)).

TABLES

TABLE 22-1
Numbers and Dates of Cultural Resources Interviews, by Community

Community	Number of Respondents	Date of Interviews
Nondalton	13	3/14/2007-3/15/2007
Newhalen	5	2/6/2007-2/7/2007
Kokhanok	13	2/8/2007
Port Alsworth	1	3/13/2007
Iliamna	0	Unsuccessful in scheduling interviews
Pedro Bay	0	Unsuccessful in scheduling interviews
Igiugig	0	Unsuccessful in scheduling interviews

TABLE 22-2
Documented Cultural Resources in the Bristol Bay Drainages Study Areas

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00001	Pedro Bay Site	Site with 5 house pits with entry tunnels and 4 cache pits on high ridge. Four of the houses have 2 unequally sized rooms connected by short tunnels. Tests produced indications of at least 2 components: an upper component (surface features) and a lower component (resembling Ocean Bay I/II materials).	Prehistoric/ Ocean Bay I, II (lower component, BC 2358 & BC 2370) Historic (upper component, AD 1750-1800)	NDE
ILI-00003	Russian Point [A062413 (BIA)]	A site with 9 house pits, 5 that were double-room construction with Dena'ina material. Tests found fire-cracked rock and mixed and sterile soils.	Historic (AD 1800-1851)	NRJ (2/5/91)
ILI-00004	Fish Village	Local name reported by USGS in 1917.	Historic	NDE
ILI-00006	Chekok (Cheekok, Chikak)	Eskimo village, now abandoned, listed in the 1880 census as "Chikak," with a population of 51. Remains include 3 house pits.	Historic	NDE
ILI-00010	Old Iliamna (Ilyamna)	Eskimo village reported by Petroff as "Ilyamna" in the 1880 Census. In ca. 1935 the residents moved to Pile Bay. Teben'kov (1852) noted an "Odinochka" (small trading post) at this location. The site consists of a church, burial ground, and 20-30 house remains.	Historic (AD 1838-1936)	NDE
ILI-00011	Slatin (Slamun House?)	Russian fur-purchasing post on Iliamna Lake.	Historic	NDE
ILI-00012	Bear Creek Site	A minimum of 12 single- or double-room house pits with entry tunnels and several cache pits located on river terraces.	Prehistoric	NDE
ILI-00013	Newhalen Upper Rapids	Site in a grassy area, with no secondary growth, situated on several terraces and approx. 100 yards long.	Prehistoric	NDE
ILI-00014	ILI-00014	Archaeological site with cultural material present.	Prehistoric	NDE
ILI-00015	ILI-00015	Archaeological site with cultural material present.	Prehistoric	NDE
ILI-00016	Newhalen Lower Rapids Site	A Russian Orthodox church (ROC; see ILI-00024) and 2 houses were located here in the late 1800s and early 1900s. At least 10 additional house pits were scattered along the 4 grassy terraces sloping down to the river. Townsend (1968) excavated 6 test pits and found late pottery in most of them. In 1 test pit, artifacts recovered suggested an earlier component.	Prehistoric/ Historic	NDE
ILI-00017	ILI-00017	Squirrel-hunting camp.	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00018	Fish Camp [AA062887A (BIA)]	Large Yup'ik summer fish camp with both prehistoric and historic components. The site was divided into 3 loci and an historic grave site of a small child who died at the fish camp. Remains at the site include several irregular depressions (tent platforms) and many small cache pits, lithic flakes, numerous small depressions and a few larger ones, and 2 grassy clearings that once contained cabins that are no longer standing.	Prehistoric/ Historic (AD 1390±60)	NRE (5/5/04)
ILI-00019	Zip Creek	Site with 3 house pits (1 a double-room house pit) on a grassy slope on the shore of the creek. Area is about 50 by 50 yards. Two other grassy areas of this hill may have sites (possibly fish camps).	Prehistoric	NDE
ILI-00020	Ephium Squirrel Village	Native village	Prehistoric	NDE
ILI-00021	Lonesome Bay Village	Former Native village in an approx. 5-acre clearing.	Prehistoric	NDE
ILI-00022	St. Nicholas Chapel, Pedro Bay (ROC)	Russian Orthodox church of hewn-log construction.	Historic (AD 1890)	NHR (6/6/80)
ILI-00023	St. Nicholas Chapel, Nondalton (ROC)	The original Russian Orthodox church was built in 1896, and this building may be a successor building constructed between then and the 1920s when this building was moved from Old Nondalton to its present location.	Historic	NHR (6/6/80)
ILI-00024	Transfiguration of Our Lord Chapel, Newhalen (ROC)	Russian Orthodox church built circa 1944-1945, the sixth church building in this often-relocated community. The structure consists of a nave and sanctuary section and an attached vestibule. Three crosses surmount the main ridge of this gable-roofed, clapboard and corrugated-metal structure.	Historic	NRJ (5/1/79)
ILI-00026	ILI-00026	A site with 2 house pits.	Historic	NDE
ILI-00027	White Rock Site	Site with 2 or 3 large, single-room house pits and 6 cache pits on a ridge above a dry marsh. The site may be contemporaneous with ILI-00003.	Historic	NDE
ILI-00028	Japanese Point [AA006080 (BIA)]	Site with 2 or 3 house pits. The site is said to be where several Japanese lived after being kicked out of Old Iliamna by the chief. Features recorded include a tent frame, outhouse, clearing, modern refuse, house pit (4 by 4 meters), and 2 cache pits. Tests revealed historic material, possibly more recent fill, and a limited protohistoric occupation under the historic component.	Prehistoric/ Historic	NRJ (2/5/91)
ILI-00029	Old Nikolai's Point	Old summer fishing camp on a grassy area.	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00030	ILI-00030	Site in a grass-covered area, opposite ILI-00016.	Prehistoric	NDE
ILI-00031	Newhalen Middle Rapids Site	This site with 4 to 5 house pits was observed by Townsend (1968b), from a plane, at the top of a single terrace, which is grass covered with no secondary forest regrowth.	Prehistoric	NDE
ILI-00032	Knutson Bay	4 to 5 single- or double-room house pits, within 1/4 mile of each other.	Historic	NDE
ILI-00033	ILI-00033	A rock shelter about 150 ft up the side of a mountain and easily visible from the water. The roof of the shelter had fallen in (circa 1940s) and no evidence of habitation was found. However, informants maintain that the shelter did have "old things" in it and was often used by hunters.	Prehistoric	NDE
ILI-00034	ILI-00034	A site with at least 10 house pits with entry tunnels and some double-room structures.	Historic	NDE
ILI-00035	Copper River Mouth	Site with artifacts resembling those of ASTt. During testing, flakes and one broken quartzite point were uncovered. The site is located on a steep, grassy, terraced slope about 100 ft wide by 200 ft deep.	Prehistoric	NDE
ILI-00037	Stonehouse Cave	A cave that has been used as a storm refuge by hunters. A test of the cave produced only very recent camping remains. The entrance may have been submerged during most of the prehistoric period. In 1992, the Bureau of Indian Affairs (BIA) surveyed the beach ridges, shoreline, and the cave and found no evidence of carbon stains, petroglyphs, or other signs of occupancy of the cave.	Historic	NRJ (11/10/92)
ILI-00040	Seversen's Roadhouse (Severn's Roadhouse)	Roadhouse with a 2-story frame building with 2 dormers. Local name published in 1923 by Alaska Road Commission (ARC) as "Severn's Roadhouse" and in 1933 by USGS as "Seversens."	Historic (AD 1920s)	NDE
ILI-00043	Iliamna Mission, Iliamna Village (ROC)	Abandoned site of a Russian Orthodox church identified on U.S. Survey No. 893 (1908). Villagers moved to Pedro Bay 1940-1941.	Historic	NDE
ILI-00046	Iliamna River Site Complex [AA007350 (BIA)]	Site complex with numerous pit depressions and/or walled dwellings. Tests produced window glass, blue-glass trade beads, and ASTt point fragments.	Prehistoric/ Historic	NRE (5/5/84)
ILI-00047	ILI-00047	A site with 6 cache pits on the shore of a salmon-spawning pond.	Prehistoric	NDE
ILI-00048	ILI-00048	A site with 3 house pits and 5 cache pits.	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00049	ILI-00049	A site with 4 large multi-room house pits and 5 cache pits. A test in the center of House 1 revealed an approx. 20-cm-thick layer of charcoal and fire-cracked rock, with some animal bone, under 9 cm of humus and 4 cm of ash.	Prehistoric	NRE (12/11/85)
ILI-00050	ILI-00050	Site with 1 house pit and 2 possible cache pits.	Prehistoric	NDE
ILI-00054	Chekok Bay [AA007150B (BIA)]	Site with features that include a plywood shed, a depression with a room on its east side and a possible cache pit within it, a house or cache pit, and a dump area. A test yielded wire nails and window-glass fragments.	Historic	NDE
ILI-00057	Hanak Site [AA006025B (BIA)]	Site with 1 to 2 house pits and several small cache pits.	Historic	NDE
ILI-00076	Leon Bay Cabin Site	Remnants of an old homestead, including cabin remains, sweat-house remains, outhouse remains, two sheds, and a wooden boat.	Historic (AD 1935)	NRJ (11/27/92)
ILI-00086	ILI-00086	Site with an isolated elongate chalcedony flake discovered in an existing all-terrain-vehicle trail. Testing and intensive survey efforts revealed no additional evidence of cultural use.	Prehistoric	NDE
ILI-00087	ILI-00087	Site with 20-25 closely spaced pit features that are circular to irregular in shape. Possible Dena'ina cache pits, used for the storage of fish.	Prehistoric/ Historic	NDE
ILI-00105	NPS using			NDE
ILI-00106	NPS using			NDE
ILI-00107	NPS using			NDE
ILI-00108	Iliamna FAA Facility (Iliamna FAA)	This facility includes 5 quarters buildings (Buildings 100-103 & 105: ILI-109 to ILI-112), a storage building (Building 200: ILI-113), 2 utility buildings (Building 300: ILI-114 and Building 600: ILI-115), an engine generator building (Building 601: ILI-116), and a flight service station building (Building 400: ILI-117). In 2001, 4 quarters buildings—ILI-00109 to ILI-00112—were sold.	Historic (AD 1940-1958)	NRJ (8/29/00)
ILI-00109	FAA Building 100, Quarters (Iliamna FAA)	Type 41 standardized 2-bedroom wood-frame house with a gable roof.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00110	FAA Building 102, Quarters (Iliamna FAA)	Type 41 standardized 2-bedroom wood-frame house with a gable roof.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00111	FAA Building 103, Quarters (Iliamna FAA)	Type 41 standardized 2-bedroom wood-frame house with a gable roof.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00112	FAA Building 105, Quarters (Iliamna FAA)	Type 41 standardized 2-bedroom wood-frame house with a gable roof.	Historic (AD 1944)	NRJ (8/29/00)

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00113	FAA Building 200, Storage Building/Shop (Iliamna FAA)	Steel "Butler" storage building/shop.	Historic (AD 1951)	NRJ (8/29/00)
ILI-00114	FAA Building 300, Utility (Iliamna FAA)	Utility building most recently used as a community services facility.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00115	FAA Building 600, Well House Building (Iliamna FAA)	Well house.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00116	FAA Building 601, Engine Generator Building (Iliamna FAA)	Building.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00117	FAA Building 400, Flight Service Station (Iliamna FAA)	Frame building that is no longer present.	Historic (AD 1944)	NRJ (8/29/00)
ILI-00123	ILI-00123	This is a small prehistoric site containing 2 round house depressions (approx 2.5 meters in diameter) and 5-6 cache pits along the terrace edge above ILI-00016 and a small drainage.	Prehistoric	NDE
ILI-00130	Pope-Vanoy Community Site and Sue Woods Reported Site	Not available		NDE
ILI-00131	Iliamna River Bridge	The Iliamna River Bridge was built circa 1937 and originally spanned the Eagle River, north of Anchorage. It was relocated to its present location on the Williamsport to Pile Bay Road in 1946.	Historic (AD 1946)	NRE (4/10/03)
ILI-00132	Williamsport to Pile Bay Road	Seasonal road that follows a traditional Den'aina Athabascan trail over the Chigmit Mountains. Originally built in the 1930s by the ARC.	Historic (circa AD 1920s to present)	NRE (9/2/03)
ILI-00133	Tazimina II	Rectangular house pit site with 3 depressions. One is interpreted as a traditional Dena'ina "birch bark house."	Prehistoric	NDE
ILI-00134	Tazimina I	Rectangular house pit site interpreted as a traditional Dena'ina "birch bark house."	Prehistoric	NDE
ILI-00135	ILI-00135 [AA062761 (BIA)]	Cache pit site	Prehistoric/ Historic	NRJ (3/15/04)
ILI-00188	LAKA (NPS using)	Lithic site	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00193	Lithic site	119 surface artifacts were collected based on the advice of the SHPO and a 20-by-20 inch (50-by-50 centimeter) test unit was excavated on the margin of the blowout. This test unit contained 22 in situ flakes in two arbitrary 10-centimeter levels including 19 flakes in the top 4 inches (10 centimeters) and 4 flakes from 4 to 8 inches (10 to 20 centimeters) below the surface. This positive result indicates that more flakes may be present in their original contexts and that the site extends beyond the blowout area. Tool types included microblades, side blades, end scrapers, and some possibly retouched flakes. Surface finds included small knives or end blades and several microblades of creamy pink and orange fine-grained chert, 2 flakes of a glassy conglomerate material, some fine-grained green stone flakes and scrapers, and some reddish glassy material, possibly jasper. There is cultural material in a soil context and there may be charcoal or other datable material in stratified context in the areas adjacent to the blowout.	Prehistoric	NDE
ILI-00194	Lithic surface scatter	A surface lithic-scatter site and several surface finds consisting of 13 lithic fragments including one biface and 12 primary reduction flakes of a coarse material, all on the surface of a gravel bench. More flakes may be present but in a degraded state because of exposure. Materials were collected at the time of discovery on August 22, 2006.	Prehistoric	NDE
ILI-00196	ILI-00196	Site consists of an isolated artifact located on an alluvial fan next to a streambed. It appears to be a biface reduction flake made of gray chert. Intensive testing of the surrounding area failed to locate further cultural material. No gray chert source material was located nearby.	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00197	O'Hara House	This rectangular, front-gabled home was 1, or perhaps 1-1/2, stories (photos show an upper story, or loft, within the roof), built in the village of Pile Bay in the early 1950s. It was built from lumber milled locally by Carl Williams, as well as from lumber collected from a house that had been demolished in the late 1940s or early 1950s. The earlier residence was built in the early 1940s by Lyle Williams, just north of where the O'Hara house is now. A depression and some scattered debris (bottles, cans) are the only remnants of the house on the property. Although there are no dimensions given on the BIA site-inventory record, the provided photos show the O'Hara house to be approximately 20 ft wide by 24 ft long. The exterior was sided with green, mineral-surfaced roll roofing over 1 by 6 shiplap. There were doors in both the north and south elevations. A window is next to the door in the south elevation, though not in the north elevation, and there is a window in both the north and south gable ends. The east and west elevations both have 2 windows. All windows seem to be 3-over-3 sashes.	Historic	NDE
ILI-00201	Isolated lithic	Depleted blade core, coarse material, surface find in burrow spoil.	Prehistoric	NDE
ILI-00202	Isolated lithic	Large flake, fine-grained basalt surface find in burrow spoil.	Prehistoric	NDE
ILI-00203	Stone tent ring	Rock ring, 15-ft diameter, partly obscured by moss.	Prehistoric	NDE
ILI-00204	Stone tent ring	Rock ring, 20-ft diameter, partly obscured by moss.	Prehistoric	NDE
ILI-00205	Isolated lithic	Coarse red material with several microblade removal scars, hinge fractures.	Prehistoric	NDE
ILI-00207	Flake Core	Riverside bench with some large cottonwood trees in the area and large surface rocks. Test units excavated along the top of the riverbank. No cultural material, with the exception of sawn wood and a possible flake core, was found in this area.	Prehistoric	NDE
ILI-00208	Possible Flakes	Several possible primary reduction flakes found on the surface. No identifiable tools located nearby, and no stratified deposits present in the area. The flakes were not collected.	Prehistoric	NDE
ILI-00209	Isolated Find	A possible bifacially reduced cobble on the surface was not collected, and no other tools were located in the vicinity.	Prehistoric	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00212	Rock Circle and Stack Site	A 3-foot-diameter circle of cobbles with a very large cobble in the center. The rocks appear to be larger and rounder than the rocks in the surrounding area, which are fractured and heavily covered with black lichen. Nearby (164 feet is a collapsed stack of stones similar to those in the circle.	Prehistoric	NDE
ILI-00213	Big Wiggly Lake Camp 1	This site includes a fire pit in low-lying lakeshore at the base of an esker. A nearby second 3-foot-diameter fire pit with rock surrounding portions of the perimeter was associated with several large mammal long bones. Behind the fire pit atop the esker was a pile of stockpiled firewood, which included willow and milled lumber. Northeast along the top of the esker was another woodpile made up of willows and scavenged wood. North of this woodpile on the shore of the lake were two rock circles: the north circle about 8 feet in diameter and the south circle about 12 feet in diameter. Associated with the rock rings were at least two wire tent pegs and a number of bone, antler, and wood (local willow) tent pegs. Nearest the lake in the shore margin tundra and sedges was a folding camp toilet consisting of a standard toilet seat and rusted folding legs.	Historic	NDE
ILI-00214	Big Wiggly Lake Camp 2	This site consists of two rock features, a deposit of rifle cartridges of two different calibers, and some antler and bone pieces. The fire ring is on a gravel outwash terrace above a lake, with a relatively steep slope to the water providing a good overview to the southwest. The fire ring is a circle nearly 3 feet in diameter with a line of rocks bisecting the circle down the center. Some burned material was visible beneath the rocks. Nearby to the southeast was an area with numerous cartridges, including .223, .338, and 7 mm magnum rounds, and a tent ring about 12 feet in diameter consisting of 5 to 8 cobbles resting on the surface of the tundra. Possible stakes made from antler and bone fragments are also nearby.	Historic	NDE
ILI-00215	Big Wiggly Lake Camp 3	The site consists of a ring of cobbles approximately 12 feet in diameter on the surface of the tundra.	Historic	NDE
ILI-00216	Big Wiggly Lake Camp 4	This site consists of a 20-foot-diameter ring of large cobbles on a flat stretch of tundra. Nearby were several sets of caribou antlers. Associated surface finds included some food wrappers, water and oil bottles, and stakes made from antler and bone.	Historic	NDE

AHRS No.	Site Name	Description	Period	NRHP Status
ILI-00217	Big Wiggly Lake Camp 5	This site is a relatively large camp, on an esker, that includes a tent ring approximately 20 feet in diameter and consisting of large cobbles. A plastic water container with bear bite marks, a kerosene can, a firewood stockpile, and a stacked pile of caribou antlers were found below the esker on a flat area of tussock tundra. Nearby on the tussock flats, a horseshoe pitch with horseshoes and rebar pins was found. A few fire pits were in tussock tundra on the flats toward the lake.	Historic	NDE
ILI-00218	Isolated Find 4	One possible microblade or blade core. The core was found on the surface of the tundra. No other lithics were found on the surface or in test pits excavated nearby.	Prehistoric	NDE
ILI-00219	Isolated Find 5	An isolated lithic find consisting of a broken blade core. No other lithics were found nearby.	Prehistoric	NDE
ILI-00220	Isolated Camp Refuse	Site consists of a cache of metal and plastic materials partially buried in the rocky flats on a plateau. Camp refuse includes a wire that appears to be part of a camp stove, a flat sardine-style can, and a plastic granola bar label copyrighted in 1985.	Historic	NDE
XLC-00096	XLC-00096	A single house depression, with entranceway, measures 3.7 meters by 3.3 meters with a depth of 0.3 meters. The entrance is 1.9 x 1.1 meters and leads to the edge of a bluff. A 50-centimeter-by-50- centimeter test pit in the northwest corner of the house depression yielded carbon staining, charcoal, and small amounts of fire-cracked rock from the 22-25 centimeter depth, which is presumably the house floor. No other evidence of cultural materials was found in the test pit. The charcoal sample proved too small for dating purposes. An indistinct depression is located 9 meters east of the house depression and is approximately 3.5 meters in circumference. It appears to have been a temporary or single-occupation site.	Prehistoric	NRJ

Notes:

AHRS = Alaska Heritage Resources Survey.

ARC = Alaska Road Commission.

ASTt = Arctic Small Tool tradition.

BIA = Bureau of Indian Affairs.

FAA = Federal Aviation Administration.

ft = foot (feet).

NDE = no determination of eligibility for the NRHP.

NHR = listed on the NRHP.

NPS = National Park Service.

NRE = determined to be eligible for the NRHP.

NRHP = National Register of Historic Places.

NRJ = rejected for NRHP eligibility.

ROC = Russian Orthodox church.

USGS = U.S. Geological Survey.

Source: OHA, 2009.

TABLE 22-3
Documented Place Names in the Bristol Bay Drainages Study Areas

The table below lists the 119 place names in the Bristol Bay drainages study areas and corresponds to Figures 22-21 (mine study area) and 22-22 (transportation-corridor study area), which show the locations associated with the place names. All place names in the Bristol Bay and Cook Inlet drainages are listed in Appendix 22A, and the locations associated with those place names, except those with no locational data, are shown on Figure 22-20.

Place Name No.	Figure That Identifies Place Name	Place Name [a]	Description/Translation [b]
11	22-22	Amiguk	Bay south of Leon Bay
20	22-21	Antone K'etnu'a	Creek from stream before Nikabuna Lake
45	22-22	Nuch'ak'dalitnu, Ch'ak'dalitnu, Iliamna Vetnu	Old Iliamna village, Iliamna River
54	22-22	Ch'alikel'u T'ech' Nini'u	Keyes Point
59	22-22	Ch'anatl'ini	Point south of Iliamna River mouth
66	22-22	Ch'dat'an T'el'iht	
70	22-22	Ch'duqitnaghilt'e	Rapids one mile above Lime Village
75	22-22	Ch'ghitali Ka'a Vetnu	
76	22-22	Ch'ghitalishla Vetnu	
77	22-22	Ch'iqi'untnu	
90	22-22	Ch'q'ayna Qudghijaq'	Mountain up Iliamna River
91	22-22	Ch'qi'un Vena	Alexie Lake
98	22-22	Ch'vala Nlin	Flat Island
114	22-22	Chayi Ch'dedlesht Kiyiq'	Chayi Point
119	22-22	Chix Kaq'	Chekok village
121	22-22	Chixtnu	Canyon Creek
124	22-22	Chu T'udilnen	Point and mountain, 2,437 feet in elevation, west of Squirrel Point
139	22-22	Deghk'isna Dghil'u	Mountain west of Nondalton
148	22-22	Dihak'ghilgha	Tommy Mountain
162	22-21	Duntsih	Iliamna Lake lowlands (Il); lowlands south of Lake Clark (l)
164	22-22	Duvunu	Pedro Mountain Peninsula
179	22-22	Eseni Qilu	
188	22-22	Bear Creek	
195	22-22	Gulul Vena	Long Lake
208	22-22	Hggezh	
209	22-22	Hggezh Vena	
225	22-22	Htiditun	Ephem's Squirrel Village
233	22-22	Hughelqet'i Ka'a	Southern tip of Keyes Point
239	22-22	Hunqet'unhtnu	Chekok Creek
240	22-22	Husuyghiqan Hni'a	Flat Island in Lake Clark
247	22-22	Igiugig	
281	22-22	K'denez Dghil'u	Mountain east of North Pickerel lake

Place Name No.	Figure That Identifies Place Name	Place Name [a]	Description/Translation [b]
282	22-22	K'denez Gguya	Mountain by Tazimna River
283	22-22	K'denez T'uh Taz'iy	First point on south shore
284	22-22	K'denez Vena	North Pickerel Lake
285	22-22	K'denez Yitughil'u	Bay point
287	22-22	K'eleh Dghil'u	Mountain west of Chekok Lake
288	22-22	K'elesh Dghil'u	
289	22-22	K'elesh Dghil'u Yich'adanilen	
290	22-22	K'elesh Vena	Chekok Lake or Moose Lake
291	22-22	K'elesh Vetna	Creek into Tazimna River
293	22-22	K'emeq' Ka'ahtnu	Eagle Bay Creek
355	22-22	Kis Vena	
367	22-22	liq'a T'el'iht	Tommy Point
368	22-22	Liq'a T'el'ihtnu	Tommy Creek
369	22-22	Liq'a Qilantnu, Liq’a T’el’ihtnu	Tommy Creek
402	22-21	Nanahaghelqeli	Hill south of Nikabuna Lakes
417	22-22	Negget Qighilnaz Ts'daz'iy	
423	22-21	Nghuyi Jech'a Q'elchini	Hill 1018 feet off Rock Creek
428	22-22	Nika'a	Porcupine Island
431	22-21	Nikugh Dghil'u	Mountain west of Nikabuna Lake
432	22-21	Nikabuna Lakes	
436	22-22	Nil'ashk'it'i, Nil'ashex'it'iy	
442	22-22	Nildink'et'a	Lake Clark outlet
443	22-22	Nildink'et'a Ch'ih Ch'anil'iy	
451	22-22	Niqanch'qentdelt	
459	22-22	Nitashk'it'i	Rapids on Pile River
460	22-22	Nitkintl'udalyuyi Vena	Dumbell Lake
466	22-22	Nli Z'untna	Second creek below Fish Village
483	22-22	Nughil Hdakaq'	Newhalen
484	22-21	Nughil Vetnu Nudghilen	Lower rapids on Newhalen River
486	22-22	Nughilqutnu	Tazimna River
487	22-22	Nughilqutnu Nudghilen	
489	22-22	Nughiltnu (II, I), Nughilen (I)	Beluga River
509	22-22	Nuvendaltun, Nundaltin	Old Nondalton village
510	22-22	Sixmile Lake	
511	22-22	Old Nondalton	
512	22-22	Nundaltinshla	Lake on Newhalen River
519	22-22	Nunuyali Dina	
526	22-22	Nusdatl'na Tsana	Island east of Porcupine Island
531	22-22	Nusuydastggey	Beach southwest of Keyes Point

Place Name No.	Figure That Identifies Place Name	Place Name [a]	Description/Translation [b]
532	22-22	Nusuydastggey Vetnu	Creek from Veghdeq Idaltin, Henmore Cache Creek
535	22-22	Nutsatnatggets'	
547	22-22	Q'aghdeg Vat'esluh Vena	
568	22-22	Qak'denghilch'ish	Mountain above Squirrel Point
569	22-22	Qak'ditl'ix	Mountain on southeast shore of Lake Clark, at head of Qenlchintnu
571	22-22	Qak'ditl'ix Vetnu	First creek on south shore of Lake Clark
577	22-21	Rock Creek	
581	22-22	Qanintin	Mountain north of Pedro Bay
582	22-22	Qanintin Vena	Lake at head of Pile Bay
597	22-22	Qeghduch'en Eseni Qilu	
598	22-22	Qeghkuht	South of Iliamna River mouth
601	22-22	Qeghqidun	Big Chutes
633	22-21	Qiyhi Qelahi, Qiyhi Dghil'u	Groundhog Mountain
642	22-21	Qukdeli	Koktuli River, or Koktalee, or Kaktul (Katz 1910:201)
646	22-22	Qunsha T'el'iht	Squirrel Point, on the shore of Iliamna Lake
648	22-22	Qutiztun	Mountain, 3000 feet in elevation, south of Old Iliamna village
649	22-22	Qutuk'uq'a	Mountain between Tsaq'dak'tazdlen (place name #758) and Pile River
693	22-22	Tahviqt'a	Goose Bay
701	22-22	Tanilen Vetnu Tustes	
702	22-22	Tanivan Qilan	Beach south of Tanivan Vetnu (place name #703)
716	22-22	Taz'in Vena	Lower TazimnaTazimina Lake
717	22-22	Taz'in Vena Vegh Niltu Deq Dilen	
747	22-22	Ts'atanaltsegh	Creek below Fish Village
758	22-22	Tsaq' Datazdlen, Tsaq'dak'tazdlen	Creek into Pile River
764	22-22	Tsayehtnu	Pile River
798	22-22	Tuni T'el'ht	
799	22-21	Tuni Vetnu	Upper and Lower Talarik creeks
808	22-22	Tus Tl'eghla Tusdghilk'et', Tus Tl'its'eghal	Pass from Tanalian River (Kontrashibuna Lake) to Tazimna Lakes
830	22-22	Ulcha Dghil'u	Roadhouse Mountain
831	22-22	Ulcha Tudel Vena	Old Schoolhouse Lake
835	22-22	Hoknede Mountain	
838	22-22	Unqeghnich'en Taz'in Vena	Upper Tazimna Lake
839	22-22	Upper Tazimina Lake	
840	22-22	Unqeghnich'en Z'uni	Mountain south of Upper Tazimna Lake

Place Name No.	Figure That Identifies Place Name	Place Name [a]	Description/Translation [b]
851	22-21	Vahunk'ulgedi	Westernmost of the Nikabuna Lakes
854	22-22	Valiggena Tustes	Pass from Meadow Lake to Dutton, on Cottonwood Bay
864	22-22	Vata'esluh Vena	South Pickerel Lake
865	22-22	Vata'esluh Vena Q'estsiq'	
900	22-21	Venteh	Lake country west of Iliamna Lake
911	22-21	Veq Dnagh K'dghasdiy	Mountain between Nikabuna Lakes
917	22-22	Vighutiztin	Lonesome Point
918	22-22	Vighutiztin Q'atl'a	Lonesome Bay
924	22-21	Vinlni Dnaghishini Vetnu	Creek from the south to Veq Dnagh K'dghasdiy (place name #911)
932	22-22	Yeq Qalniga or Qaligi Cheh Tudnaz'un	
942	22-22	Yutsi Dghil'u, Yutsi Qilan	Knutson Mountain, Knudsen Mountain
943	22-22	Yutsi Qilant, Yutsi Qilan Q'atl'a	Knutson Bay, Knudsen Bay
944	22-22	Yutsi Qilantnu	Knutson River
948	22-22	Zahar Dina	

Notes:

a. All place names are in the Dena'ina language except Number 642, which is in Yup'ik, and Numbers 188, 432, 510, 511, 577, 835, and 839, which are in English.

b. Description/Translation excerpted verbatim from the source materials.

Sources: Ellanna and Balluta, 1992; Kari and Kari, 1982; Kari, Kari, and Balluta, 1986; Wright and Chythlook, 1985

TABLE 22-4
Summary of Test Unit Data for the Bristol Bay Drainages Study Areas, 2004

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TB-04-01	6/29/04	59.90700	-155.30380	19	3	14	Dark brown sand loam with cobbles and boulders	2	Yellow-brown sand and silt, cobbles and boulders	0		Grass roots infiltrate boulder and cobbles with silt-loam matrix
TB-04-02	6/29/04	59.90448	-155.30798	18	3	3	Gravel: pebble layer, angular blocky material	13	Dark brown silt loam	0		Layer of small subangular and rounded pebbles under the root layer
TB-04-03	6/29/04	59.90167	-155.31540	24	3	21	Light brown undifferentiated sand and silt loam; no gravels/ cobbles in matrix	0		0		
TB-04-04	6/30/04	59.89223	-155.29372	21	3	17	Dark brown sandy soil, undifferentiated	1	Small subangular and rounded cobbles and pebbles at 20 inches below surface, pavement-like	0		

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TB-04-05	6/30/04	59.88882	-155.28412	20	4	1	Thin layer, 1-3 inches, of organic and weathered soil under heather and berry-bush root layer	15	Light brown sandy soil with subangular and rounded pebbles and cobbles	0		Crowberry, cloudberry, and salmonberry surface vegetation with lichen and mosses; well-aerated root layer, almost peat-like
TB-04-06	6/30/04	59.89165	-155.28748	24	1	23	Wet clay under thin mat of grasses and mosses; large boulder in center, water infiltration rapid from pit walls	0		0		
TB-04-07	6/30/04	59.89585	-155.27843	9	2	2	Pebbles and sand	5	Silt and sand with rounded and angular to subangular pebbles and cobbles, unsorted, light brown	0		
TB-04-08	6/30/04	59.90077	-155.27973	19	2	17	Unstratified, unsorted silt loam with occasional small subangular cobbles	0		0		

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TB-04-09	7/1/04	59.91290	-155.30848	23	2	21	Undifferentiated dark brown silt loam with unsorted small cobbles	0		0		
TB-04-10	7/1/04	59.91435	-155.30162	12	2	10	Mud and matted organic material with rounded cobbles and boulders	0		0		Water table at 12 inches; roots matted organic material (peat horizon developing)
TB-04-11	9/28/04	59.89238	-155.26900	18	4	14	Unsorted angular pebble, frost-shattered, with sand and silt matrix	0		0		In 4- by 8-foot depression on bench/moraine above lake area northeast of mine area
TD-04-01	7/27/04	59.89812	-155.30190	25	4	3	Black organic soil below root layer	18	Tan silt loam	0		
TD-04-02	7/27/04	59.89568	-155.30015	24	2	6	Dark brown organic loam, unsorted blocky cobbles	7	Brown weathered silt loam, unsorted blocky cobbles	8	Tan silt loam, unsorted blocky cobbles	Last 1 inch blocky cobbles with silt loam matrix as in Level 3
TD-04-03	7/27/04	59.90063	-155.31323	19	7	12	Brown sandy silt with unsorted rounded cobbles throughout	0		0		

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TD-04-04	7/27/04	59.89908	-155.31123	12	2	10	Light brown sand to silt loam with intrusive gray clay lobes	0		0		
TD-04-05	7/27/04	59.89220	-155.31052	19	4	15	Brown to tan sand and silt loam with unsorted rounded cobbles	0		0		
TH-04-01	6/28/04	59.89690	-155.29550	25	5	20	Undifferentiated dark brown silt loam with unsorted cobbles to boulders throughout the soil column	0		0		
TH-04-02	6/28/04	59.89737	-155.29773	24	5	4	Light brown to tan clay and silt	16	Light brown to tan silt and clay with subangular and rounded pebbles to cobbles	0		Root layer in this pit included rootlets with dark brown to brown silt loam mixed with numerous slatey fracturing pebbles, frost fractured

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-03	6/28/04	59.90022	-155.29935	21	4	17	Silt loam with rounded fractured pebbles and cobbles	0		0		Root layer is well developed with indications of stratification in the subtle gradation of color from surface to mineral-soil layer
TH-04-04	6/29/04	59.90463	-155.30820	25	4	21	Brown silt loam with unsorted cobbles to boulders, rounded	0		0		Caribou visible to the north in North Fork Koktuli River valley
TH-04-05	6/29/04	59.90160	-155.31553	16	4	12	Brown silt loam with poorly sorted cobbles	0		0		Root layer includes well developed root mat and dark brown silt loam; surface vegetation is lichen, berries, grasses, sedges, and sorrel
TH-04-06	6/29/04	59.89212	-155.29427	17	4	3	Black, peaty, decomposing vegetable matter	4	Silt	4	Silt and cobbles	Level 4, 2 inches buried soil, balance unsorted pebbles and clay; water saturated throughout; represents a relict lakebed

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-07	6/30/04	59.88907	-155.28370	19	3	15	Poorly sorted gravels, pebbles and cobbles, rounded, in brown silt loam	1	Cobble pavement	0		Edge of bench
TH-04-08	6/30/04	59.89187	-155.28733	23	4	10	Dark brown silt and sand with rounded cobbles, unsorted	9	Cobbles, rounded and sorted, with some silt matrix	0		Above lake on bench south-southeast of camp; former lake shore; surface vegetation moss, grass, crowberries
TH-04-09	6/30/04	59.89595	-155.27855	36	6	18	Brown silt loam with poorly sorted rounded and subangular pebbles and cobbles	12	Tan silt to loess; not compacted, easily excavated; aeolian or low energy fluvial deposit?	0		On edge of bank above lake/wetland area partway down the slope; root mat and peat mixed with sand and silt
TH-04-10	6/30/04	59.90087	-155.27938	20	4	5	Silt, sand, and rounded subangular cobbles	10	Sand matrix with pebbles, cobbles, and rounded granite cobbles, poorly sorted	1	Well sorted rounded pebbles with sand matrix, washed	Thin layer of later deposits over relict fluvial deposit/former stream channel

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-11	6/30/04	59.91303	-155.30863	20	2	18	Sorted cobbles with sticky clay matrix; larger rounded granite cobbles nearest surface in the top 6 inches; cobbles penetrate root layer	0		0		Large cobbles with thin lichen and grass covering, up to 2 inches but cobbles visible through mat; tricky walking
TH-04-12	7/1/04	59.91442	-155.30143	18	4	8	Cobbles, pebbles, gravel and silt; ranges from 5-8 inches deep, sorted	6	Rounded subangular pebbles, pea-sized rounded subangular, with a dense clay matrix binding layer together	0		Root layer from 4-8 inches thick; cut made through animal trail on bank edge of gelifluction lobe
TH-04-13	7/1/04	59.89827	-155.30213	26	4	6	Large rounded cobbles	12	Brown silt loam	4	Gravel and sand	Root layer is grass roots; grass tall, looked good for site; pit in gelifluction mound on rim of kettle lake-like object

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-14	7/27/04	59.89545	-155.29993	26	5	3	Brown modified soil with silt and sand	9	Silt with extensive root infiltration	1	Gray silt lens; possible tephra	Level 4: 3 inches buried peat Level 5: 3 inches brown silt Level 6: 2 inches tan clay Rounded pebbles throughout; well stratified test unit
TH-04-15	7/27/04	59.90053	-155.31353	25	4	7	Black to dark brown soil with root infiltration and numerous pebbles	4	Black sand to gravel, rounded	10	Tan sand and silt	Large subangular rounded cobbles throughout the layers; heavy frost damage
TH-04-16	7/28/04	59.89927	-155.31110	27	3	10	Brown sand and silt	3	3-5-inch-thick band of gray sand to silt	11	11- to 8-inch thick layer brown silt and sand	Rounded subangular pebbles and cobbles sorted near the lower levels
TH-04-17	7/28/04	59.89207	-155.31002	13	3	10	Large subangular blocky cobbles, occasional boulders, with some large roots	0		0		Probably a former lake or streambed area; rocks densely packed with sand to pebble matrix

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-18	7/28/04	59.91023	-155.29122	13	2	6	Silt loam with blocky cobbles	5	Silt loam with gravel, angular fractured and densely packed	0		On a bench over a creek
TH-04-19	7/28/04	59.89207	-155.31000	27	3	4	Brown soil, cobbles, sandy loam, root infiltrated	5	Reddish tan loess	6	Brown silt loam with pebbles	Level 4: tan loess with red bands Good view of Koktuli river valley from bench; no artifacts, debitage, organic layers; grass, shrubs, fireweed, horsetails
TH-04-20	9/2/04	59.86702	-155.29133	30	2	28	Undifferentiated sand in berm on north side of Frying Pan Lake; rectangular-appearing feature; cleared profile in possible feature	0		0		2 possible features, roughly rectangular cutouts in sand berm, neither produced artifacts or soil staining

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-04-21	9/5/04	59.83943	-155.42575	24	3	6	Brown silt loam, some rounded pebbles	1	9 inches below surface is a lenticular dark brown soil stain, buried soil or squirrel burrow	4	Brown silt loam, some rounded pebbles	Level 4, 1 inch deep, another lenticular soil stain. Level 5, 3 inches deep, brown silt. Level 6, 6 inches deep, rounded blocky large cobbles to boulders
TH-04-22	9/28/04	59.89233	-155.26953	18	3	4	Angular fractured gravel to cobbles	11	Clay soil with silt to sand inclusions	0		Area is a seasonal outflow channel for stranded lakes on glacial esker/moraine features in northeast mine area
TT-04-01	6/28/04	59.89693	-155.29523	25	1	10	Loose dark organic loam, sandy	14	10- to 15-inch layer yellow-brown loose clay loam	0		Boulders with interstitial cobbles first thought to be a stone cache; sorted large boulders a pedoturbatory feature
TT-04-02	6/28/04	59.89744	-155.29684	21	5	7	Loose dark sand and silt loam, unsorted rounded pebbles throughout	1	Reddish brown silt loam, weathered	8	Yellow-brown loose clay loam	Grass-covered bench overlooks valley; good view, flat spot, cover

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TT-04-03	6/28/04	59.90036	-155.29908	19	4	8	Brown sand loam with small pebbles, unsorted rounded	4	4- to 9-inch-thick dark brown to black sand loam with gray band or lens; tephra	3	Yellow-brown loose clay loam with angular fractured pebbles	Gray band may be tephra or fire event; on open, flat, narrow ridge near top of hill W of camp
TT-04-04	6/29/04	59.90709	-155.30373	21	6	15	Cobbles and pebbles, rounded and unsorted, in brown clay to silt loam	0		0		Surface vegetation is berries, grass; thick root layer; pit on flat, gentle slope; gravel is very dense
TT-04-05	6/29/04	59.90442	-155.30769	14	4	10	Dark organic silt loam with rounded blocky pebbles; densely packed soil; infiltrated with alder roots	0		0		Excavated in alder patch in small alluvial valley off hill W of camp
TT-04-06	6/29/04	59.90171	-155.31527	22	8	14	Dark brown silt loam with occasional angular gravel	0		0		Surface mat is forest duff with grass, ferns, detritus; on brushy ridge over a series of ponds in alder patch
TT-04-07	6/30/04	59.89269	-155.29399	22	4	18	Silt loam, brown, few angular rounded pebbles and small cobbles	0		0		Surface vegetation is crowberries, grass, some moss

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TT-04-08	6/30/04	59.88930	-155.28376	19	3	16	Brown to tan silt loam with unsorted rounded pebbles and cobbles throughout	0		0		More lichen in the surface vegetation
TT-04-09	6/30/04	59.89202	-155.28725	20	3	7	Unsorted rounded cobbles and pebbles with large cobble capping level, weathered silt loam matrix	10	Brown silt loam with rounded pebbles, sorted	0		Grassy area, moist with fireweed, on slope of esker; mottled lenses of gray-brown sandy soil may be filled-in squirrel dens or ash lenses
TT-04-10	6/30/04	59.89571	-155.27827	15	3	12	Undifferentiated brown silt loam with blocky rounded gravel and pebbles	0		0		
TT-04-11	6/30/04	59.90079	-155.27890	14	3	11	Brown clay loam, or moist silt; fractured angular pebbles, unsorted, throughout	0		0		On east slope of ridge northeast of camp
TT-04-12	7/1/04	59.91321	-155.30881	18	4	10	Rounded gravel and cobbles with silt-loam matrix	4	Yellow-brown clay with angular fractured gravel	0		Along ridge W of camp below hill crest line

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TT-04-13	7/1/04	59.91424	-155.30147	26	4	8	Brown organic silt loam, root infiltrated	5	Gray sandy loam with rounded pebbles, 8-13 inches below ground surface	9	Interbedded gray and reddish sandy loam and gray clay, with red sandy loam continuing to floor	Gray clay base layer continues in the southeast corner below reddish loam; interbedded lenses <1 inch thick
TT-04-14	9/2/04	59.86713	-155.29110	30	2	28	Undifferentiated sand in lakeshore deposit; possible cache pit features observed and tested	0		0		No cultural remains noted
TT-04-15	9/5/04	59.83980	-155.42605	27	4	23	Medium brown silt with a few cobbles	0		0		Squirrel burrow down about 12 inches
TS-04-01	7/28/04	59.90102	-155.31352	14	2	2	Dark brown organic soil below lichen and moss roots	10	Mustard-colored sandy loam with numerous rounded and a few angular unsorted pebbles and cobbles	0		

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TS-04-02	7/28/04	59.89903	-155.31175	13	4	8	Undifferentiated brown silt loam, root infiltrated	1	Frost-shattered pebble pavement, dense surface	0		On bench near edge of gelifluction lobe or stepped topography
TS-04-03	7/29/04	59.89197	-155.31077	3	2	1	Unsorted frost-shattered pebbles and cobbles with some rounded granite cobbles, some sand matrix	0		0		Surface is reindeer moss, some small vascular plants, grasses and sedges occasionally; hard digging
TR-04-01	9/5/04	59.83957	-155.42582	16	2	2	Brown silt loam	6	4-6-inch cobbles, rounded and frost-shattered, with brown silt-loam matrix	6	10- to 16-inch cobbles to boulders with frost-shattered gravel matrix, brown silt loam	Noted sorting of rock material, smaller on top and larger going down
TR-04-02	9/28/04	59.89227	-155.26845	16	3	6	Angular frost-shattered pebbles	7	Pebbles to cobbles with some silt and sand matrix	0		Surface is peat, 3 inches of snow

Note:

a. North American Datum 1983

TABLE 22-5
Summary of Test Unit Data for the Bristol Bay Drainages Study Areas, 2005

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-05-25	7/27/05	59.83761	-155.35749	29	3	5	Black organic silt	20	Undifferentiated brown silt loam; angular pebbles	1	Red/rust-colored sand and angular gravel	No cultural materials; surface vegetation is grass, crowberries
TH-05-26	7/27/05	59.84261	-155.35079	12	3	9	Undifferentiated gravels and cobbles (rounded, angular, fractured)					No cultural materials; surface vegetation is grass, crowberries
TP-05-01	7/26/05	59.87461	-155.32689	24	4	20	Undifferentiated brown silt with frost-shattered pebbles					No cultural material; surface vegetation is grass
TP-05-02	7/27/05	59.84261	-155.35079	12	0.5	11.5	Sand with angular fractured pebbles and rounded cobbles, unsorted					No cultural materials; surface vegetation is moss
TP-05-03	8/24/05	59.88241	-155.32859	19	3	16	Brown silt and angular cobbles					No cultural materials; surface vegetation is grass, crowberries
TP-05-04	8/26/05	59.89461	-155.21469	24	3	21	Packed brown silt grading to reddish					No cultural materials; surface vegetation is grass, crowberries

Test Unit No.	Date	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Max. Depth Below Surface (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
						Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TT-05-01	7/26/05	59.87431	-155.32639	23	4	12	Dark brown sandy silt	7	Medium brown sandy silt with frost-shattered rocks			No cultural material; surface vegetation is grass, cranberries
TT-05-02	7/27/05	59.84241	-155.35079	7	0.5	6.5	Angular gravel with sand matrix	0.1	Rounded cobbles, gravel pavement			No cultural materials; surface is composed of moss and gravel
TT-05-03	8/24/05	59.88241	-155.32859	23	2	6	Deflated stone pavement	6	Yellow-brown silty sand with angular gravel	9	Yellow-brown silt and sand with angular gravel	No cultural material; surface vegetation is grass
TT-05-04	8/26/05	59.89491	-155.21469	16	2	1	Dark brown sandy silt	13	Dark yellow-brown silty sand with occasional rounded cobble	0.1	Dense pavement of rounded cobbles at Level 2/3 interface	No cultural material; surface vegetation is lichen

Note:

a. North American Datum 1983

TABLE 22-6
Summary of Test Unit Data for the Bristol Bay Drainages Study Areas, 2006

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vege-tation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-06-01	59.92382	-155.27518	1070	6/19/06	No	Moss and lichen	15	3	12	Angular granite gravel and cobbles, frost shattered					On a knoll above the Upper Talarik Creek headwaters
TH-06-02	59.91889	-155.25750	987	6/19/06	No	Moss and lichen	16	3	13	Angular granite gravel and cobbles, frost shattered					
TH-06-03	59.81257	-155.42808	830	8/23/06	No	Grass and moss	31	6	5	Interbedded organic silt and coarse river sand	20	Brown, coarse river sand and silt			Largest of a series of apparently fluvial sand mounds
TH-06-04	59.80770	-155.46330	807	8/25/06	No	Berries	16	4	6	Brown silt with rounded pebbles and cobbles	6	Sand, pebbles, and cobbles			On elevated bank above a bend in the South Fork Koktuli near vegetated gravel bar
TH-06-05	59.75470	-154.87907	135	10/24/06	No	Lichen and dwarf willow	24	6	11	Heavily disturbed silt, pebbles, and cobbles	7	Tan silt, pebbles, and cobbles			Located between road and fence. One small clay clast in Level 1

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vege-tation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-06-06	59.75453	-154.87842	144	10/24/06	No	Lichen and dwarf willow	12	3	9	Dark brown silt, 1-3 inch clay clasts					Exposure along fence line on east side of lot. Terminates in cobble pavement
TH-06-07	59.75427	-154.87823	151	10/24/06	No	Lichen and dwarf willow	12	6	6	Large angular cobbles and boulders with interstitial gravel and silt					Very thin layer of vegetation and silt over boulder and cobble pavement
TP-06-01	59.81248	-155.42808	833	8/23/06	No	Berries	27	2	25	Uniform dark brown sand infiltrated with rootlets					Middle fluvial sand mound
TP-06-02	59.80782	-155.46358	794	8/25/06	No	Berries	20	2	18	Sand and silt with size-sorted coarse gravel and cobbles, some angular frost shatter					Near riverbank above South Fork Koktuli River

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vege-tation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TS-06-01	59.92382	-155.27518	1070	6/19/06	No	Moss and lichen	15	3	12	Angular granite gravel and cobbles, frost shattered					On a knoll above the Upper Talarik Creek headwaters
TS-06-02	59.91889	-155.25750	987	6/19/06	No	Moss and lichen	16	3	13	Angular granite gravel and cobbles, frost shattered					
TT-06-01	59.80788	-155.44595	817	8/23/06	Yes	Moss and lichen	10	1.5	2.5	Dark brown silt and sand with lithic flakes	6	Alluvially sorted pebbles, sand, and gravel			In situ artifacts in soil matrix at lithic site by South Fork Koktuli River
TT-06-02	59.81223	-155.42803	833	8/23/06	No	Grass and moss	22.8	3	6.3	Dark brown silt and sand	13.5	Light brown sand			
TT-06-03	59.80788	-155.46447	807	8/25/06	No	Moss and lichen	10.5	1.5	2	Dark brown silty sand with large rounded cobbles	6	Brown coarse river sand and silt with large cobbles	1	Dense cobble till	

Note:

a. North American Datum 1983

TABLE 22-7
Summary of Test Unit Data for the Bristol Bay Drainages Study Areas, 2007

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vege-tation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
TH-07-01	59.896389	-155.176944	741	6/8/07	No	Peat moss and cotton grass	9	n/a	9	Water-saturated peat					Ice at base
TH-07-02	59.896944	-155.177222	755	6/8/07	No	Berries and sedges	7	n/a	7	Water-saturated peat					Ice at base
TH-07-03	59.8984	-155.1912	778	6/8/07	No	Peat moss	6	n/a	6	Water-saturated peat					Tussock tundra in perched pond with willows nearby. Ice at base.
TS-07-01	59.876944	-155.478611	1906	8/21/07	No	Moss and grass	16	4	5	Chocolate-brown silt and gravel	7	Large cobbles with water-saturated oozing clay matrix			Very rocky slope
TP-07-01	59.876389	-155.478889	1908	8/21/07	No	Moss and grass	18	4	3	Brown sand and gravel	11	Large cobbles			Rocky slope with water moving through cobbles
TH-07-07	59.876667	-155.478889	1909	8/21/07	No	Moss and grass	15	3	1	Black silt and organic matter	8	Brown silt and clay	3	Large flat cobble pavement	Large flat cobbles with water welling out under pressure. Cobbles and water flow obscured sidewalls and caused collapse; excavation was discontinued.

Note:

a. North American Datum 1983

TABLE 22-8
Summary of Test Unit Data for the Bristol Bay Drainages Study Areas, 2008

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vegetation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Level 4		Level 5		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
T-EDH-08-01	59.90711	-155.21527	796	7/9/08	N	Peat	8	8											All peat to the frost zone.
T-EDH-08-02	59.934583	-155.421559	1023	7/9/08	N	Moss and berries	16	3	10	Dark brown silt and cobbles	3	Tan silt							Hummocky or lumpy surface.
T-EDH-08-03	59.937561	-155.422101	1057	7/9/08	N	Moss and berries	17	3	12	Dark brown clay, silt and cobbles	2	Tan silt and cobbles							Valley slope has significant frost boiling or cryosol sorting.
T-EDH-08-04	59.93318	-155.48988	954	7/9/08	N	Moss	25	3	10	Dark brown silt	1	Dark grey to black silt	8	Dark brown gelid silt	3	Tan silt			
T-EDH-08-05	59.94208	-155.48411	975	7/9/08	N	Moss	15	2	1	Dark black silt	12	Tan mottled silt							Tussock area.
T-EDH-08-06	59.94841	-155.48090	1012	7/9/08	N	Moss	24	3	2	Dark black silt	9	Dark tan silt	10	Tan sand					Few cobbles and pebbles throughout.
T-EDH-08-07	59.92152	-155.52124	900	7/9/08	N	Moss	14	4	10	Gravel with dark brown silt matrix									Former river channel.
T-EDH-08-08	59.88972	-155.55131	830	7/9/08	N	Moss and grass	15	3	12	Dark brown silt, pebbles and cobbles									
T-EDH-08-09	59.85788	-155.57449	764	7/9/08	N	Moss	20	6	6	Brown silt	1	Dark grey silt	1	Red-orange silt	6	Tan silt			Cobbles throughout the soil column.
T-EDH-08-10	59.81850	-155.30339	894	7/9/08	N	Moss	17	2	1	Dark brown silt	6	Tan silt	8	Light tan silt and cobbles					Fluvial outwash plain south of Frying Pan Lake.
T-EDH-08-11	59.82503	-155.27928	924	7/9/08	N	Pebbles and cobbles	12	0	12	Pebbles and cobbles									No stratigraphic differentiation.
T-EDH-08-12	59.91710	-155.28819	1073	7/9/08	N	Labrador tea and moss	20	3	17	Dark brown silt									Terminates in hard frozen layer. Few pebbles in sorted soil. Artesian upwelling area on nearby slope
T-EDH-08-13	59.93639	-155.29325	1126	7/9/08	N														Stratigraphic data not available.
T-EDH-08-14	59.93283	-155.34366	1142	8/15/08	N	Moss	17	1	8	Dark brown silt and cobbles	8	Grey silt and cobbles							Test unit located on a glacial feature with rocks right below the surface. Test unit in a depression between gravel and cobble ridges.

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vegetation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Level 4		Level 5		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
T-IAP-08-01	59.89762	-155.38177	1831	6/26/08	N	Grass, berries	7	0	7	Reddish silt with occasional roots and water seeping from bottom									In a depression under a rock; incomplete because of helicopter arrival.
T-IAP-08-02	59.92507	-155.29977	1424	6/27/08	N	Grass	8	4	4	Mottled brown/gray/ orange silt, <25% cobbles and coarse pebbles									
T-IAP-08-03	59.92535	-155.31798	1526	6/27/08	N	Grass, Labrador tea, blueberries	12	3	4	Dark brown loam with >50% rootlets	5	Light brown loam							
T-IAP-08-04	59.88117	-155.34528	1680	6/28/08	N	Crowberries, lichen, cranberries	12	2	4	Medium brown soil, 50% cobbles and coarse pebbles	6	Medium brown soil, 1/3 coarse to fine pebbles							
T-IAP-08-05	59.89662	-155.36365	1558	6/29/08	N	Moss, grass, shrubs	11	7	4	Water with cobbles									Poorly drained area
T-IAP-08-06	59.90925	-155.35622	1293	6/29/08	N	Lichen, crowberries	14	1	4	Dark brown, coarse silt with <25% coarse pebbles	9	Reddish, light brown, coarse silt							
T-IAP-08-07	59.89528	-155.36942	1713	6/30/08	N	Crowberries, grass	18	1	3	Dark brown silt	5	Reddish, light brown, coarse silt, >25% cobbles with some coarse pebbles	9	Reddish brown, coarse silt					
T-IAP-08-08	59.91487	-155.37306	1355	6/30/08	N	Lichen, crowberries, grass, Labrador tea	13	1	2	Dark brown silt	3	Light brown silt, 75% cobbles with some coarse pebbles	7	Light brown, coarse silt, 50% coarse to fine pebbles					
T-IAP-08-09	59.89852	-155.38808	1909	6/30/08	N	Moss, grass, salmonberries, crowberries	12	2	10	Brown, coarse silt, <25% coarse pebbles and cobbles									
T-IAP-08-10	59.91718	-155.37795	1237	7/1/08	N	Crowberries, dead twigs	13	4	9	Light reddish brown, coarse silt, <25% medium to coarse pebbles and rootlets									

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vegetation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Level 4		Level 5		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
T-IAP-08-11	59.83072	-155.42942	889	7/8/08	N	Lichen, crowberries, blueberries	18	2	7	Brown, coarse silt with occasional rootlets	9	Light brown, coarse silt with occasional cobbles							
T-PBL-08-01	59.89523	-155.37480	1840	6/26/08	N	Tundra Moss	13	2	8	Brown silty loam with light tan/gray lens	3	Orange-brown silty gravel with medium-sized pebbles							
T-PBL-08-02	59.91928	-155.31100	1433	6/26/08	N	Grass	8	4	4	Dark brown, silty loam and cobbles									
T-PBL-08-03	59.92500	-155.30013	1440	6/27/08	N	Grass	17	7	6	Brown-gray silty clay loam with rootlets	4	Orange-gray clay loam with coarse pebbles							
T-PBL-08-04	59.92517	-155.31762	1522	6/27/08	N	Grass	21	3	4	Tan-brown silty loam and rootlets	7	Brown-gray loam with coarse pebbles	4	Brown-gray sandy silt with coarse pebbles	3	Orange-brown sandy loam			
T-PBL-08-05	59.92525	-155.32557	1499	6/27/08	N	Tundra moss	16	2	13	Tan-gray sandy loam with coarse pebbles and small cobbles	1	Gray, sandy gravel with coarse pebbles							
T-PBL-08-06	59.92250	-155.33738	1358	6/28/08	N	Tundra moss	10	1	3	Brown, loose, silty gravel with small to coarse pebbles	4	Brown-red silt with fine to medium pebbles	2	Brown-gray loam with fine to medium pebbles					Lithic artifacts recovered in rock scatter adjacent to test pit.
T-PBL-08-07	59.88038	-155.34457	1696	6/28/08	N	Tundra moss	12	2	10	Brown silt with medium pebbles and angular cobbles/talus									
T-PBL-08-08	59.89632	-155.36277	1568	6/29/08	N	Tundra moss	13	6	7	Tan silt with large stones and interspersed dark brown silt concentrations									
T-PBL-08-09	59.90895	-155.35545	1286	6/29/08	N	Tundra moss	13	3	10	Tan, silty, sandy loam with medium coarse pebbles									

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vegetation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Level 4		Level 5		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
T-PBL-08-10	59.89503	-155.36888	1713	6/30/08	N	Tundra moss	18	4	2	Brown-black silty clay with some cobbles	12	Tan-red silty sand with brown/dark brown mottled concentrations and few cobbles							
T-PBL-08-11	59.91493	-155.37225	1352	6/30/08	N	Tundra moss	17	3	3	Dark brown, silty with 65% small to medium pebbles	8	Fine, brown silt	3	Tan, sandy silt loam with some fine pebbles					
T-PBL-08-12	59.89813	-155.38927	1886	6/30/08	N	Tundra moss	8	2	6	Brown silt with large cobbles/talus									
T-PBL-08-13	59.91728	-155.37702	1257	7/1/08	N	Tundra moss	7	4	3	Brown and tan silt with angular cobbles and stones									
T-PBL-08-14	59.83147	-155.42938	909	7/8/08	N	Tundra moss	16	3	9	Mottled dark red/black/gray/ brown silt loam with cobbles	4	Yellow-tan sandy silt with pebbles and some cobbles							
T-RKS-08-01	59.92465	-155.29967	1437	6/27/08	N	Grass	14	2	8	Loam with roots	4	Sandy loam with rocks and frozen ground at the bottom							Cobbles throughout and was frozen at the bottom.
T-RKS-08-02	59.92468	-155.31768	1545	6/27/08	N	Grass and Fireweed	14	3	11	Loam with some rocks (12-30 cm in length)									Never got to Level 2, shovel broke.
T-RKS-08-03	59.92533	-155.32588	1503	6/27/08	N	Lichen, tundra tea, berries	18	2	2	75% gravel (small to medium pebbles), brown soil	3	Dark brown soil, moist, roots	3	Clay and sand mixed, dark soil with some reddish in it	3	Reddish soil, clay, coarse pebbles	5	Grayish brown soil, sandy with some gravel	
T-RKS-08-04	59.92252	-155.33761	1348	6/28/08	N	Lichen, berries	15	3	6	Reddish soil, some clay, coarse pebbles	2	Dark brown soil, 50% gravel	2	80-90% coarse pebbles and cobbles	2	Dark brown soil			
T-RKS-08-05	59.89658	-155.36270	1545	6/29/08	N	Berries, lichen, small bushes, moss	15	4	11	Talus rocks some sandy reddish soil									In a talus field, all big rocks under the surface vegetation.

Test Unit No.	Latitude (decimal degrees) [a]	Longitude (decimal degrees) [a]	Elev. (ft)	Date	Cultural Material	Surface Vegetation	Total Depth (in.)	Root Mat Thick-ness (in.)	Level 1		Level 2		Level 3		Level 4		Level 5		Comments
									Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	Thick-ness (in.)	Description	
T-RKS-08-06	59.90887	-155.35620	1283	6/29/08	N	Berries, lichen, flowers	14	2	3	Some roots, some small rocks, nice soil, dark brown/blackish	5	Brown soil fading to lighter brown towards the bottom of layer	4	Sand and gravel with rocks up to 10 cm wide, greyish/ reddish soil					Near a creek.
T-RKS-08-07	59.89507	-155.36843	1706	6/30/08	N	Berries, grass, moss	16	2	3	Some roots and topsoil, dark brown/blackish	3	Dark at the top fading to reddish, clay and silt	8	Reddish to light brown, sandier, with clay and silt					Good soil, nice overlook.
T-RKS-08-08	59.91475	-155.37116	1362	6/30/08	N	Lichen, berries, some grass	15	2	4	Mostly pebbles, some reddish dirt mixed in	9	Mostly reddish dirt, a few small pebbles							Overlooking a valley with a stream in it.
T-RKS-08-09	59.89833	-155.38872	1903	6/30/08	N	Lichen, berries, mosquitoes	8	1	7	Rocks, old talus, some reddish brown soil									Lots of cobbles.
T-RKS-08-10	59.91760	-155.37640	1247	7/1/08	N	Lichen, berries	16	2	2	Medium brown soil, few rocks	12	Light brown, sandy soil with some rocks, 4-15 cm long							Easy digging, overlooking a pond at the end of the survey track.
T-SAS-08-01	59.83162	-155.42952	909	7/8/08	N	Blackberry or crowberry, Labrador tea, bog rosemary, dwarf blueberry	30	4	2	Medium greyish-brown silty soil with angular gravel and cobbles throughout	5	Very dark brown, almost black, silty loam with large rounded to angular cobbles to boulders	9	Medium to dark brown smooth silty soil	3	Dark brown very hard packed clay silt	7 cm	Medium to dark brown silt	Test pit was dug within a large swale on a mountain slope. Possibly more soil accumulation occurs in this area over time because the topography is concave.

Note:

a. North American Datum 1983

TABLE 22-9
Cultural Resource Features Identified in the Bristol Bay Drainages Study Areas

This table describes the 565 cultural resource features that were identified in the Bristol Bay drainages study areas during cultural resources interviews and subsistence and traditional knowledge interviews. The locations of these features are depicted on Figures 22-24a through 22-25d. All 1,154 cultural resource features identified during the interviews are described in Appendix 22B, and the locations of all features are shown on Figure 22-23.

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
BTL-001	22-24b	"The Rapids"	50-plus years
BTL-002	22-25b	Schoolhouse Lake	50-plus years
BTL-009	22-25b	Intricate Bay battle site with Aleuts	50-plus years
BTL-011	22-24b, 22-25b	Battle site above Petrov Falls	50-plus years
BTL-012	22-25b	Roadhouse Mountain battle site	50-plus years
BTL-013	22-25b	Roadhouse Mountain battle site	50-plus years
BUR-001	22-25c	Graves at fish camp	Multigenerational
BUR-005	22-25c	Cremains dispersed on Upper Tazimina Lake	Unknown
BUR-007	22-24c	Graves near the site of Old Newhalen	Old
BUR-008	22-25c	Graves at the site of Old Newhalen	Old
BUR-009	22-24c	Upper Talarik cabins and graves	Old
BUR-010	22-24c	Graves near Lower Talarik Village site	50-plus years
BUR-014	22-24c, 22-25c	Graves near Old Newhalen	50-plus years
BUR-016	22-24c	Lower Talarik Village cemetery	50-plus years
BUR-040	22-24c	Upper Talarik Creek mouth	50-plus years
BUR-045	22-25c	Fish camp and burials	Multigenerational
BUR-046	22-25c	Bible camp and graves near old Nondalton	Unknown
BUR-056	22-24c	Burials, camp, and cabins on high ground	Multigenerational
BUR-063	22-25c	Old Nondalton burials	50-plus years
BUR-064	22-25c	Fish Village burials	50-plus years
BUR-067	22-25c	Fish camp burials on a hill	50-plus years
BUR-069	22-25c	Fish camp with burials	Unknown
BUR-070	22-25c	Fish camp with burials	Unknown
BUR-071	22-25c	Portage Landing camp with burials	50-plus years
BUR-081	22-24c	Possible burials	50-plus years
BUR-083	22-25c	Fish Village burials	50-plus years
BUR-085	22-25c	Fish camp burials	50-plus years
BUR-087	22-25c	Possible burials	50-plus years
BUR-091	22-24c	Lower Talarik Creek burials near lakes	Old
BUR-102	22-25c	Burials at Old Nondalton	Unknown
BUR-115	22-25c	Burials near Newhalen	Unknown
BUR-116	22-24c	Burials near Newhalen	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
BUR-117	22-25c	Burials	Unknown
BUR-118	22-25c	Burials	Unknown
BUR-119	22-24c	Burials	Unknown
BUR-120	22-24c	Burials	Unknown
BUR-121	22-24c	Burials	Unknown
BUR-124	22-25c	Burial at fish camp	Unknown
BUR-125	22-25c	Burial near Old Nondalton	Unknown
BUR-127	22-25c	Burials near lake on Newhalen River	Unknown
BUR-128	22-25c	Burials near fish camp in Sixmile Lake	Unknown
BUR-129	22-25c	Graveyards at Old Village	50-plus years
BUR-130	22-25c	Burials	Unknown
BUR-131	22-25c	Graveyard at old village	Unknown
BUR-133	22-25c	Burial	Unknown
BUR-135	22-25c	Burials at fish camp	Unknown
BUR-137	22-25c	Burials at old village near Lonesome Bay	Unknown
BUR-138	22-25c	Russian Orthodox graveyard at Old Iliamna	50-plus years
BUR-139	22-25c	Burials at Lonesome Bay	Unknown
BUR-140	22-25c	Burials at Old Village	Unknown
CAB-001	22-24a	Upper Talarik cabin	Unknown
CAB-011	22-24a	Cabin	Unknown
CAB-015	22-24a	Lower Talarik Cabin	Unknown
CAB-018	22-24a	Lower Talarik Creek cabin	Unknown
CAB-020	22-24a	Upper Talarik cabin	Unknown
CAB-022	22-25a	Cabin	Unknown
CAB-023	22-24a	Uncle's cabin	Multigenerational
CAB-031	22-24a	Cabin (Upper Talarik mouth)	Multigenerational
CAB-032	22-24a	Cabin (Lower Talarik mouth)	Multigenerational
CAB-054	22-24a	Cabin	Multigenerational
CAB-056	22-24a	Cabin (Upper Talarik mouth)	Multigenerational
CAB-059	22-24a	Cabin (Lower Talarik mouth)	Multigenerational
CAB-064	22-24a	Ira Wassilie's allotment and cabin	Multigenerational
CAB-065	22-24a	Lower Talarik cabin	Multigenerational
CAB-071	22-24a	Lower Talarik cabin	Multigenerational
CAB-072	22-24a	Upper Talarik cabin	Multigenerational
CAB-081	22-24a	Cabin	50-plus years
CAB-085	22-24a	Cabin	Multigenerational
CAB-089	22-24a	Uncle's cabin	Multigenerational
CAB-096	22-24a	Fish and Game cabin, Lower Talarik	Old
CAB-097	22-24a	Uncle's cabin on Lower Talarik Creek	Old
CCH-001	22-25b	Hemmer's Cache	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
CCH-002	22-25b	Hemmer's Cache	Unknown
CCH-003	22-25b	Cache	Old
CMP-001	22-24a	Charlie Trefon Camp	Old
CMP-009	22-25a	Camp	Unknown
CMP-010	22-25a	Alexcey Lake Bible Camp site	Unknown
CMP-011	22-24a	Beaver camp	Unknown
CMP-012	22-25a	Lower Tazimina Lake camp	Unknown
CMP-013	22-25a	Moose and bear camp, Lower Tazimina Lake	Unknown
CMP-014	22-25a	Long Lake campsite	Unknown
CMP-015	22-25a	Bird-hunting camp	Unknown
CMP-017	22-25a	Dog team days camp on Lower Tazimina	Unknown
CMP-022	22-24a	Long Lake good camping area	Unknown
CMP-024	22-25a	Camp/allotment on Lower Tazimina	Unknown
CMP-025	22-25a	Lower Tazimina camp	Unknown
CMP-026	22-25a	Camp on Lower Tazimina Lake	Unknown
CMP-027	22-25a	Camp on Upper Tazimina Lake	Unknown
CMP-028	22-25a	Camp	Unknown
CMP-029	22-25a	Camp	Unknown
CMP-030	22-25a	Grayling camp	Unknown
CMP-031	22-24a	Frying Pan Lake tent camp	Unknown
CMP-034	22-25a	Fish camp	Unknown
CMP-035	22-25a	Fish Camp	Unknown
CMP-037	22-24a	Long Lake Camp 2	Unknown
CMP-038	22-24a	Nikabuna Camp 1	Unknown
CMP-039	22-24a	Nikabuna Camp 2	Unknown
CMP-040	22-24a	Nikabuna Camp 3	Unknown
CMP-041	22-24a	Long Lake camp	Unknown
CMP-042	22-24a	North Fork Koktuli overlook	Unknown
CMP-043	22-25a	Berry camp tent site	Unknown
CMP-044	22-25a	Squirrel camp (Women's Mt.)	Unknown
CMP-047	22-24a	Nikabuna Lakes camp	Unknown
CMP-048	22-24a	Nikabuna camping area	Unknown
CMP-049	22-25a	Jim Stevens' land	Unknown
CMP-050	22-25a	Tent camp for white fish	Unknown
CMP-051	22-25a	Fish camp for spring white fish	Unknown
CMP-053	22-24a	Nikabuna Lakes camp	Unknown
CMP-056	22-24a	Cottonwood patch camp	Unknown
CMP-058	22-25a	Fishing and hunting camp	Unknown
CMP-059	22-25a	Fishing and hunting camp	Unknown
CMP-060	22-25a	Pickerel Lakes Camp 1	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
CMP-061	22-25a	Pickerel Lake Camp 2	Unknown
CMP-063	22-24a	Nikabuna Lakes camp	Unknown
CMP-065	22-25a	Women's camp	Unknown
CMP-067	22-24a	Long Lake Kijik Corporation lands	Unknown
CMP-072	22-25a	Behind Flat Island camp	Unknown
CMP-074	22-24a	Nikabuna spring camp	Unknown
CMP-076	22-25a	Beaver camp between upper and lower Tazimina Lakes	Unknown
CMP-077	22-25a	Tazimina Lakes pass camp	Unknown
CMP-078	22-25a	Fish camp on Sixmile Lake	Unknown
CMP-079	22-25a	Seversons	Old
CMP-080	22-24a	Fish camp	50-plus years
CMP-083	22-24a	Upper Talarik Creek mouth camps	Multigenerational
CMP-084	22-24a	Upper Talarik Creek mouth camps	Multigenerational
CMP-085	22-25a	Tommy Point area	Multigenerational
CMP-092	22-25a	Horseshoe Bend fish camp	Old
CMP-093	22-25a	Bear Creek camp	50-plus years
CMP-094	22-25a	Alexcy Creek camp	Multigenerational
CMP-095	22-25a	Knudsen Bay	Multigenerational
CMP-112	22-24a	Frying Pan Lake camps	50-plus years
CMP-113	22-25a	Interviewee's mom's allotment	Unknown
CMP-118	22-25a	Ida's allotment	Unknown
CMP-119	22-25a	Vern Jensen's Allotment	Multigenerational
CMP-136	22-24a	Cottonwood patch (is the name of this historic camp place)	Old
CMP-140	22-25a	Tazimina Lakes camp	50-plus years
CMP-141	22-25a	Fish Village fish camps	50-plus years
CMP-142	22-25a	Fish Camp and burials	Unknown
CMP-146	22-25a	Chai Point	50-plus years
CMP-147	22-25a	Berry camp	50-plus years
CMP-148	22-25a	Spring camp	50-plus years
CMP-149	22-25a	Grayling camp	50-plus years
CMP-150	22-24a	Allotment with camp	50-plus years
CMP-151	22-25a	Allotment	Unknown
CMP-152	22-24a	Groundhog Mountain camp	50-plus years
CMP-153	22-24a	Overlook camp	50-plus years
CMP-154	22-24a	Koktuli River overlook camp	50-plus years
CMP-155	22-25a	Upper Tazimina Lake camp	Old
CMP-156	22-25a	Squirrel camp on Boy's Mountain	50-plus years
CMP-157	22-25a	Squirrel camp on Women's Mountain	50-plus years
CMP-158	22-24a	Sandy beach camp, Frying Pan Lake	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
CMP-159	22-25a	Fish camp	50-plus years
CMP-160	22-25a	Fish camp	50-plus years
CMP-161	22-25a	Fish camp	Old
CMP-162	22-25a	Grandparents' Fish Camp on Bear Creek	50-plus years
CMP-163	22-25a	Old Camps at Fish Village	Old
CMP-165	22-25a	Fish Camp and burials	Unknown
CMP-166	22-25a	Old Iliamna Fish Camp	50-plus years
CMP-167	22-25a	Fish camp	50-plus years
CMP-168	22-25a	Fish camp	50-plus years
CMP-169	22-25a	Fish camp at the end of the winter trail	50-plus years
CMP-170	22-25a	Fish camp by the falls	50-plus years
CMP-172	22-25a	Squirrel camp	50-plus years
CMP-173	22-25a	Chai Point camp	50-plus years
CMP-174	22-25a	Fish Village camps	50-plus years
CMP-175	22-25a	Fish camp on Horseshoe Bend	Multigenerational
CMP-179	22-24a	Wooded outlet stream camp, Frying Pan Lake	50-plus years
CMP-180	22-24a	Talarik Plateau Wooded area	50-plus years
CMP-181	22-24a	Camp	50-plus years
CMP-182	22-24a	Sharp Mountain camp	50-plus years
CMP-186	22-24a	Father-in-law's allotment	Unknown
CMP-191	22-25a	Fish camp by One Tree Island and Chai Point	Multigenerational
CMP-193	22-25a	Fish Village by Nondalton	Multigenerational
CMP-208	22-24a	Fish camp on Newhalen River	Multigenerational
CMP-210	22-25a	Camp at "Tea Party Creek"	Unknown
CMP-211	22-24a	Frying Pan Lake	Unknown
CMP-220	22-25a	Old trapping camp	50-plus years
CMP-221	22-25a	Old trapping camp	50-plus years
CMP-222	22-25a	Old trapping camp	50-plus years
CMP-224	22-25a	Old camp at Pile Bay	50-plus years
MAT-004	22-25c	Kokhanok Lake clay beds	Unknown
OBS-003	22-25d	Eagle Bay haunted cabin	Multigenerational
OBS-004	22-25d	First Bridge, haunted	Unknown
OBS-005	22-25d	Roadhouse (Giant) Mountain, little people and ghosts seen	50-plus years
OBS-006	22-25d	Bigfoot/spooky area at Tazimina Lakes	Multigenerational
OBS-011	22-25d	Bubble sound bay	Unknown
OBS-019	22-25d	Giant fish sightings	Multigenerational
OBS-020	22-25d	Pile Bay/Seal Islands giant fish area	Multigenerational
OBS-021	22-25d	Haunted area along Kokhanok Lake	Multigenerational
OBS-025	22-25d	Big fish lives here	Multigenerational
OBS-026	22-25d	Intricate or Devil's Bay	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
OTR-005	22-25c	Agates	Unknown
OTR-006	22-25c	Agates on island	Unknown
OTR-007	22-25c	Flat Island Bay underwater cave	Old
OTR-009	22-25c	Army camp	50-plus years
OTR-010	22-25c	Millet mine	50-plus years
OTR-011	22-24c	Rapids on the Newhalen	Old
OTR-012	22-24c	Site of first Iliamna School	Old
OTR-013	22-25c	Severson's store and trading post	Old
OTR-021	22-25c	Quartz crystals on Boys' and Women's Mountain	Unknown
OTR-025	22-25c	Wien air plane crash site	Unknown
OTR-035	22-25c	Birthplace at Old Iliamna	50-plus years
PLA-006	22-25c	Stonehouse Bay Cave	Old
PLA-007	22-25c	Devil's Bay	Old
PLA-008	22-25c	Stonehouse Bay Cave	Old
PLA-009	22-25c	Chekok	50-plus years
PLA-010	22-25c	Knutson Bay	50-plus years
PLA-011	22-25c	Pedro Bay (modern)	50-plus years
PLA-012	22-25c	Old Iliamna	50-plus years
PLA-013	22-25c	Stonehouse Bay Cave	Old
PLA-014	22-25c	Village of Iliamna	50-plus years
PLA-016	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-017	22-25c	Hedlunds	Unknown
PLA-018	22-25c	Chekok	Unknown
PLA-021	22-25c	Village of Iliamna	50-plus years
PLA-029	22-25c	Village of Newhalen (modern)	50-plus years
PLA-030	22-25c	Village of Nondalton (modern)	Unknown
PLA-031	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-032	22-25c	Village of Nondalton (modern)	50-plus years
PLA-033	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-034	22-25c	Hedlunds camp	50-plus years
PLA-035	22-25c	Village of Iliamna (modern)	50-plus years
PLA-036	22-25c	Village of Newhalen (modern)	50-plus years
PLA-037	22-25c	Old Nondalton	50-plus years
PLA-038	22-25c	Village of Nondalton (modern)	50-plus years
PLA-039	22-25c	Devil's Bay	Multigenerational
PLA-041	22-24c	Boys' Mountain	Unknown
PLA-042	22-24c, 22-25c	Women's Mountain	Unknown
PLA-043	22-25c	Village of Nondalton (modern)	50-plus years
PLA-044	22-25c	Village of Pedro Bay (modern)	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
PLA-046	22-25c	Village of Nondalton (modern)	Unknown
PLA-047	22-25c	Village of Iliamna (modern)	Unknown
PLA-048	22-25c	Nondalton village (modern)	50-plus years
PLA-049	22-25c	Devil's Bay	Old
PLA-066	22-24c	Anna's Lake	Unknown
PLA-067	22-25c	"Tea Party Creek"	Unknown
PLA-073	22-25c	Chi Point "a place to stop and have tea"	Unknown
PLA-077	22-25c	"Tazinvitnu," Pickerel Creek	Unknown
RDR-002	22-25b	Intricate Bay	50-plus years
RDR-006	22-24b	Reindeer station at the Gap	50-plus years
RDR-007	22-24b, 22-25b	Reindeer Corral	50-plus years
RDR-008	22-24b	Upper Talarik Creek reindeer station	50-plus years
RDR-009	22-24b	Reindeer Station	50-plus years
RDR-010	22-25b	Eagle Bay Reindeer Station	50-plus years
RDR-011	22-25b	Eagle Bay [respondent's birth place]	50-plus years
RDR-012	22-25b	Eagle Bay reindeer station	50-plus years
SIT-005	22-24b	Fish and Game cabin near an old village site	Old
SIT-006	22-24b	Upper Talarik cabins and graves	Multigenerational
SIT-007	22-24b	Portage Landing	50-plus years
SIT-009	22-24b	Newhalen Gorge site	50-plus years
SIT-010	22-25b	Old Portage Village	50-plus years
SIT-011	22-24b, 22-25b	Newhalen Rapids site	50-plus years
SIT-012	22-25b	Newhalen portage landing	Old
SIT-019	22-24b	Where Yukon and Kuskokwim people came out	Old
SIT-020	22-25b	Hedlunds	50-plus years
SIT-021	22-25b	Severson's store	50-plus years
SIT-023	22-25b	Whitewing Bay	50-plus years
SIT-028	22-25b	Old church	50-plus years
SIT-031	22-25b	House pits at Petrof Falls	Unknown
SIT-032	22-25b	House pit site on the Tazimina	Unknown
SIT-034	22-25b	Knutson Bay	Unknown
SIT-035	22-25b	near Pedro Mountain	Unknown
TDP-001	22-25b	Copper River Lodge	Multigenerational
TDP-002	22-25b	Old Russian trading post	50-plus years
TDP-003	22-25b	Severson's Trading Post	50-plus years
TDP-004	22-25b	Severson's Roadhouse	50-plus years
TPL-001	22-24a	Beaver trapline on Swan River	50-plus years
TPL-004	22-25a	Kokhanok Lake-Copper River route	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TPL-011	22-25a	Trapline	Old
TPL-012	22-25a	Traplines around Kokhanok Lake"	Multigenerational
TPL-016	22-25a	Kokhanok to Kokhanok Bay via Kokhanok Lake and Copper River	Multigenerational
TRL-001	22-25a	Route from Nondalton to Seversons in Iliamna	Old
TRL-002	22-24a	Koktuli Trail	50-plus years
TRL-005	22-25a	Portage Trail	50-plus years
TRL-007	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-008	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-009	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-010	22-24a, 22-25a	Kokhanok to Iliamna route	Multigenerational
TRL-011	22-25a	Kokhanok to Iliamna route	Multigenerational
TRL-013	22-24a	Kaskanak Creek to Mulchatna River route	Multigenerational
TRL-015	22-24a	Chulitna River corridor	Multigenerational
TRL-016	22-24a, 22-25a	Chulitna River corridor	Multigenerational
TRL-017	22-25a	Iliamna/Newhalen to Kokhanok winter route	Multigenerational
TRL-018	22-24a, 22-25a	Spring commercial fishing route to Bristol Bay	50-plus years
TRL-019	22-24a	Lower Talarik Creek to South Fork Koktuli route	Multigenerational
TRL-020	22-24a	Route along ridge of high ground between Upper and Lower Talarik creeks	Multigenerational
TRL-021	22-24a, 22-25a	Trail to Upper and Lower Talarik Creeks via Pete Andrews Creek	Multigenerational
TRL-022	22-25a	Winter trail to Lake Clark	50-plus years
TRL-023	22-25a	Pedro Bay trail	Multigenerational
TRL-024	22-25a, 50-5	Iliamna Portage route	50-plus years
TRL-025	22-24a, 22-25a	Newhalen riverside trail	50-plus years
TRL-026	22-25a	Back way to Lake Clark	50-plus years
TRL-030	22-25a	Nondalton to Indian Point trail	50-plus years
TRL-031	22-24a	Lower Talarik ridge route	Multigenerational
TRL-032	22-24a, 22-25a	Kokhanok to Newhalen route	Multigenerational
TRL-035	22-25a	Kokhanok-Newhalen winter route	Multigenerational
TRL-036	22-25a	Kokhanok to Pile Bay route	Multigenerational
TRL-038	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-039	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-040	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-041	22-24a, 22-25a	Kokhanok to Iliamna	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRL-042	22-25a	Kokhanok to Iliamna	Multigenerational
TRL-049	22-24a, 22-25a	Kokhanok Loop via Kaskanak and Koktuli-Talarik	Multigenerational
TRL-061	22-25a	Kokhanok to Seal Islands route	Multigenerational
TRL-062	22-24a, 22-25a	Seal Islands to North Shore route	Multigenerational
TRL-063	22-24a	Upper Talarik Creek hunting, fishing, travel route	Multigenerational
TRL-064	22-24a	Lower Talarik Creek route	Multigenerational
TRL-065	22-25a	Kokhanok to Newhalen route	Multigenerational
TRL-066	22-24a	Upper Talarik to South Fork Koktuli River	50-plus years
TRL-067	22-24a	Around Kaskanak	50-plus years
TRL-068	22-24a	Upper Talarik Creek	50-plus years
TRL-069	22-25a	Eagle Bay to Severson's	50-plus years
TRL-070	22-25a	Reindeer herding route	50-plus years
TRL-077	22-24a, 22-25a	Route from Lime Village to Nondalton via Dutna Lake	50-plus years
TRL-080	22-24a, 22-25a	Nondalton to Lime Village via Dutna Lake	50-plus years
TRL-081	22-25a	Newhalen Portage	50-plus years
TRL-082	22-25a	Winter route-Severson's to Nondalton	50-plus years
TRL-088	22-25a	Portage road	50-plus years
TRL-089	22-25a	Tazimina Lakes route	50-plus years
TRL-090	22-25a	Tanalian Point to Nondalton trail	50-plus years
TRL-091	22-24a, 22-25a	Women's Mountain to Talarik Plateau Lakes	50-plus years
TRL-092	22-25a	Nondalton to Kijik via beach	50-plus years
TRL-093	22-25a	Hedlunds to Pickerel Lakes via Roadhouse Mountain	50-plus years
TRL-094	22-24a	Route from Nikabuna Lakes to Lime Village via Dutna Lake	50-plus years
TRL-095	22-24a, 22-25a	Portage road	50-plus years
TRL-096	22-24a, 22-25a	Nondalton to Nikabuna Lakes route	50-plus years
TRL-097	22-25a	Lower Tazimina Lake trail from Pickerel Lakes	50-plus years
TRL-098	22-25a	Lower Tazimina to Upper Tazimina Lake camp	50-plus years
TRL-099	22-25a	Tazimina River trail	50-plus years
TRL-100	22-25a	Tanalian to Hedlunds route	50-plus years
TRL-101	22-25a	Kontrashibuna Lake via Takoka Creek	50-plus years
TRL-102	22-24a, 22-25a	Nondalton to Nikabuna Lakes	50-plus years
TRL-103	22-24a	Fish camp to Upper Talarik-Frying Pan Lake-Koktuli	50-plus years
TRL-104	22-24a, 22-25a	Upper Talarik route	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRL-106	22-24a	Talarik to Koktuli to Nikabuna loop	50-plus years
TRL-107	22-24a, 22-25a	Overland from Talarik to Newhalen	50-plus years
TRL-108	22-24a, 22-25a	Offshore route from Talarik to Newhalen	50-plus years
TRL-109	22-25a	Winter Trail	50-plus years
TRL-110	22-25a	Around Roadhouse Mountain route	50-plus years
TRL-111	22-25a	Hedlunds to Pedro Bay along beach	50-plus years
TRL-113	22-25a	Nondalton to Lime Village via Dutna Lake	50-plus years
TRL-114	22-24a, 22-25a	Koktuli River route	50-plus years
TRL-115	22-24a	Koktuli River-Lower Talarik Creek	Unknown
TRL-116	22-25a	Horse trail around Roadhouse Mountain	50-plus years
TRL-117	22-25a	Old Iliamna to Severson's, beach route	50-plus years
TRL-118	22-25a	Old Iliamna to Severson's, water route	50-plus years
TRL-119	22-25a	Portage route to Iliamna	50-plus years
TRL-120	22-25a	Winter trail	50-plus years
TRL-121	22-24a, 22-25a	Squirrel trap areas trail	50-plus years
TRL-122	22-24a, 22-25a	Nondalton to Nikabuna trail	50-plus years
TRL-123	22-25a	Nondalton to Tanalian Point, land route	50-plus years
TRL-124	22-25a	Tazimina Lakes trail	50-plus years
TRL-125	22-25a	Nondalton to Hedlunds winter route	50-plus years
TRL-126	22-25a, 50-5	Williamsport to Pile Bay portage	50-plus years
TRL-127	22-25a, 50-5	Williamsport to Pile Bay road	50-plus years
TRL-128	22-25a	Arrowheads and pits along trail	Old
TRL-129	22-25a	Portage trail to Iliamna	50-plus years
TRL-130	22-25a	Jack Dawson Creek hunting route	Unknown
TRL-133	22-24a, 22-25a	Route from Nondalton to Koktuli via Groundhog Mountain and Upper Talarik Creek	50-plus years
TRL-135	22-25a	Old dogsled Trail	50-plus years
TRL-136	22-24a, 22-25a	Fish Village around Boy's Mountain route	Multigenerational
TRL-137	22-24a	Talarik-Koktuli Divide route	Multigenerational
TRL-139	22-24a	Winter Lower Talarik Creek route	Multigenerational
TRL-142	22-24a, 22-25a	Old dog team trail	Unknown
TRL-143	22-24a, 22-25a	Old dog team trail	Unknown
TRL-144	22-25a	Kijik to Old Iliamna	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRL-145	22-25a	Foot and dog team trail from Chekok Bay to Pickerel Lakes	Multigenerational
TRL-146	22-24a, 22-25a	From Nondalton to the mouth of the Chulitna River	Multigenerational
TRV-001	22-25a	Airplane route Port Alsworth to Pedro Bay via pass	Unknown
TRV-002	22-25a	Airplane Port Alsworth to Nondalton and Iliamna	Unknown
TRV-003	22-24a	Airplane Nushagak route	Unknown
TRV-007	22-24a, 22-25a	Spring duck-hunting route	Multigenerational
TRV-008	22-24a, 22-25a	Beach route to Pete Andrews Creek and Upper Talarik Creek	Multigenerational
TRV-011	22-25a	Winter route up the Chulitna River	Unknown
TRV-012	22-25a	Nondalton to Portage Creek via Kijik	Unknown
TRV-014	22-25a	Creek route to black bear-hunting area.	Unknown
TRV-015	22-25a	Hunting trail	Multigenerational
TRV-016	22-24a	Upper Talarik Creek route	Multigenerational
TRV-018	22-24a, 22-25a	Hemmer's Cache to Mulchatna River via Dutna and Long lakes	Unknown
TRV-019	22-24a, 22-25a	High country loop	Unknown
TRV-020	22-25a	Pickerel Lakes trail	Unknown
TRV-021	22-25a	Pickerel Lakes to Lower Tazimina	Unknown
TRV-022	22-25a	Lower Tazimina outlet lakes	Unknown
TRV-023	22-24a, 22-25a	Foot trail to bird camp and a place where caribou are sometimes hiding	Unknown
TRV-024	22-25a	Portage trail	Unknown
TRV-025	22-25a	Iliamna to Pedro Bay by barge	Unknown
TRV-026	22-25a	High country bear-hunting trail	Unknown
TRV-027	22-25a	Sheep hunt Route 1	Unknown
TRV-028	22-25a	Stream with cabins	Unknown
TRV-029	22-25a	Lake Clark to Chulitna Bay water route	Unknown
TRV-030	22-25a	Trail to Skiffdulbena (sp) Lake	Unknown
TRV-031	22-25a	High line or race track loop trail	Unknown
TRV-032	22-25a	Nondalton to Kijik trail	50-plus years
TRV-033	22-24a, 22-25a	Nondalton to Groundhog Mountain via Boys' and Women's mountain trail	Unknown
TRV-034	22-24a, 22-25a	Fish Village to Groundhog Mountain route	Unknown
TRV-036	22-25a	Ridge Trails	Unknown
TRV-040	22-25a	Portage route Severson's store to Nondalton	Unknown
TRV-041	22-25a	Hedlunds to Nondalton via Roadhouse Mountain	Unknown
TRV-042	22-25a	Fish camp to Fish Village via Pickerel Lakes	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRV-044	22-25a	Chi Point to Nondalton	Unknown
TRV-046	22-24a	Chulitna River to Nikabuna Lakes route	Unknown
TRV-050	22-25a	Tanalian to Hedlunds via Tazimina Lakes	Unknown
TRV-051	22-25a	Tanalian-Hedlunds trail to Fish Camp	Unknown
TRV-052	22-24a	Long Lake to Nikabuna Lakes	Unknown
TRV-053	22-25a	Tanalian-Hedlunds trail to Upper Tazimina Lake	Unknown
TRV-055	22-24a, 22-25a	Horseshoe Bend to Nikabuna Lakes via Upper Talarik/North Fork Koktuli	Unknown
TRV-056	22-24a, 22-25a	Nondalton to Long Lake	Unknown
TRV-057	22-24a	Upper Talarik plateau to Newhalen	Unknown
TRV-058	22-24a, 22-25a	West side of Newhalen River trail	Unknown
TRV-059	22-25a	Fish Village to Lower Tazimina Lake route	Unknown
TRV-061	22-25a	Chulitna River to Hemmer's Cache	Unknown
TRV-064	22-24a, 22-25a	Telaquana to Bonanza Hills	Unknown
TRV-068	22-24a	Upper to Lower Talarik Creek Inland route	Unknown
TRV-069	22-24a, 22-25a	Route from Newhalen to the Talarik creeks	Unknown
TRV-070	22-24a, 22-25a	Skiffibuna Lake to Long Lake to Nikabuna trail	Unknown
TRV-072	22-25a	Pedro Bay to Hedlunds via Knudsen Bay beach or ice	Unknown
TRV-074	22-25a	High route Tanalian to Fish Village	Unknown
TRV-075	22-25a	Beach route Tanalian to Fish Village	Unknown
TRV-077	22-24a	Groundhog Mountain to Nikabuna Lakes via Albert Creek	Unknown
TRV-078	22-24a	Groundhog Mountain to Upper Talarik/Koktuli North Fork Divide	Unknown
TRV-079	22-24a	Women's Mountain to Long Lake via unnamed creek	Unknown
TRV-080	22-24a	South face traverse of Groundhog Mountain	Unknown
TRV-081	22-24a	Route from Koktuli to Mulchatna via Swan River	Unknown
TRV-082	22-24a	Koktuli to Kaskanak area trail	Unknown
TRV-083	22-24a	Talarik Creeks portage	Unknown
TRV-084	22-24a	High flats portage	Unknown
TRV-085	22-24a	Chulitna River to Long and Nikabuna lakes	Unknown
TRV-086	22-25a	Hillside trail to Long Lake	Unknown
TRV-087	22-25a	Lake Clark to Chulitna Bay route	Unknown
TRV-088	22-24a, 22-25a	Chulitna River route to Long and Nikabuna lakes	Unknown
TRV-089	22-24a, 22-25a	Upper Talarik and Koktuli River route	Unknown
TRV-090	22-24a	Upper Talarik Creek	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRV-091	22-24a, 22-25a	Nondalton to Long Lake high trail	Unknown
TRV-092	22-24a	Lower Talarik Creek	Unknown
TRV-093	22-24a, 22-25a	Talarik uplands trail	Unknown
TRV-094	22-24a, 22-25a	Upper Talarik to Frying Pan Lake route	Unknown
TRV-098	22-24a	Chulitna River to Long and Nikabuna Lakes	Unknown
TRV-099	22-24a, 22-25a	Nondalton to Albert Creek over Groundhog Mountain	Unknown
TRV-100	22-24a	Nikabuna Lakes to Iliamna Lake via Upper Talarik Creek	Unknown
TRV-101	22-24a, 22-25a	Nondalton to mid-Upper Talarik Creek	Unknown
TRV-102	22-24a	Chulitna River water route to Long Lake camp	Unknown
TRV-103	22-25a	Kijik from Nondalton, water route	Unknown
TRV-104	22-25a	Allotments along route to Kijik	Unknown
TRV-105	22-24a	Chulitna River	Unknown
TRV-106	22-25a	High trail, Nondalton to Indian Point	Unknown
TRV-107	22-24a, 22-25a	Nondalton to Boy's and Women's mountains	Unknown
TRV-108	22-25a	Middle route, Nondalton to Hemmer's Cache	Unknown
TRV-109	22-25a	Shoreline route	Unknown
TRV-110	22-25a	Fish Camp to Melvin Trefon's camp, Lower Tazimina Lake	Unknown
TRV-111	22-25a	Chekok Creek route to Nondalton	Unknown
TRV-112	22-25a	Chekok to Pickerel Lakes via the north side of Roadhouse Mountain	Unknown
TRV-113	22-25a	Portage road	Unknown
TRV-114	22-25a	Pedro Bay to Iliamna/Newhalen	Unknown
TRV-115	22-25a	Pedro Bay to Naknek via Kvichak	Unknown
TRV-116	22-25a	Pedro Mountain circumnavigation	Unknown
TRV-117	22-25a	Pile River to Pedro Bay	Unknown
TRV-118	22-25a	Iliamna River tributary trail	Unknown
TRV-119	22-25a	Pedro Bay to Chekok	Unknown
TRV-120	22-24a, 22-25a	Newhalen to Lower Talarik	Unknown
TRV-122	22-24a, 22-25a	Nondalton to Cottonwood Patch via Groundhog Mountain	Unknown
TRV-124	22-24a, 22-25a	Horseshoe Bend to the High country	Unknown
TRV-125	22-24a, 22-25a	Nondalton to Nikabuna via Groundhog Mountain	Unknown
TRV-126	22-24a	Circle around Groundhog Mountain	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
TRV-128	22-24a	Nondalton to Lake September via Dutna Lake	Unknown
TRV-129	22-25a	Nondalton to Chulitna River overland trail	Unknown
TRV-132	22-24a	Chulitna River to Nikabuna Lakes via Long Lake	Unknown
TRV-133	22-25a	Nondalton to Little Lake Clark	Unknown
TRV-139	22-25a	Nondalton to Kijik Lake on shore	Unknown
TRV-140	22-25a	Trail to bear-hunting area	Unknown
VIL-006	22-25b	Squirrel Point Village	50-plus years
VIL-008	22-25b	Bear Creek mouth village	50-plus years
VIL-009	22-25b	Pile Bay Village	50-plus years
VIL-013	22-24b	Lower Talarik village and camp	50-plus years
VIL-015	22-25b	Fish Village	50-plus years
VIL-019	22-25b	Old Newhalen	50-plus years
VIL-020	22-25b	Old Newhalen	50-plus years
VIL-025	22-25b	Fish Village	50-plus years
VIL-029	22-25b	Squirrel Point village site	50-plus years
VIL-030	22-25b	Village of Old Iliamna	50-plus years
VIL-044	22-25b	Old Nondalton	50-plus years
VIL-045	22-25b	Old Iliamna	50-plus years
VIL-046	22-25b	Squirrel Point Village	Old
VIL-051	22-25b	Hedlunds	50-plus years
VIL-052	22-25b	Old Nondalton	50-plus years
VIL-054	22-25b	Old Iliamna	50-plus years
VIL-059	22-25b	Old Nondalton	50-plus years
VIL-061	22-25b	Old Nondalton church and graveyard	50-plus years
VIL-067	22-25b	Fish Village	50-plus years
VIL-073	22-25b	Fish Village	50-plus years
VIL-074	22-25b	Old Nondalton	50-plus years
VIL-075	22-25b	Village site at mouth of Pile River (different site than the one marked on base map)	50-plus years
VIL-077	22-25b	Old Iliamna	Old
VIL-101	22-25b	Old Nondalton	Unknown
VIL-103	22-25b	Old village	Unknown
VIL-107	22-25b	Old Newhalen	50-plus years
VIL-128	22-25b	Old Nondalton	50-plus years
VIL-131	22-25b	Old Village	Unknown
VIL-133	22-25b	Old Village	50-plus years
VIL-136	22-25b	Old village	Unknown
VIL-140	22-25b	Old village site	Unknown
VIL-145	22-25b	Old Iliamna	50-plus years
VIL-146	22-25b	Old Iliamna	Unknown

Feature Number	Figure That Shows Feature	Feature Name/Description	Time Period
VIL-147	22-25b	Squirrel Village	Unknown
VIL-148	22-25b	Fish Village	Unknown
VIL-149	22-25b	Old village near Lonesome Bay	Unknown
VIL-150	22-25b	Old village near Lonesome Bay	Unknown
VIL-151	22-25b	Old Iliamna	50-plus years
VIL-152	22-25b	Old Iliamna	50-plus years
VIL-155	22-25b	Old Village	Unknown

Notes:

BTL = Battle Site

BUR = Burial

CAB = Cabin

CCH = Cache

CMP = Camp

MAT = Material Source

OBS = Observation/sighting (extraordinary)

OTR = Other

PLA = Place name

RDR = Reindeer Station

SIT = Site

TDP = Trading Post

TPL = Trapline

TRL = Trail/Route

TRV = Travel Route

VIL = Village

FIGURES

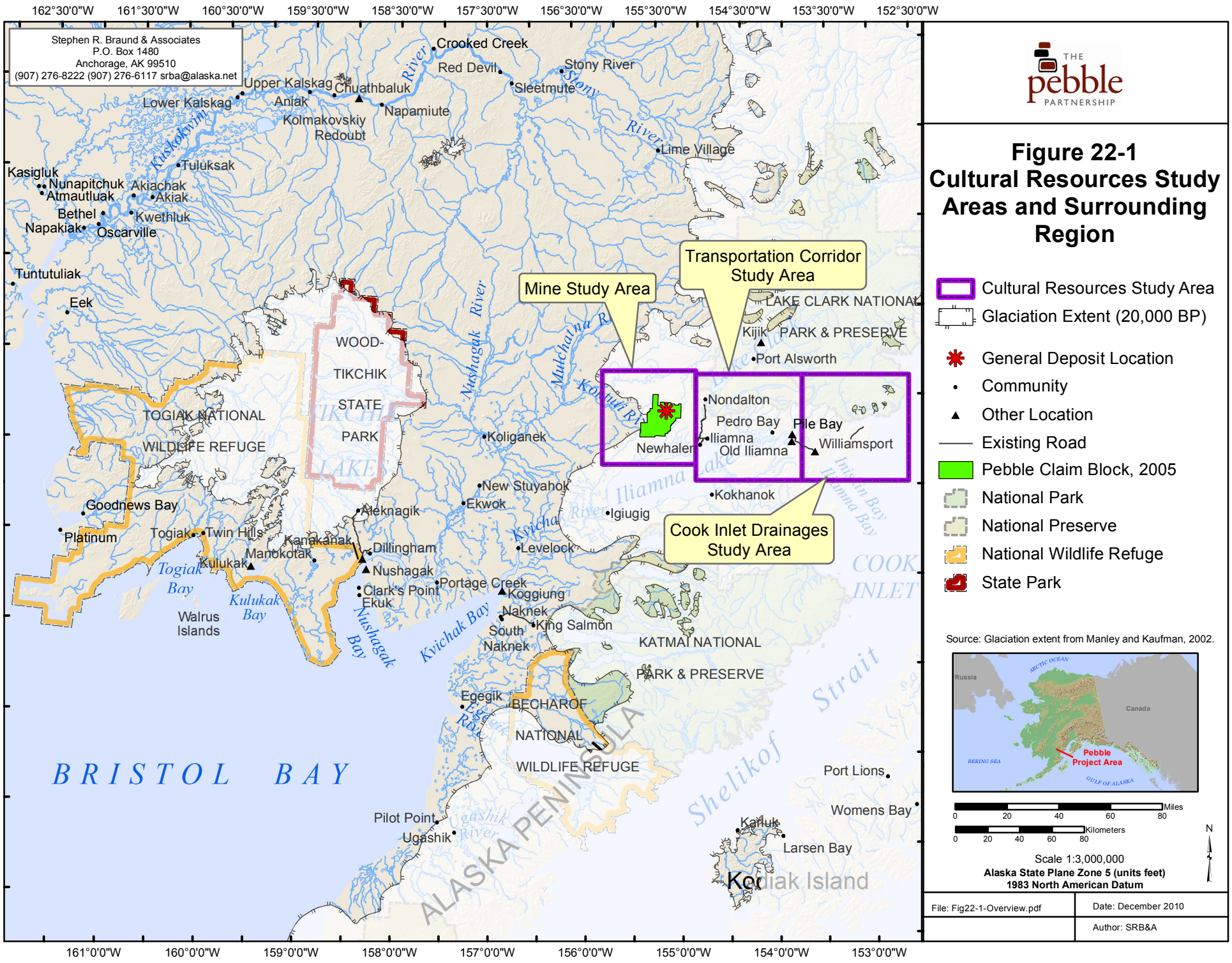

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Figure 22-1
Cultural Resources Study Areas and Surrounding Region

File: Fig22-1-Overview.pdf	Date: December 2010
	Author: SRB&A

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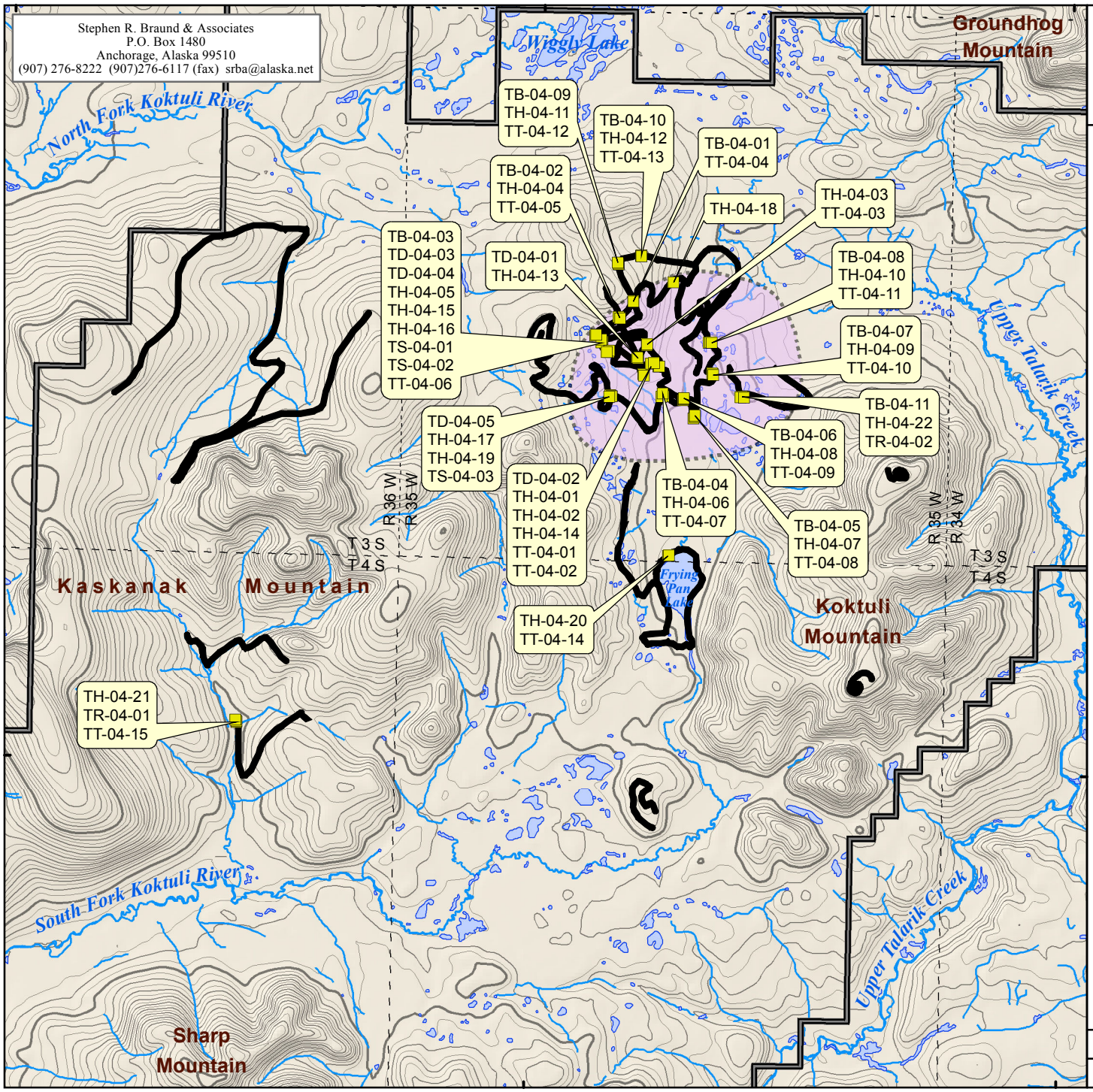
Figure 22-2
2004 Cultural Resources Field Survey, Mine Study Area



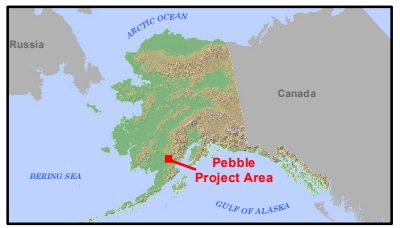
Test Unit

Survey Track

General Deposit Location

Pebble Claim Block, 2005

See Table 22-4 for more information about test units.



Miles 0 0.5 1 1.5 2

Kilometers 0 1 2 3 4

N

Scale 1:100,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-2-SurveyedArea_04	Date: December 2010
	Author: SRB&A

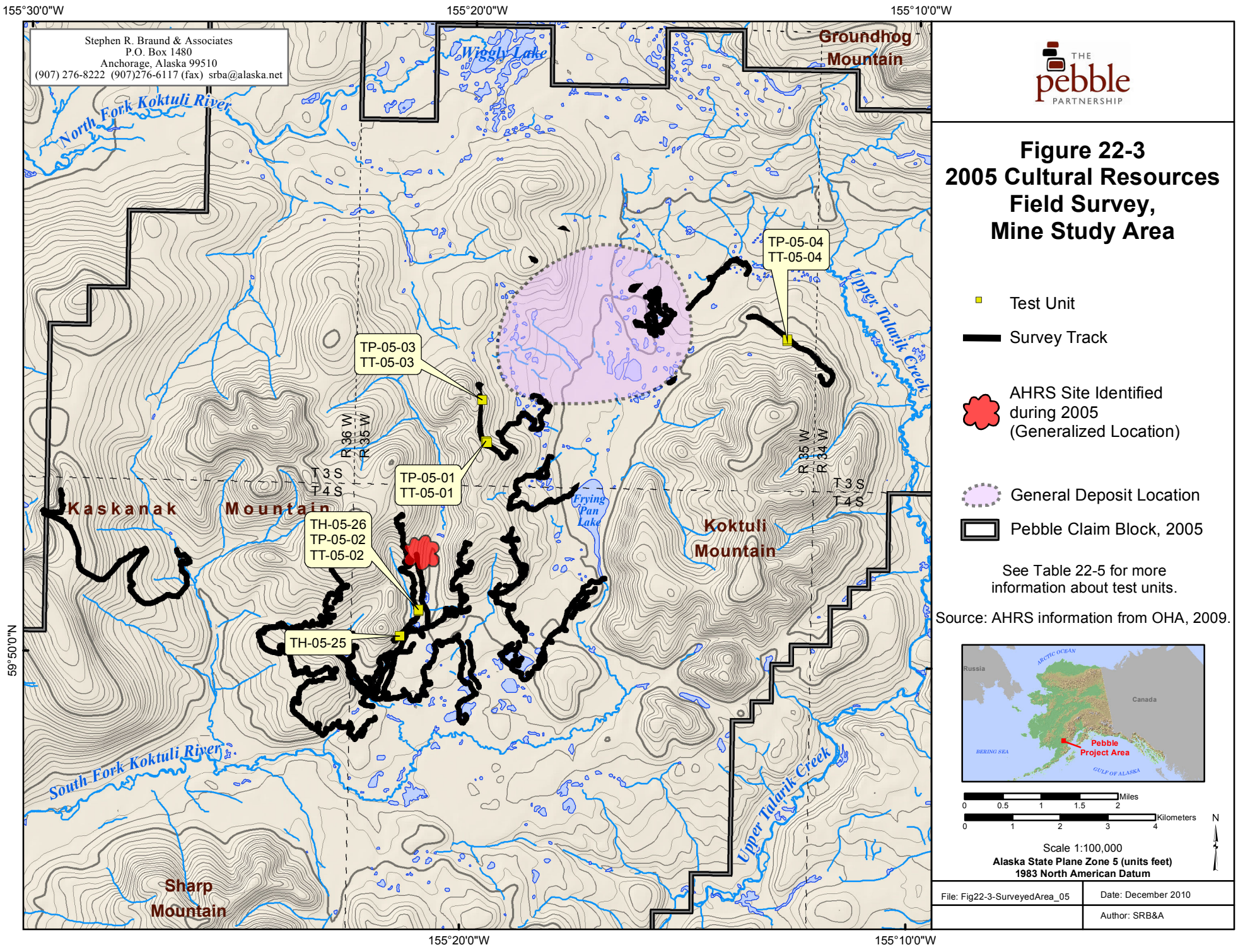


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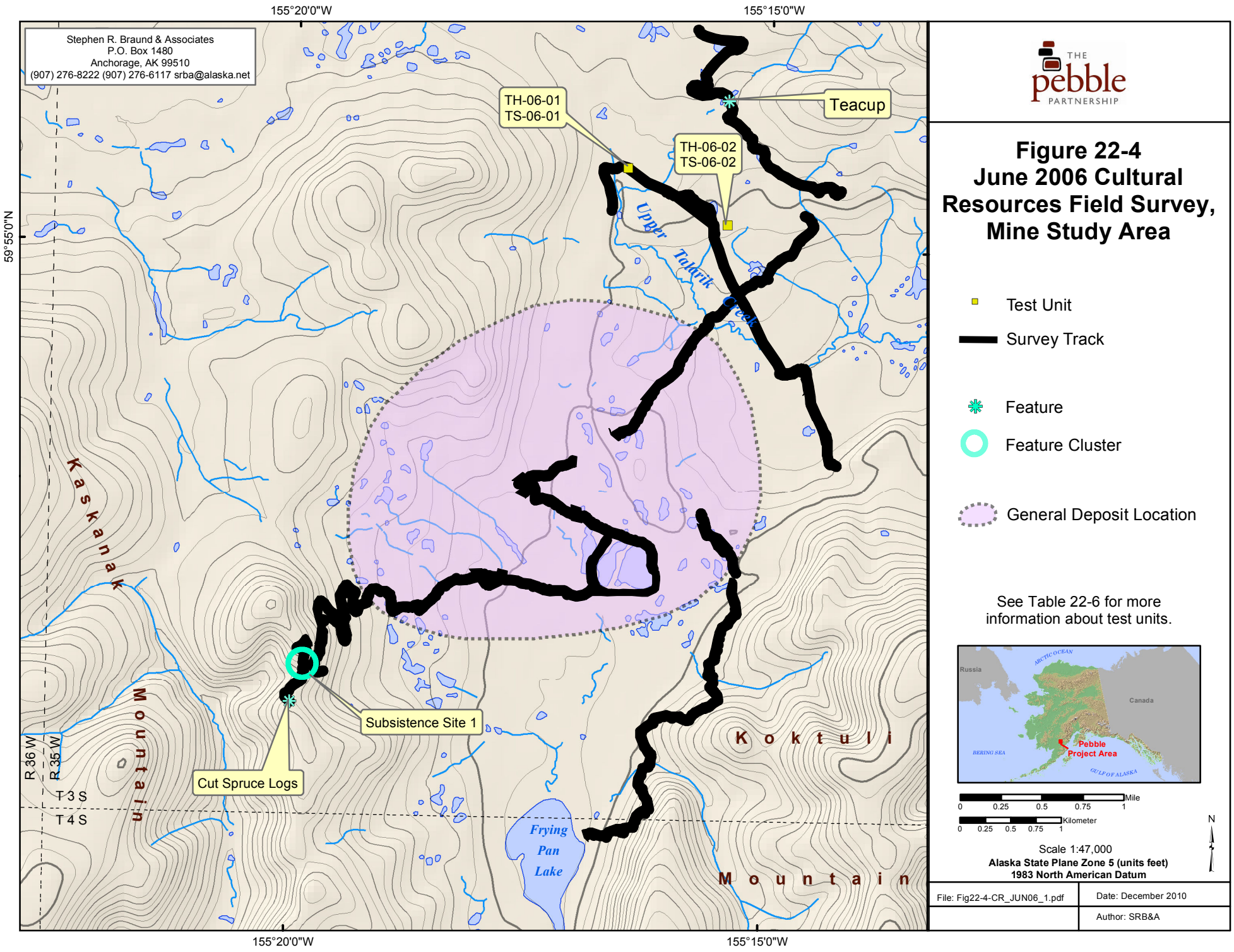
Figure 22-3
2005 Cultural Resources Field Survey, Mine Study Area


155°20'0"W
155°15'0"W
59°55'0"N
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TH-06-01
TS-06-01
Teacup
TH-06-02
TS-06-02
Upper Talarik Creek
Kaskanak Mountain
Subsistence Site 1
Cut Spruce Logs
Frying Pan Lake
Koktuli Mountain
R 36 W
R 35 W
T 3 S
T 4 S
THE pebble PARTNERSHIP
Figure 22-4
June 2006 Cultural Resources Field Survey, Mine Study Area
Test Unit
Survey Track
Feature
Feature Cluster
General Deposit Location
See Table 22-6 for more information about test units.
Russia
Canada
ARCTIC OCEAN
BERING SEA
GULF OF ALASKA
Pebble Project Area
Mile
0 0.25 0.5 0.75 1
Kilometer
0 0.25 0.5 0.75 1
N
Scale 1:47,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-4-CR_JUN06_1.pdf
Date: December 2010
Author: SRB&A

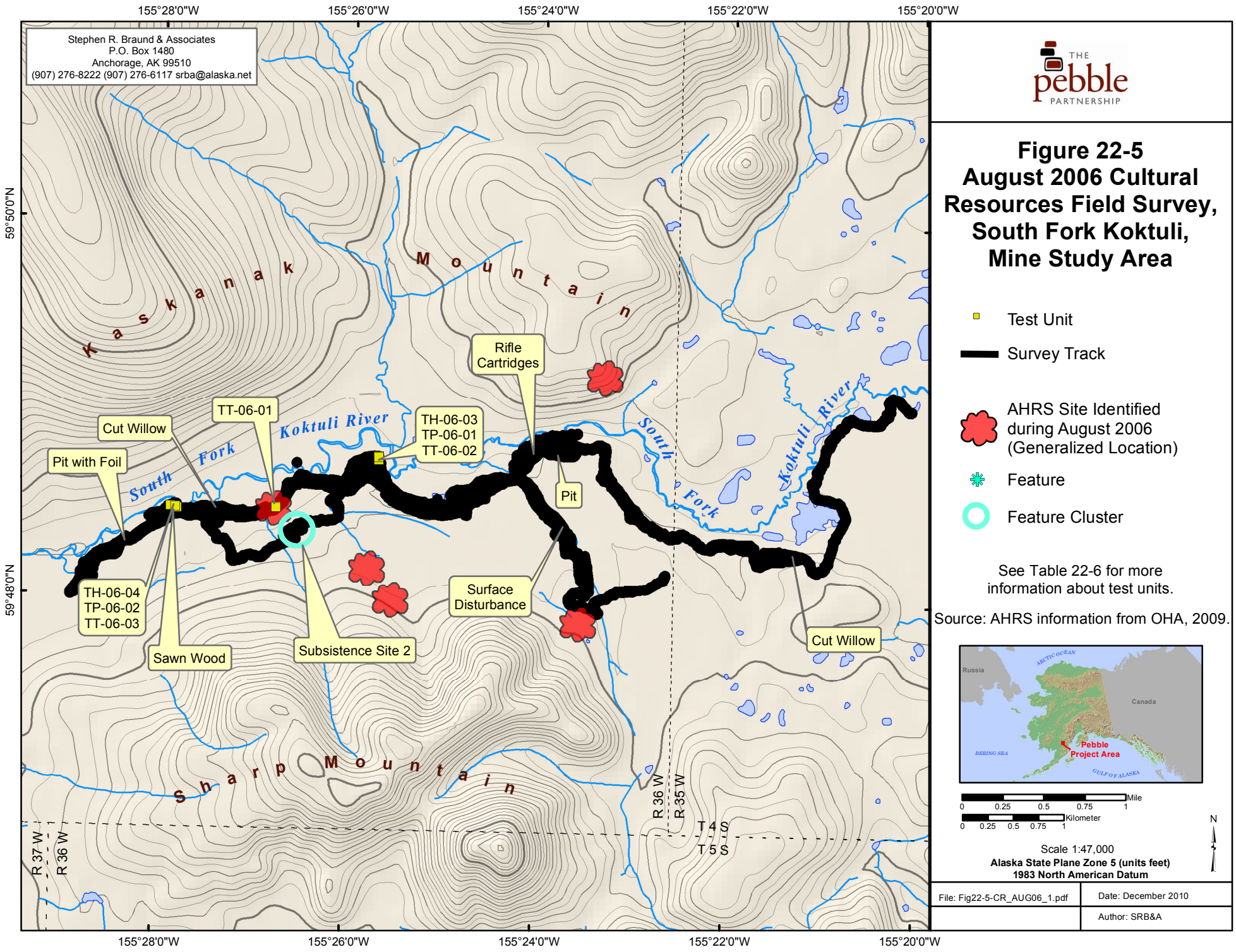

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Figure 22-5
August 2006 Cultural Resources Field Survey, South Fork Koktuli, Mine Study Area

- Test Unit
- Survey Track
- AHRS Site Identified during August 2006 (Generalized Location)
- Feature
- Feature Cluster

See Table 22-6 for more information about test units.

Source: AHRS information from OHA, 2009.

Mile 0 0.25 0.5 0.75 1

Kilometer 0 0.25 0.5 0.75 1

N

Scale 1:47,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-5-CR_AUG06_1.pdf	Date: December 2010
	Author: SRB&A

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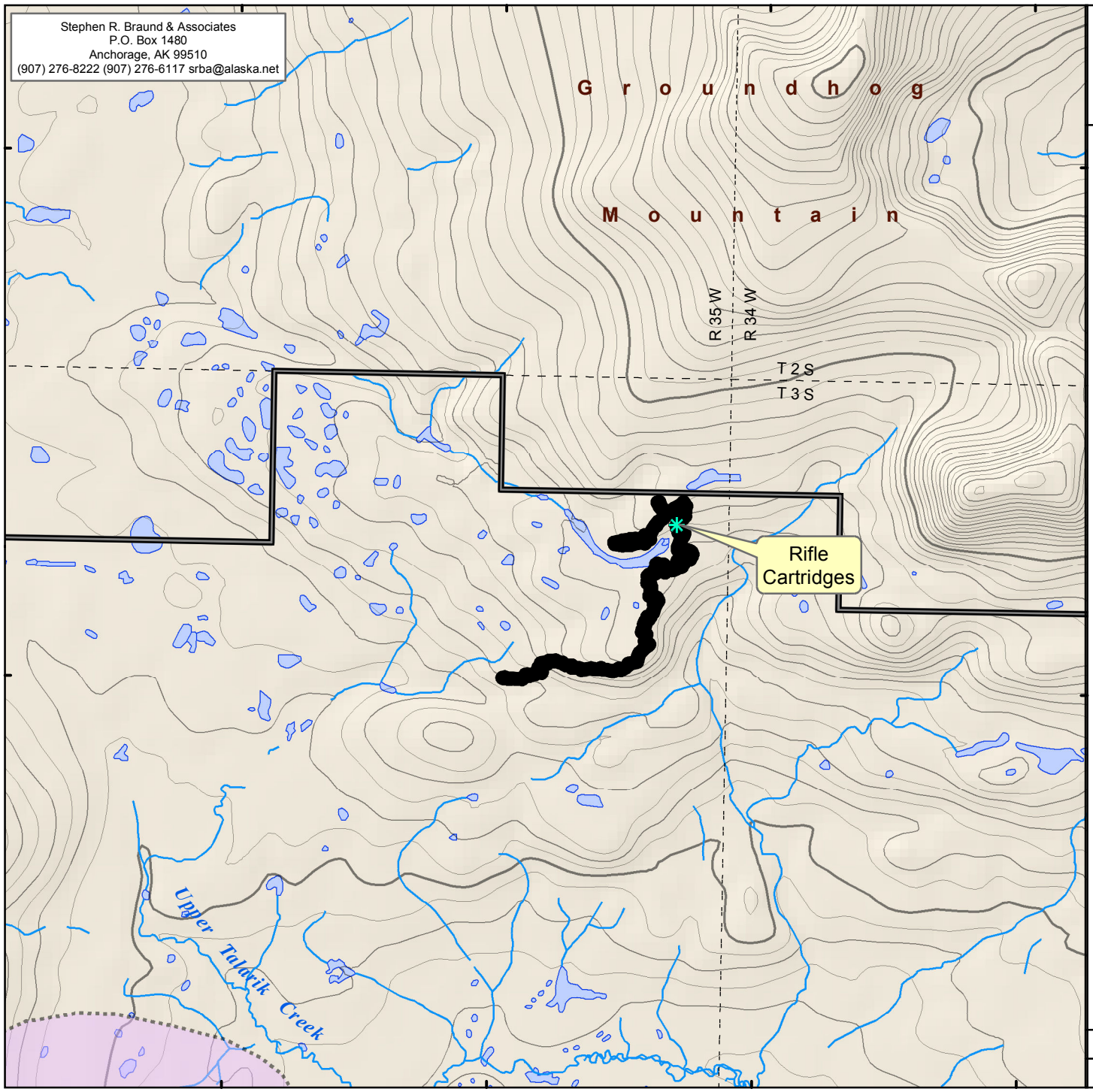

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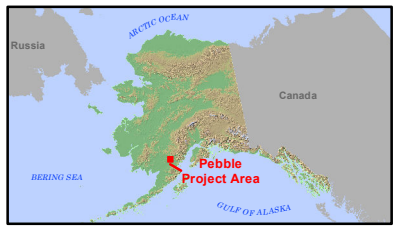
Figure 22-6
August 2006 Cultural Resources Field Survey, Groundhog Mountain, Mine Study Area

- Survey Track
- Feature
- General Deposit Location
- Pebble Claim Block, 2005



Mile 0 0.25 0.5 0.75 1
Kilometer 0 0.25 0.5 0.75 1

N

Scale 1:40,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-6-CR_AUG06_3.pdf	Date: December 2010
	Author: SRB&A

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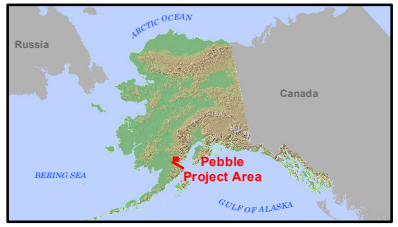
Figure 22-7
October 2006 Cultural Resources Field Survey, Drilling-core Storage Area, Iliamna

Test Unit

Survey Track

See Table 22-6 for more information about test units.

Source: Orthophotography from Eagle Mapping Ltd., 2004.



Feet
0 100 200 300 400
Meters
0 25 50 75 100

N

Scale 1:3,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-7-CR_OCT06_2.pdf	Date: December 2010
	Author: SRB&A

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154°54'0"W

154°53'0"W

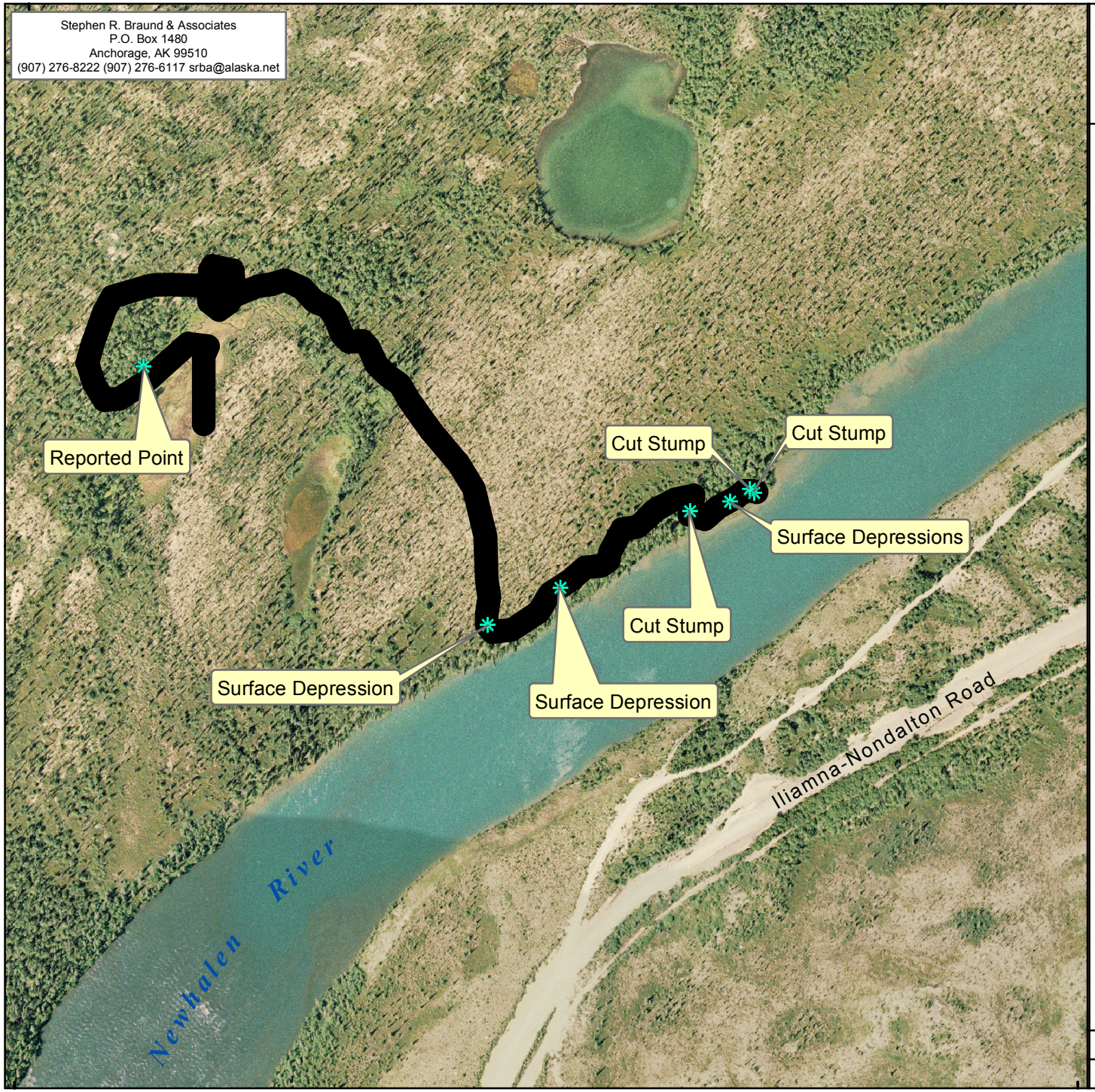

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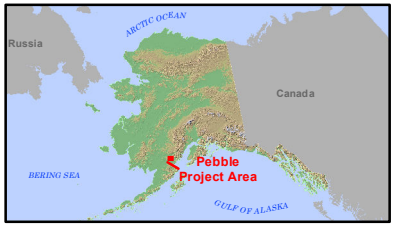
Figure 22-8
October 2006 Cultural Resources Field Survey, 2006 Option for Possible Bridge Location, Newhalen River

Survey Track

Feature

Source: Orthophotography from Eagle Mapping Ltd., 2004.



Feet
0 150 300 450 600

Meters
0 50 100 150 200

N

Scale 1:5,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-8-CR_OCT06_1.pdf	Date: December 2010
	Author: SRB&A

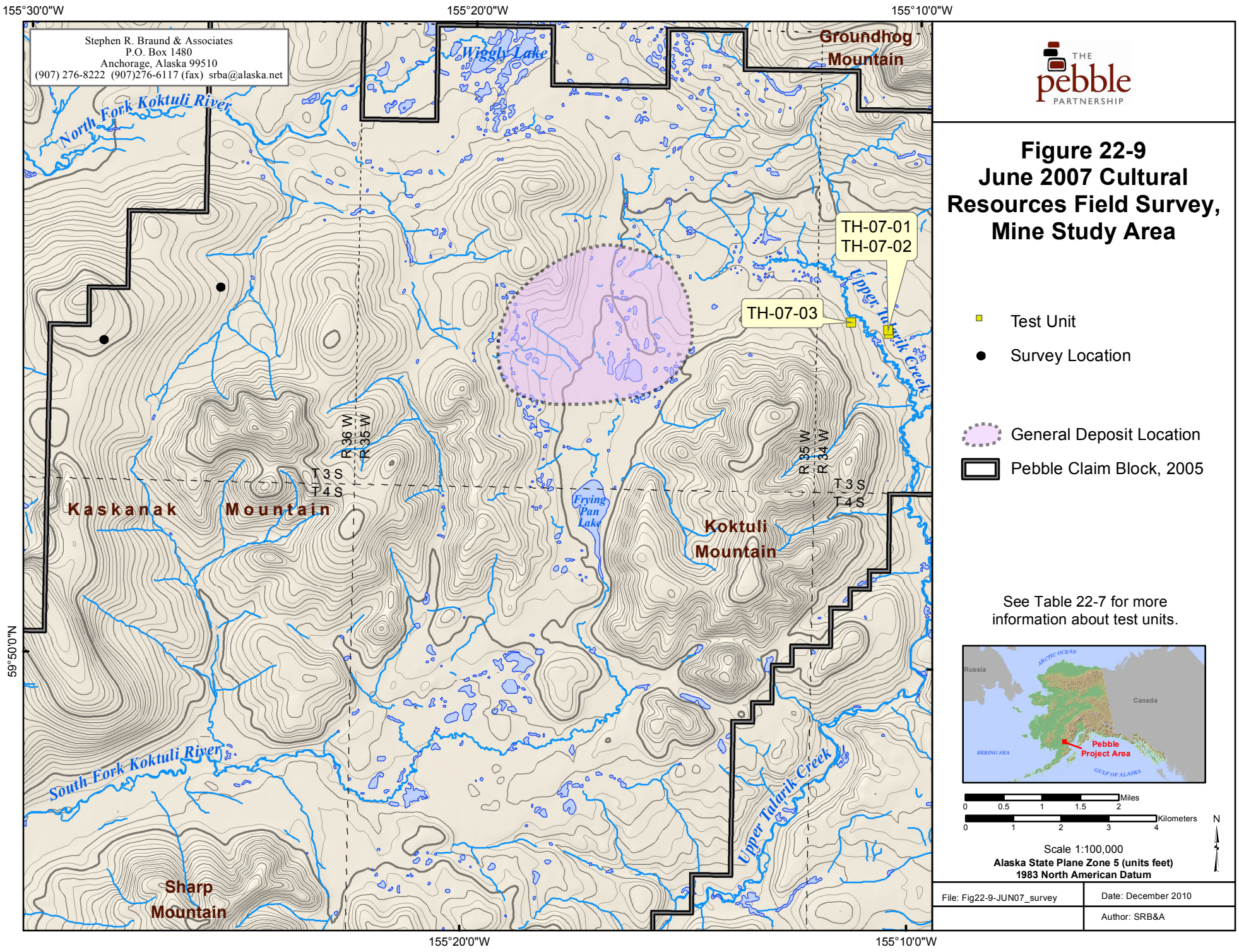


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Figure 22-9
June 2007 Cultural Resources Field Survey, Mine Study Area

- Test Unit
- Survey Location
- General Deposit Location
- Pebble Claim Block, 2005

See Table 22-7 for more information about test units.

Miles 0 0.5 1 1.5 2

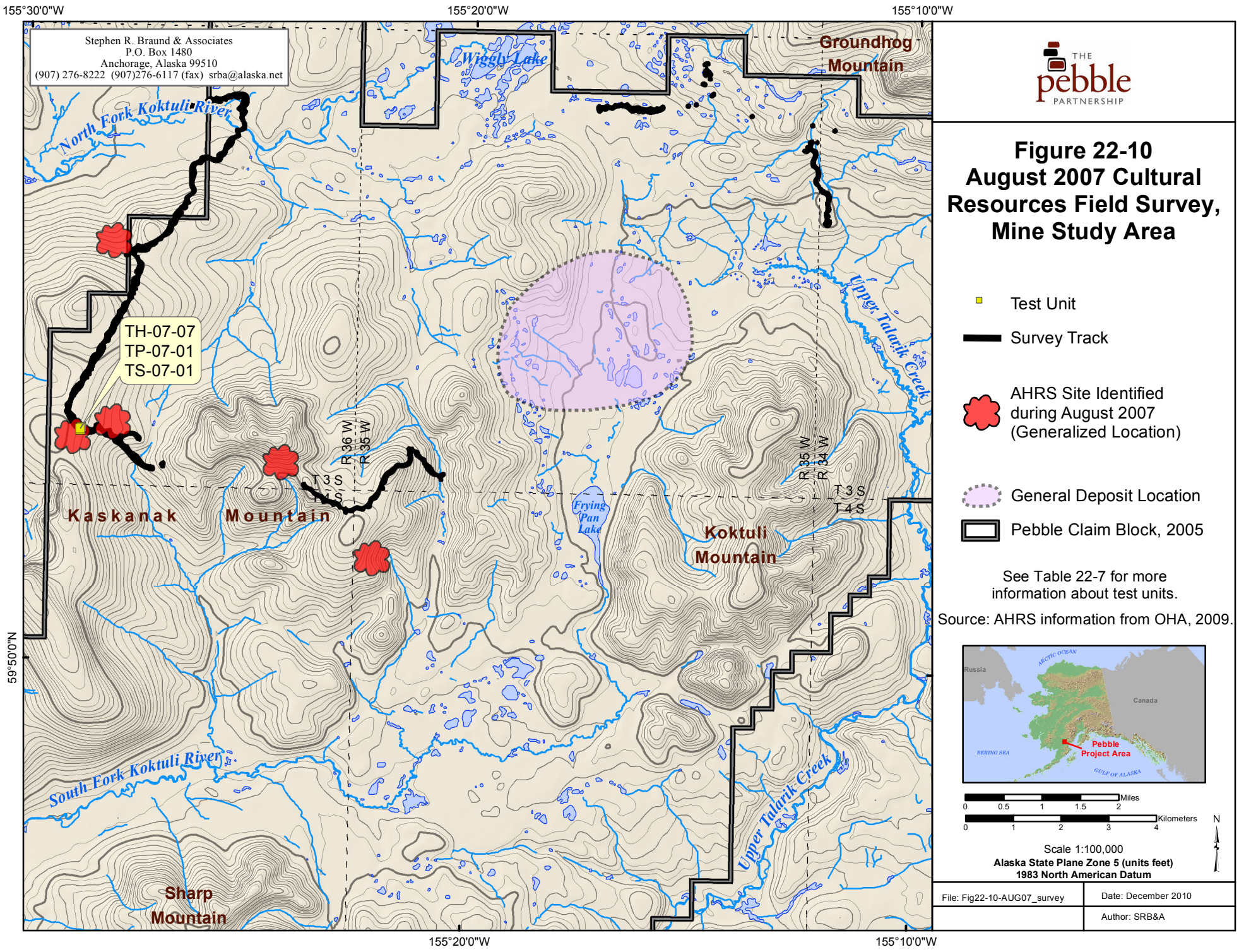
Kilometers 0 1 2 3 4

N

Scale 1:100,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-9-JUN07_survey	Date: December 2010
	Author: SRB&A


155°30'0"W
155°20'0"W
155°10'0"W
59°50'0"N
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Wiggly Lake
Groundhog Mountain
North Fork Koktuli River
TH-07-07
TP-07-01
TS-07-01
R 36 W
R 35 W
R 35 W
R 34 W
T 3 S
T 4 S
Kaskanak Mountain
Frying Pan Lake
Koktuli Mountain
Upper Talarik Creek
South Fork Koktuli River
Sharp Mountain
THE pebble PARTNERSHIP
Figure 22-10
August 2007 Cultural Resources Field Survey, Mine Study Area
Test Unit
Survey Track
AHRS Site Identified during August 2007 (Generalized Location)
General Deposit Location
Pebble Claim Block, 2005
See Table 22-7 for more information about test units.
Source: AHRS information from OHA, 2009.
Russia
Canada
ARCTIC OCEAN
BERING SEA
GULF OF ALASKA
Pebble Project Area
Miles
0 0.5 1 1.5 2
Kilometers
0 1 2 3 4
N
Scale 1:100,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-10-AUG07_survey
Date: December 2010
Author: SRB&A

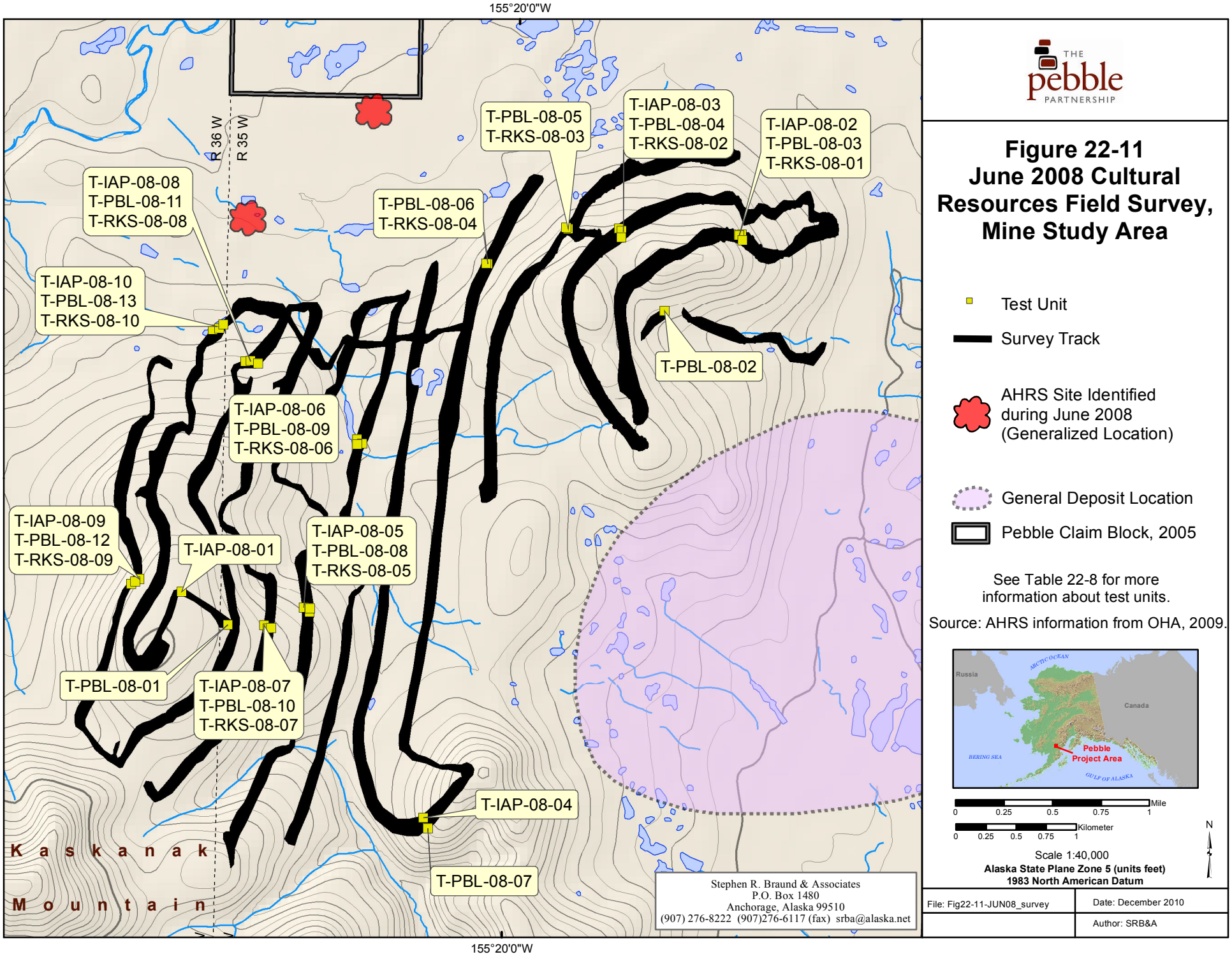
155°20'0"W
R 36 W
R 35 W
T-IAP-08-08
T-PBL-08-11
T-RKS-08-08
T-PBL-08-05
T-RKS-08-03
T-IAP-08-03
T-PBL-08-04
T-RKS-08-02
T-IAP-08-02
T-PBL-08-03
T-RKS-08-01
T-PBL-08-06
T-RKS-08-04
T-IAP-08-10
T-PBL-08-13
T-RKS-08-10
T-PBL-08-02
T-IAP-08-06
T-PBL-08-09
T-RKS-08-06
T-IAP-08-09
T-PBL-08-12
T-RKS-08-09
T-IAP-08-01
T-IAP-08-05
T-PBL-08-08
T-RKS-08-05
T-PBL-08-01
T-IAP-08-07
T-PBL-08-10
T-RKS-08-07
T-IAP-08-04
T-PBL-08-07
K a s k a n a k
M o u n t a i n
155°20'0"W
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Figure 22-11
June 2008 Cultural Resources Field Survey, Mine Study Area
Test Unit
Survey Track
AHRS Site Identified during June 2008 (Generalized Location)
General Deposit Location
Pebble Claim Block, 2005
See Table 22-8 for more information about test units.
Source: AHRS information from OHA, 2009.
ARCTIC OCEAN
Russia
Canada
BERING SEA
GULF OF ALASKA
Pebble Project Area
Mile
0 0.25 0.5 0.75 1
Kilometer
0 0.25 0.5 0.75 1
N
Scale 1:40,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-11-JUN08_survey
Date: December 2010
Author: SRB&A

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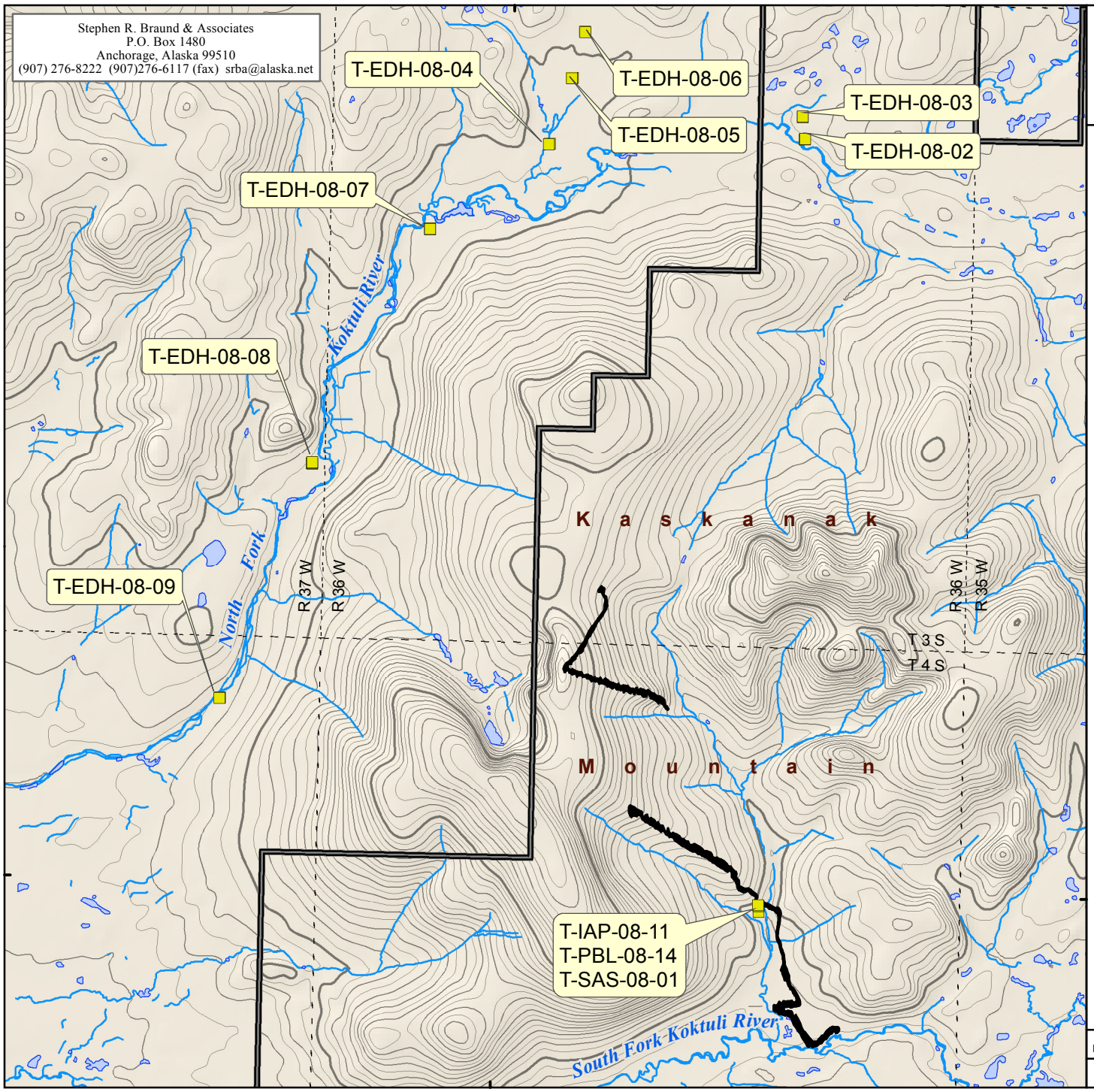

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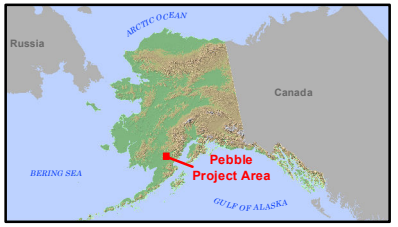
Figure 22-12
July 2008 Cultural Resources Field Survey, Kaskanak Mountain and Vicinity, Mine Study Area

Test Unit

Survey Track

Pebble Claim Block, 2005

See Table 22-8 for more information about test units.



Miles 0 0.5 1 1.5 2

Kilometers 0 0.5 1 1.5 2

N

Scale 1:85,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: 22-12-JUL08_survey_1	Date: December 2010
	Author: SRB&A

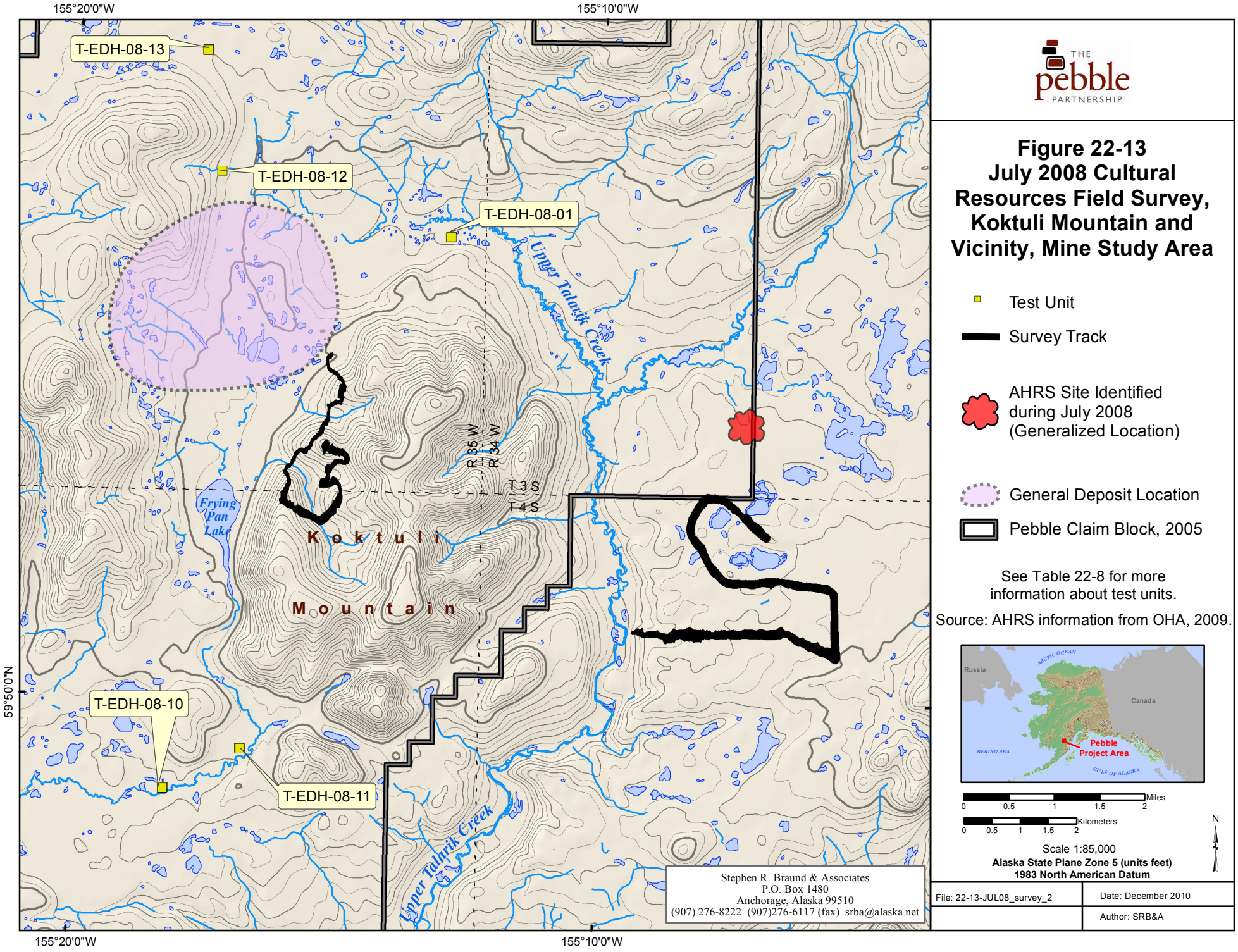


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Figure 22-13
July 2008 Cultural Resources Field Survey, Koktuli Mountain and Vicinity, Mine Study Area

- Test Unit
- Survey Track
- AHRS Site Identified during July 2008 (Generalized Location)
- General Deposit Location
- Pebble Claim Block, 2005

See Table 22-8 for more information about test units.

Source: AHRS information from OHA, 2009.

Miles 0 0.5 1 1.5 2

Kilometers 0 0.5 1 1.5 2

N

Scale 1:85,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: 22-13-JUL08_survey_2	Date: December 2010
	Author: SRB&A

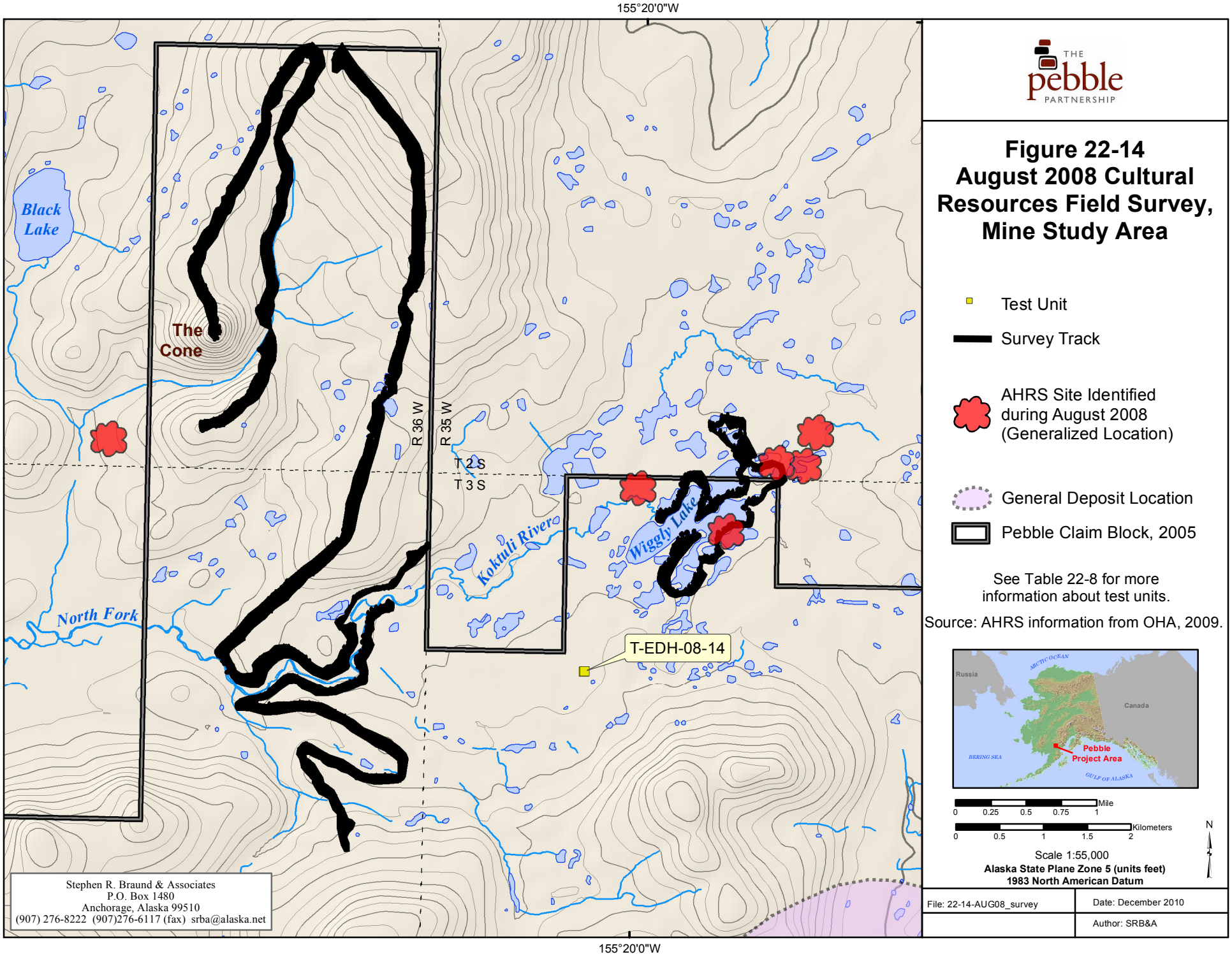

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Figure 22-14
August 2008 Cultural Resources Field Survey, Mine Study Area

- Test Unit
- Survey Track
- AHRS Site Identified during August 2008 (Generalized Location)
- General Deposit Location
- Pebble Claim Block, 2005

See Table 22-8 for more information about test units.

Source: AHRS information from OHA, 2009.

Mile 0 0.25 0.5 0.75 1

Kilometers 0 0.5 1 1.5 2

N

Scale 1:55,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: 22-14-AUG08_survey	Date: December 2010
	Author: SRB&A

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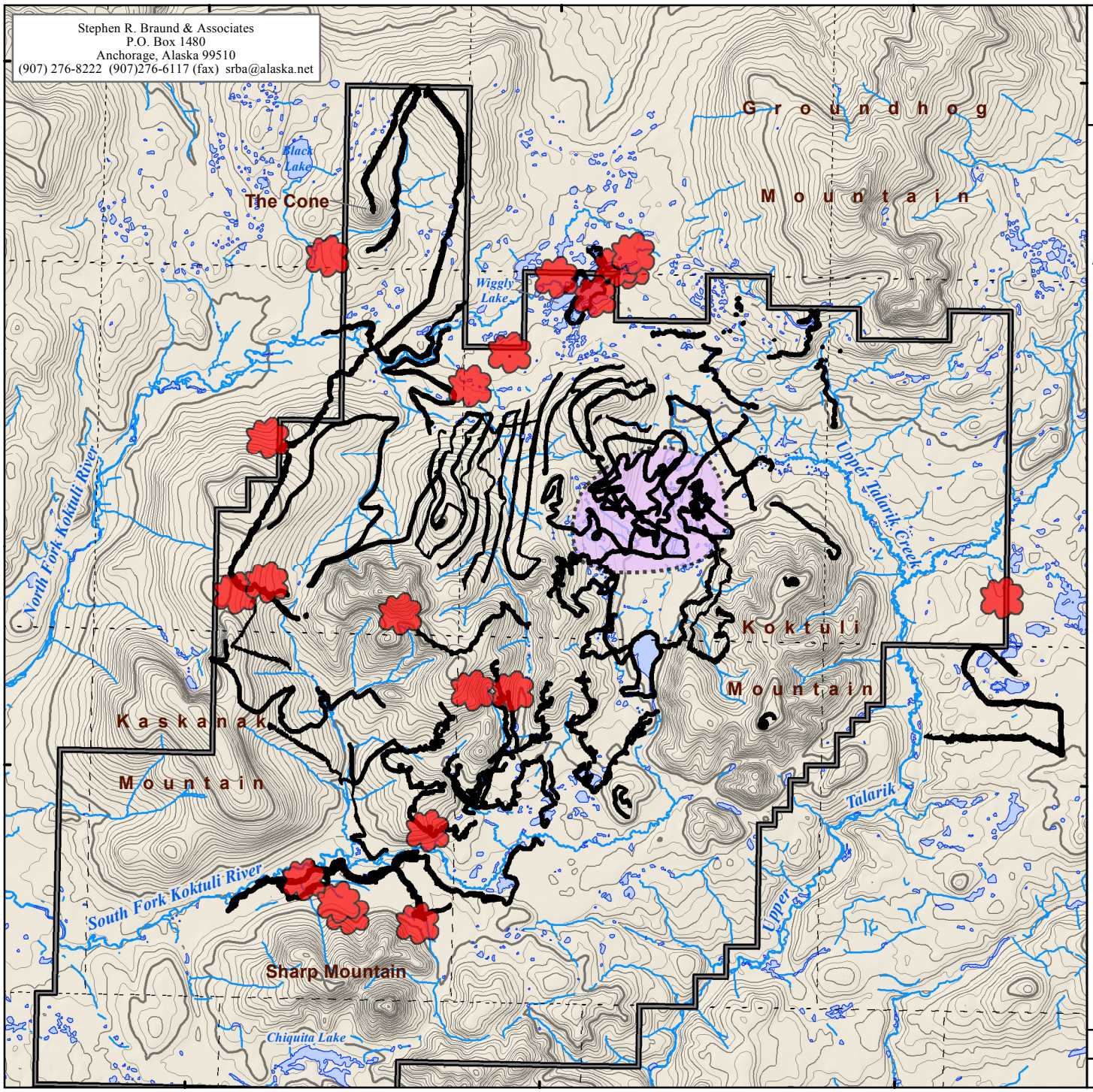
Figure 22-15
2004-2008 Cultural Resources Field Survey Areas with Survey Tracks, Mine Study Area



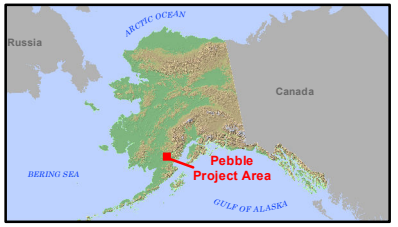
Survey Track

AHRS Site Identified during 2004-2008 (Generalized Location)

General Deposit Location

Pebble Claim Block, 2005

Source: AHRS information from OHA, 2009.

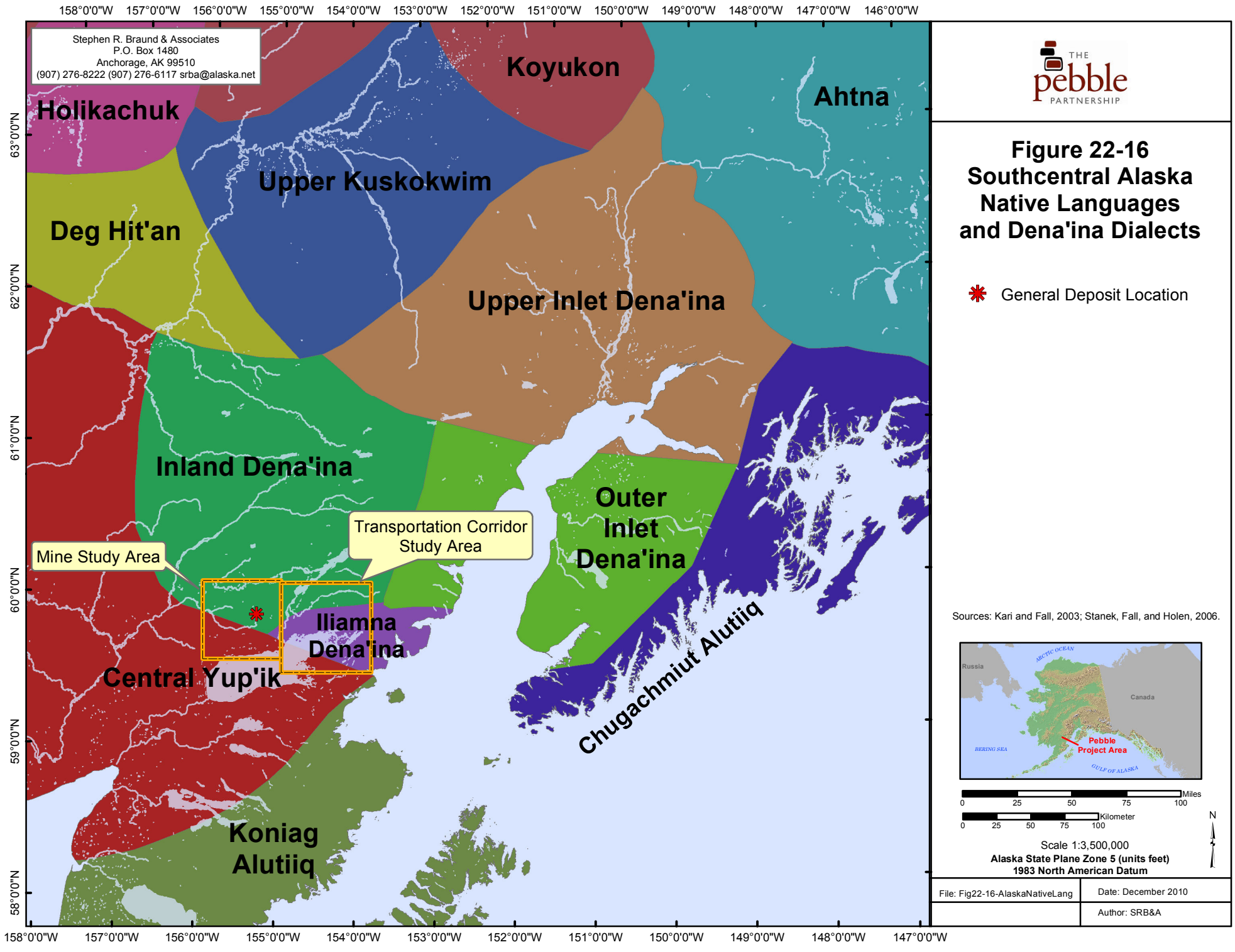


Miles 0 1 2 3 4
Kilometers 0 1 2 3 4

N

Scale 1:150,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-15-SurveyedArea04-08	Date: December 2010
	Author: SRB&A


158°0'0"W
157°0'0"W
156°0'0"W
155°0'0"W
154°0'0"W
153°0'0"W
152°0'0"W
151°0'0"W
150°0'0"W
149°0'0"W
148°0'0"W
147°0'0"W
146°0'0"W
63°0'0"N
62°0'0"N
61°0'0"N
60°0'0"N
59°0'0"N
58°0'0"N
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Holikachuk
Koyukon
Ahtna
Upper Kuskokwim
Deg Hit'an
Upper Inlet Dena'ina
Inland Dena'ina
Outer Inlet Dena'ina
Transportation Corridor Study Area
Mine Study Area
Iliamna Dena'ina
Central Yup'ik
Chugachmiut Alutiiq
Koniag Alutiiq
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Figure 22-16
Southcentral Alaska Native Languages and Dena'ina Dialects
General Deposit Location
Sources: Kari and Fall, 2003; Stanek, Fall, and Holen, 2006.
ARCTIC OCEAN
Russia
Canada
BERING SEA
GULF OF ALASKA
Pebble Project Area
Miles
0 25 50 75 100
Kilometer
0 25 50 75 100
N
Scale 1:3,500,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-16-AlaskaNativeLang
Date: December 2010
Author: SRB&A

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Figure 22-17
Detail of Map of Russian America, 1802

Source: U.S. Library of Congress
http://hdl.loc.gov/loc.gmd/g9235.mf000027

N

File: Fig22-17-Russ_1802	Date: December 2010
	Author: SRB&A

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Figure 22-18
Detail of Map of Russian America, 1844

Source: U.S. Library of Congress
http://hdl.loc.gov/loc.gmd/g9780.mf000026

File: Fig22-18-Russ_1844	Date: December 2010
	Author: SRB&A

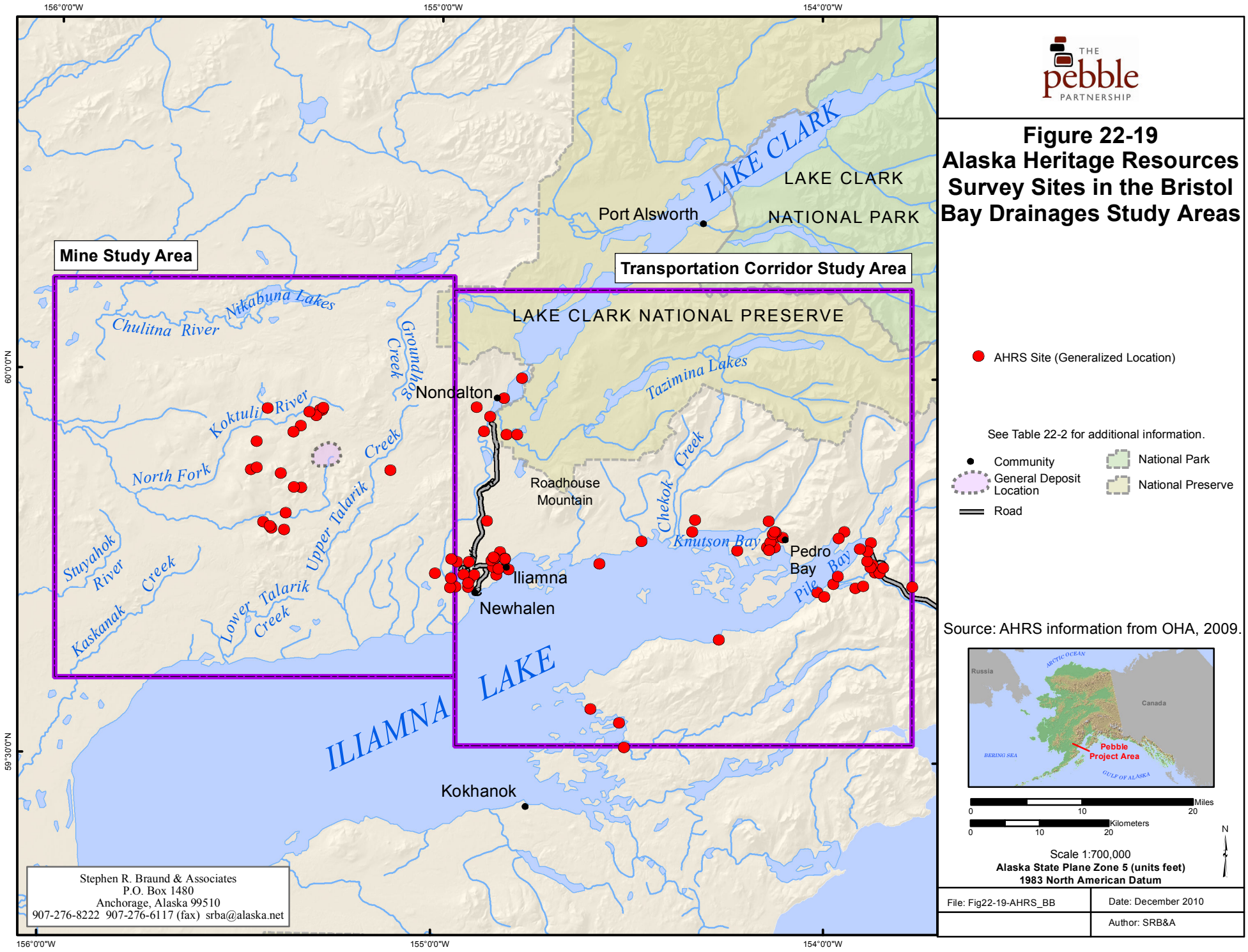
156°0'0"W
155°0'0"W
154°0'0"W
60°0'0"N
59°30'0"N
Mine Study Area
Transportation Corridor Study Area
LAKE CLARK NATIONAL PRESERVE
LAKE CLARK
NATIONAL PARK
LAKE CLARK
Port Alsworth
Nikabuna Lakes
Chulitna River
Groundhog Creek
Nondalton
Tazimina Lakes
Koktuli River
North Fork
Creek
Roadhouse Mountain
Chekok Creek
Knutson Bay
Pedro Bay
Pile Bay
Upper Talarik Creek
Stuyahok River
Kaskanak Creek
Lower Talarik Creek
Iliamna
Newhalen
ILIAMNA LAKE
Kokhanok
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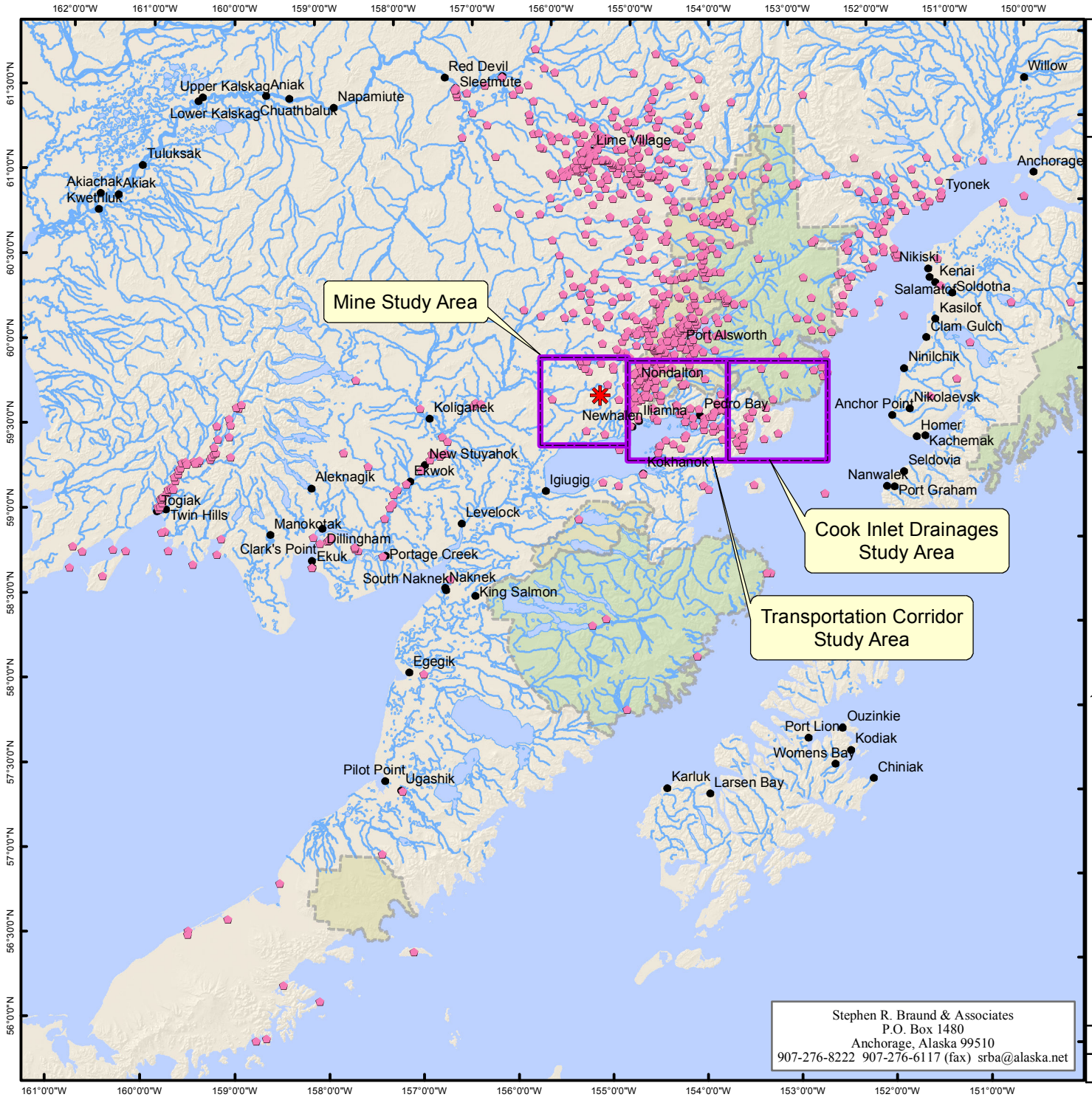
Figure 22-19
Alaska Heritage Resources Survey Sites in the Bristol Bay Drainages Study Areas
AHRS Site (Generalized Location)
See Table 22-2 for additional information.
Community
General Deposit Location
Road
National Park
National Preserve
Source: AHRS information from OHA, 2009.
Russia
Canada
ARCTIC OCEAN
BERING SEA
GULF OF ALASKA
Pebble Project Area
Miles
0 10 20
Kilometers
0 10 20
N
Scale 1:700,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-19-AHRS_BB
Date: December 2010
Author: SRB&A



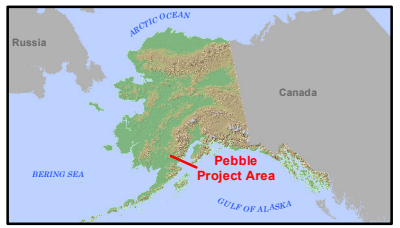
THE pebble PARTNERSHIP

Figure 22-20
Locations of Place Names in the Bristol Bay and Cook Inlet Drainages

- Place Name Location
- Community
- General Deposit Location
- National Park
- National Preserve

Map shows 808 place name locations.

Sources: Crowell, Steffian, and Pullar, 2001; Ellanna and Balluta, 1992; Gross, 1991; Jacobson, 1984; Kari, 1977; Kari and Fall, 2003; Kari and Kari, 1982; Kari, Kari, and Balluta, 1986; Martin and Katz, 1910; and Wright and Chythlook, 1985.



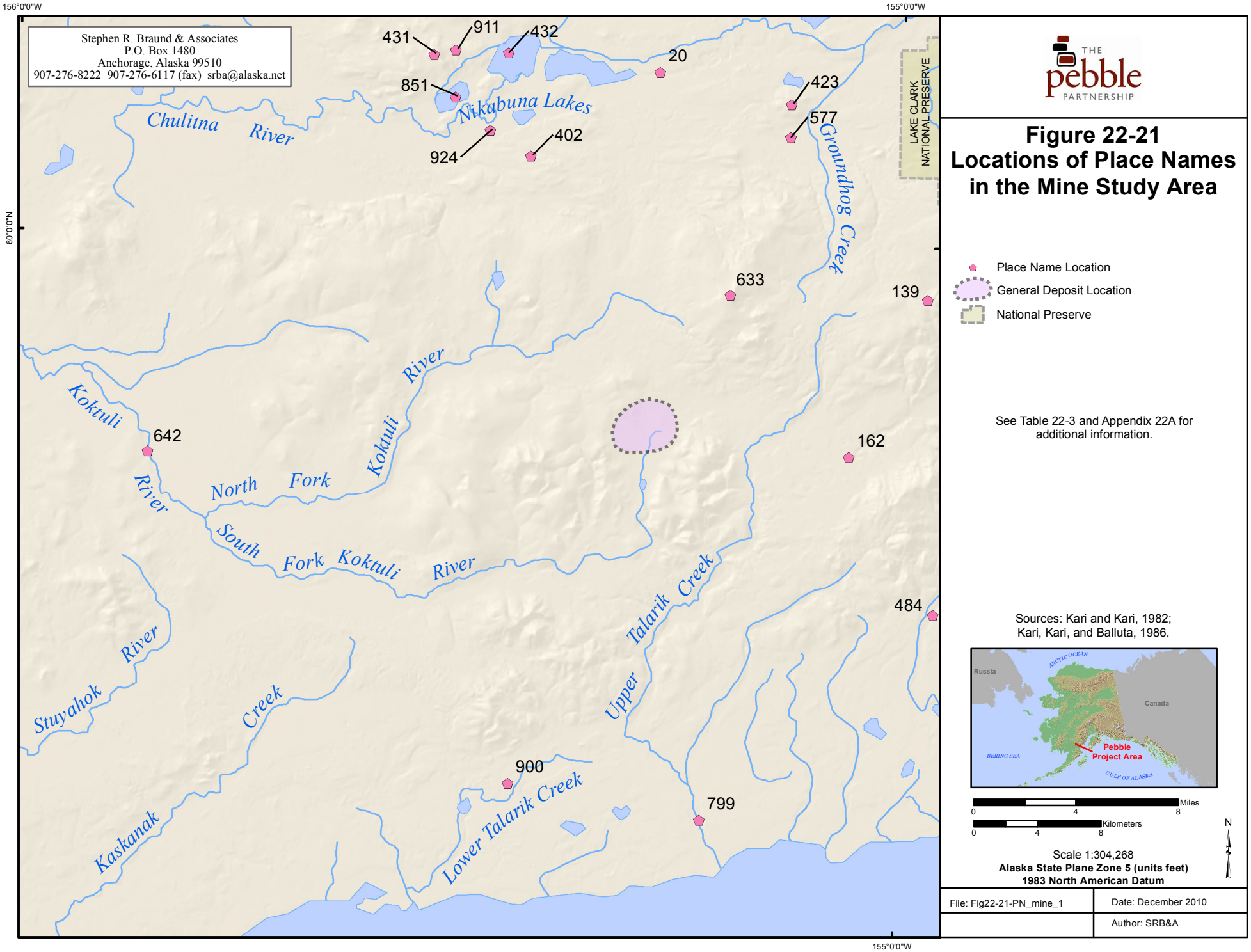
Miles 0 25 50
Kilometers 0 25 50

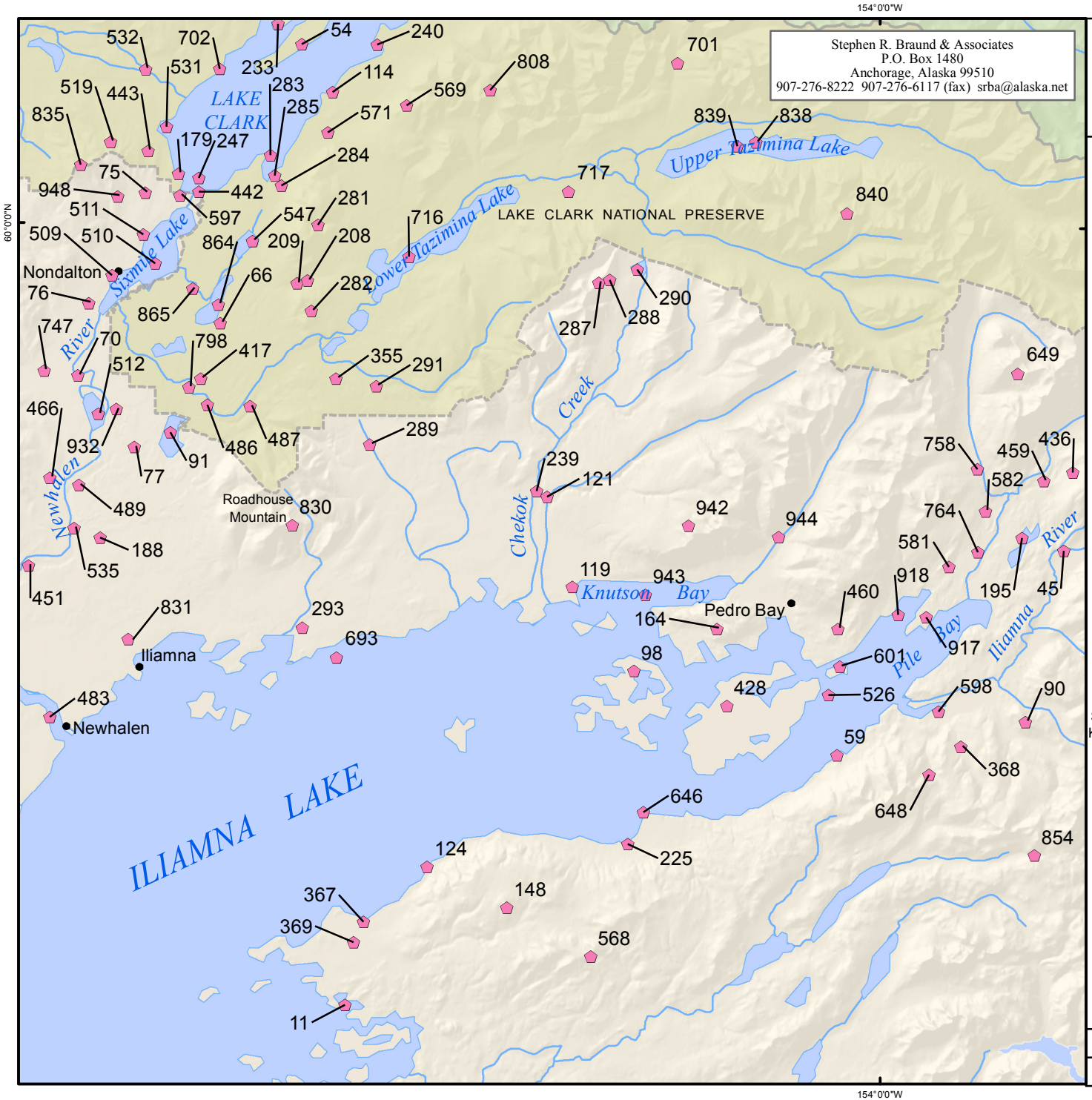
N

Scale 1:3,698,739
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 907-276-6117 (fax) srba@alaska.net

File: Fig22-20-PN_overall_1	Date: December 2010
	Author: SRB&A


156°0'0"W
155°0'0"W
60°0'0"N
Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 907-276-6117 (fax) srba@alaska.net
431
911
432
20
851
423
577
924
402
633
139
642
162
484
900
799
Chulitna River
Nikabuna Lakes
Groundhog Creek
LAKE CLARK NATIONAL PRESERVE
Koktuli River
North Fork Koktuli River
South Fork Koktuli River
Talarik Creek
Upper Talarik Creek
Lower Talarik Creek
Stuyahok River
Kaskanak Creek
THE pebble PARTNERSHIP
Figure 22-21
Locations of Place Names in the Mine Study Area
Place Name Location
General Deposit Location
National Preserve
See Table 22-3 and Appendix 22A for additional information.
Sources: Kari and Kari, 1982; Kari, Kari, and Balluta, 1986.
ARCTIC OCEAN
Russia
Canada
BERING SEA
GULF OF ALASKA
Pebble Project Area
Miles
0 4 8
Kilometers
0 4 8
N
Scale 1:304,268
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
File: Fig22-21-PN_mine_1
Date: December 2010
Author: SRB&A



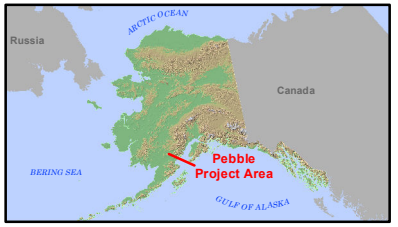
THE pebble PARTNERSHIP

Figure 22-22
Locations of Place Names in the Transportation Corridor Study Area

- Place Name Location
- Community
- National Park
- National Preserve

See Table 22-3 and Appendix 22A for additional information.

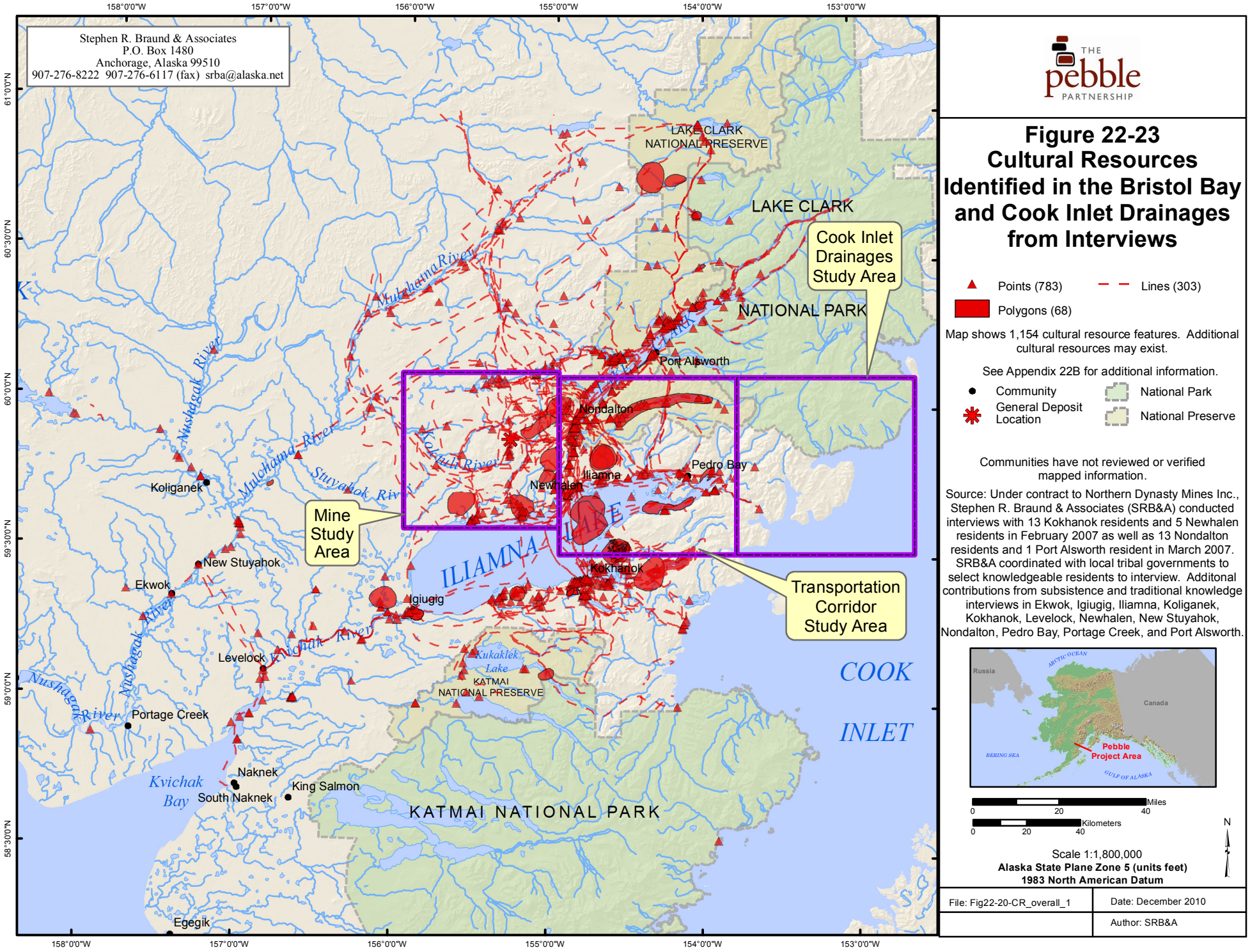
Sources: Ellanna and Balluta, 1992; Kari and Kari, 1982; Kari, Kari, and Balluta, 1986; Wright and Chythlook 1985.



Miles 0 5 10
Kilometers 0 5 10
N

Scale 1:347,477
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-22-PN_road_1	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-23
Cultural Resources Identified in the Bristol Bay and Cook Inlet Drainages from Interviews

Points (783)
Lines (303)
Polygons (68)

Map shows 1,154 cultural resource features. Additional cultural resources may exist.

See Appendix 22B for additional information.

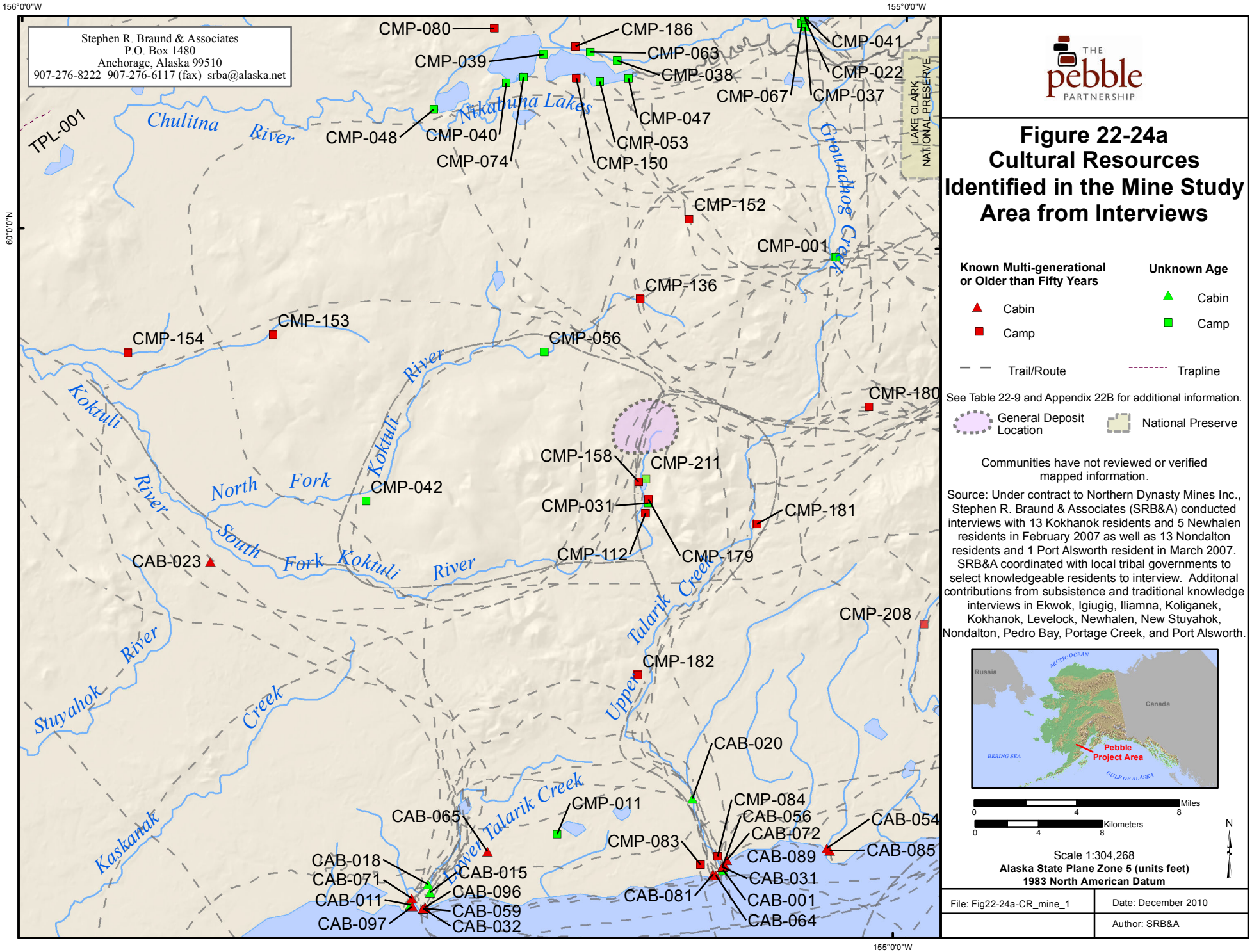
Community
General Deposit Location
National Park
National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.

Scale 1:1,800,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-20-CR_overall_1	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-24a Cultural Resources Identified in the Mine Study Area from Interviews

Known Multi-generational or Older than Fifty Years

- Cabin
- Camp

Unknown Age

- Cabin
- Camp

Trail/Route

Trapline

See Table 22-9 and Appendix 22B for additional information.

General Deposit Location

National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.

Miles 0 4 8

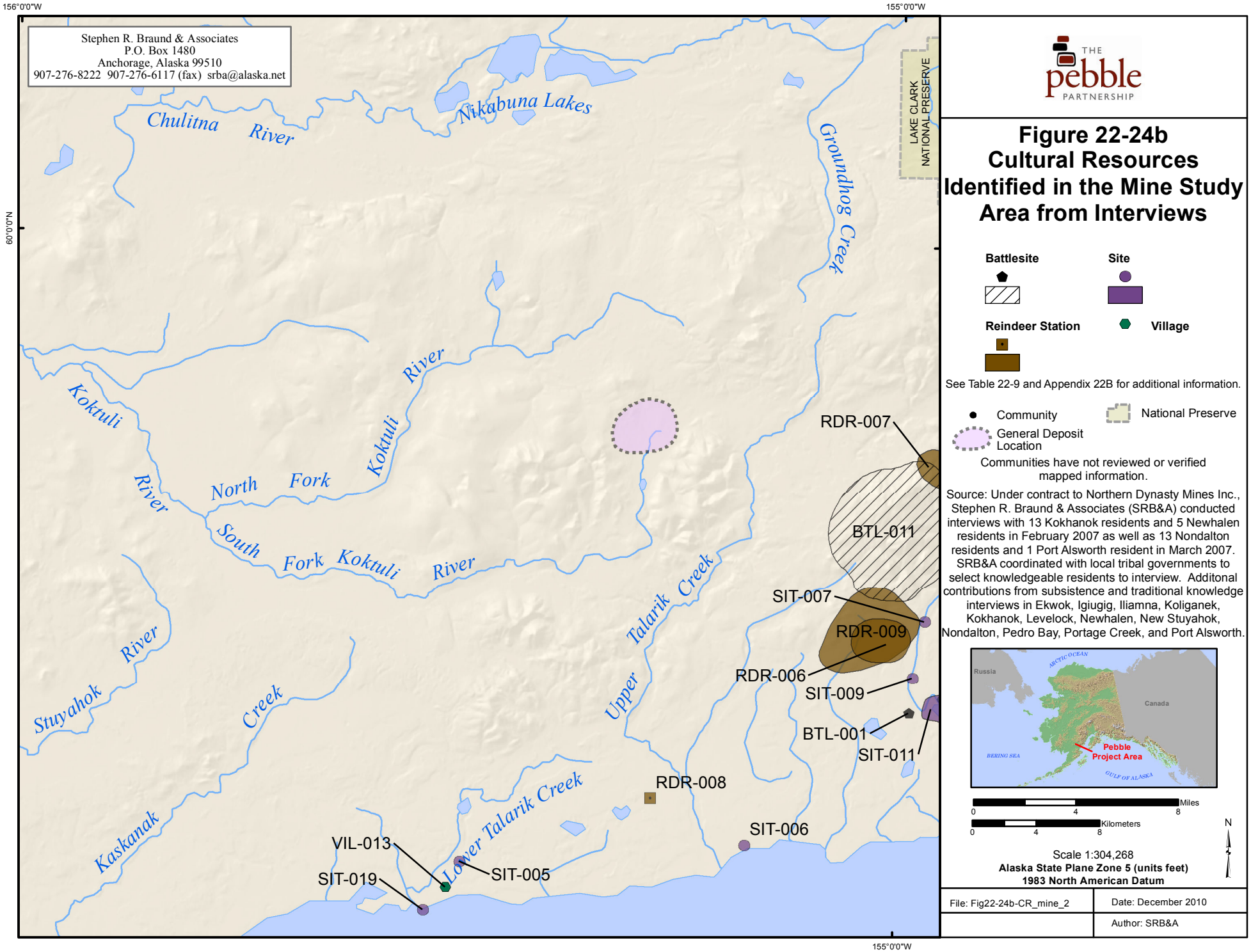
Kilometers 0 4 8

N

Scale 1:304,268

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-24a-CR_mine_1	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-24b
Cultural Resources Identified in the Mine Study Area from Interviews

Battlesite **Site**

Reindeer Station **Village**

See Table 22-9 and Appendix 22B for additional information.

Community
National Preserve
General Deposit Location

Communities have not reviewed or verified mapped information.

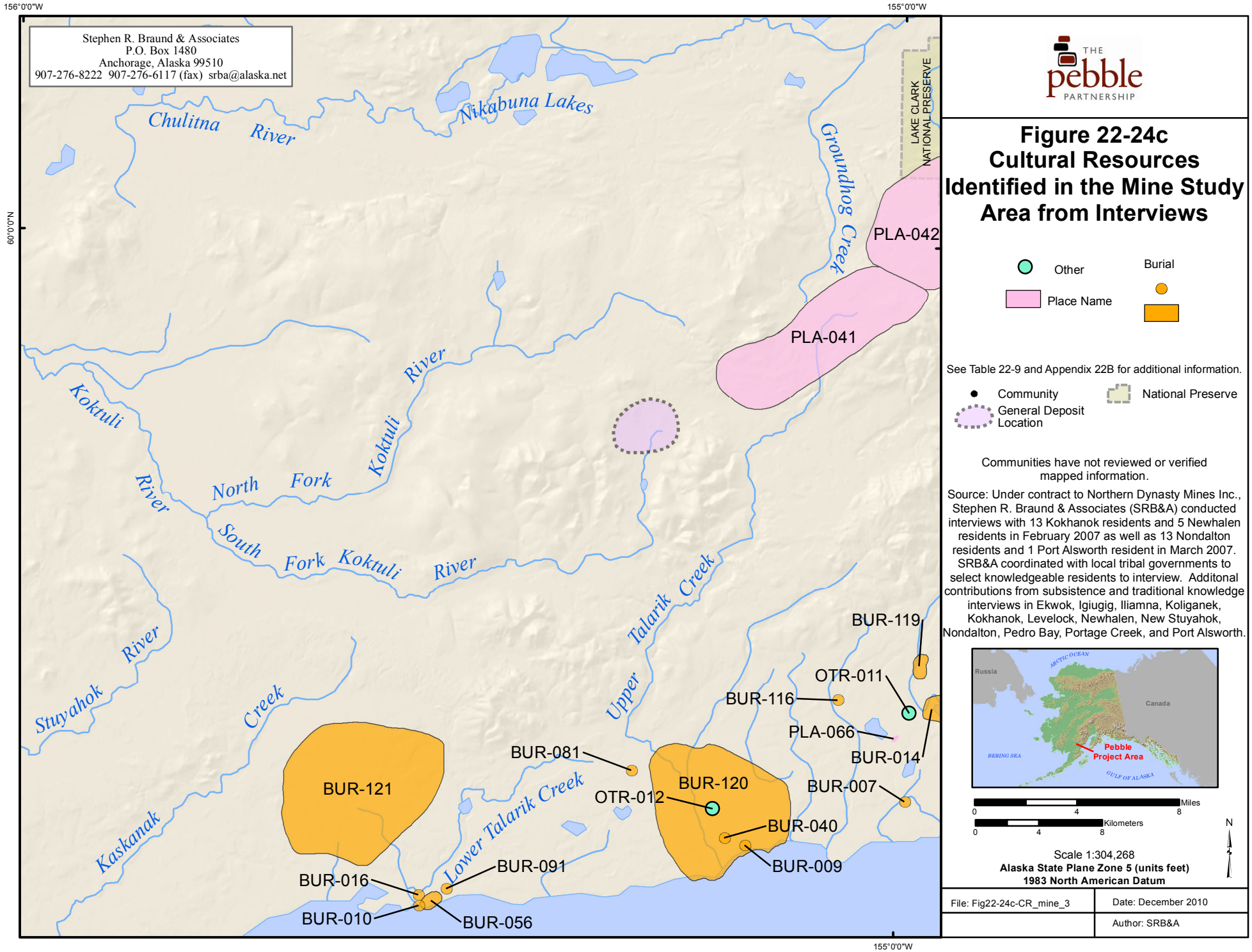
Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.

Miles 0 4 8
Kilometers 0 4 8

N

Scale 1:304,268
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-24b-CR_mine_2	Date: December 2010
	Author: SRB&A


156°0'0"W
155°0'0"W
60°0'0"N
Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 907-276-6117 (fax) srba@alaska.net
Chulitna River
Nikabuna Lakes
Groundhog Creek
LAKE CLARK NATIONAL PRESERVE
PLA-042
PLA-041
Koktuli River
North Fork Koktuli River
South Fork Koktuli River
Talarik Creek
Upper Talarik Creek
Lower Talarik Creek
Stuyahok River
Kaskanak Creek
BUR-119
OTR-011
BUR-116
PLA-066
BUR-014
BUR-081
BUR-121
BUR-120
OTR-012
BUR-007
BUR-040
BUR-009
BUR-091
BUR-016
BUR-010
BUR-056
THE pebble PARTNERSHIP
Figure 22-24c
Cultural Resources Identified in the Mine Study Area from Interviews
Other
Burial
Place Name
See Table 22-9 and Appendix 22B for additional information.
Community
National Preserve
General Deposit Location
Communities have not reviewed or verified mapped information.
Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.
ARCTIC OCEAN
Russia
Canada
BERING SEA
GULF OF ALASKA
Pebble Project Area
Miles
0 4 8
Kilometers
0 4 8
N
Scale 1:304,268
Alaska State Plane Zone 5 (units feet)
1983 North American Datum
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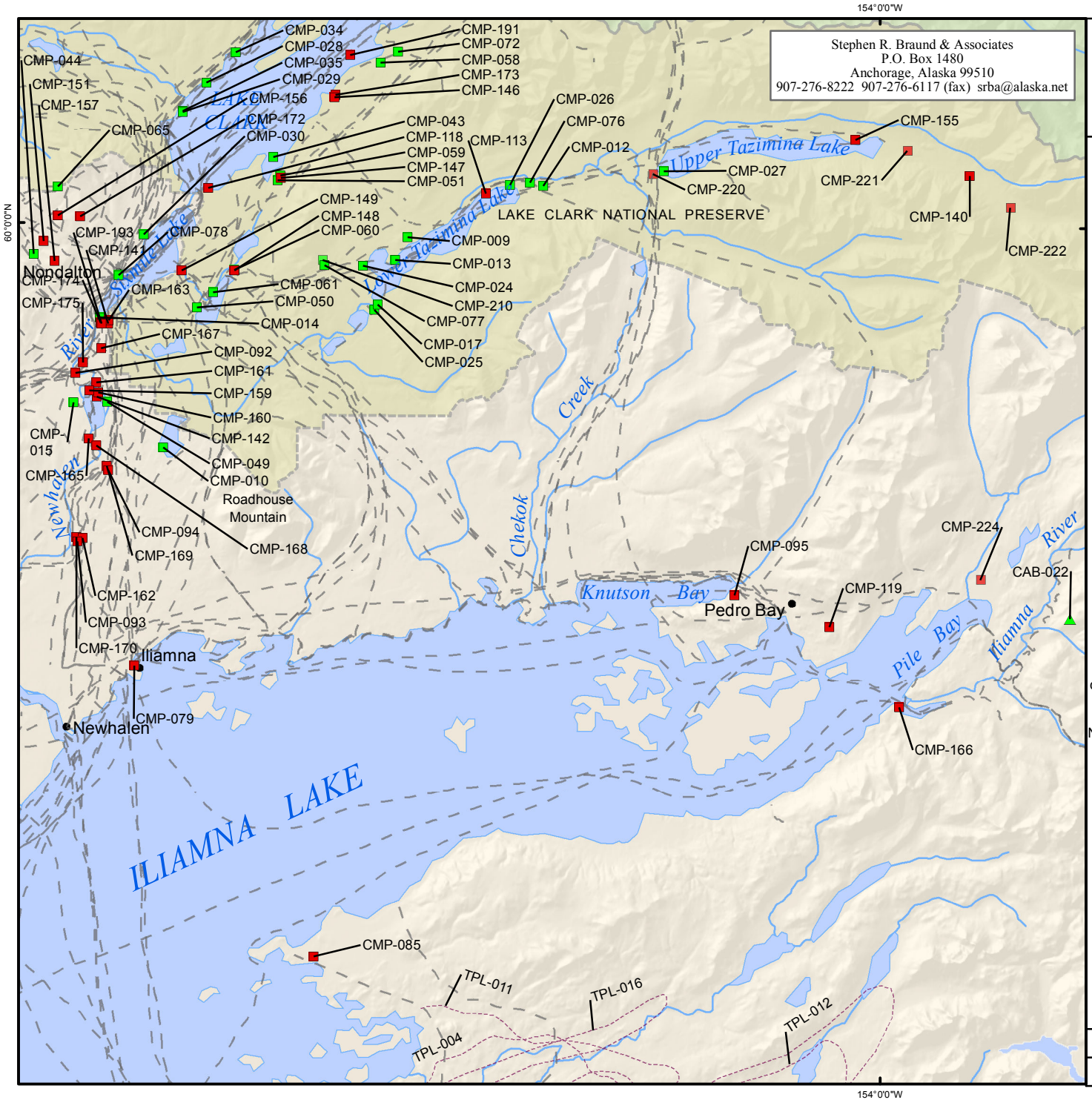
Date: December 2010
Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-25a
Cultural Resources Identified in the Transportation Corridor Study Area from Interviews

Known Multi-generational or Older than Fifty Years

- Camp
- Trail/Route

Unknown Age

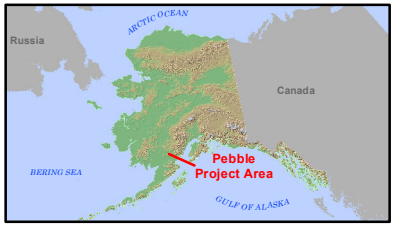
- Cabin
- Camp
- Trapline

See Table 22-9 and Appendix 22B for additional information.

- Community
- National Park
- National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.



Miles 0 5 10

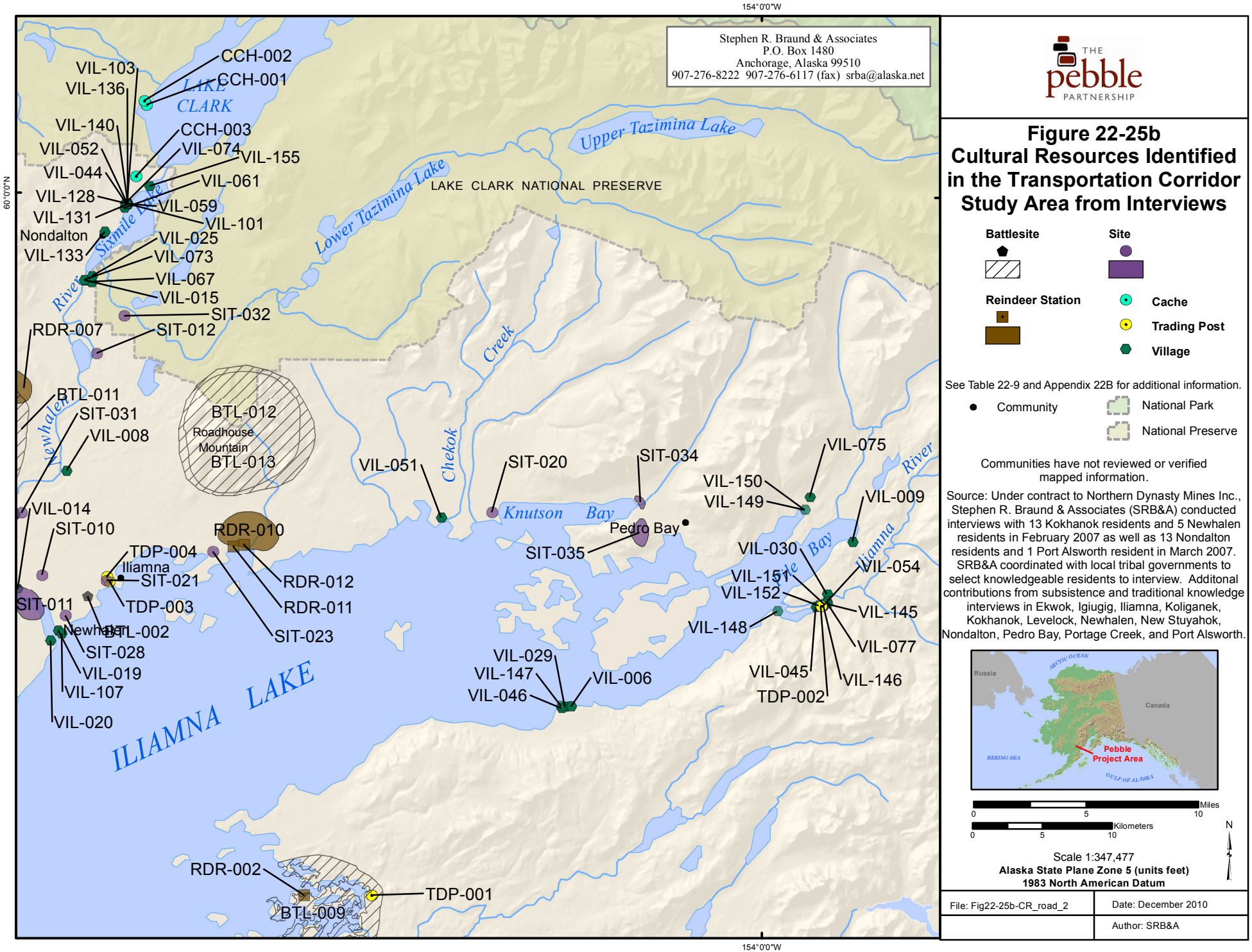
Kilometers 0 5 10

N

Scale 1:347,477

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-25a-CR_road_1	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-25b
Cultural Resources Identified in the Transportation Corridor Study Area from Interviews

Battlesite

Site

Reindeer Station

Cache

Trading Post

Village

See Table 22-9 and Appendix 22B for additional information.

Community

National Park

National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.

Miles 0 5 10

Kilometers 0 5 10

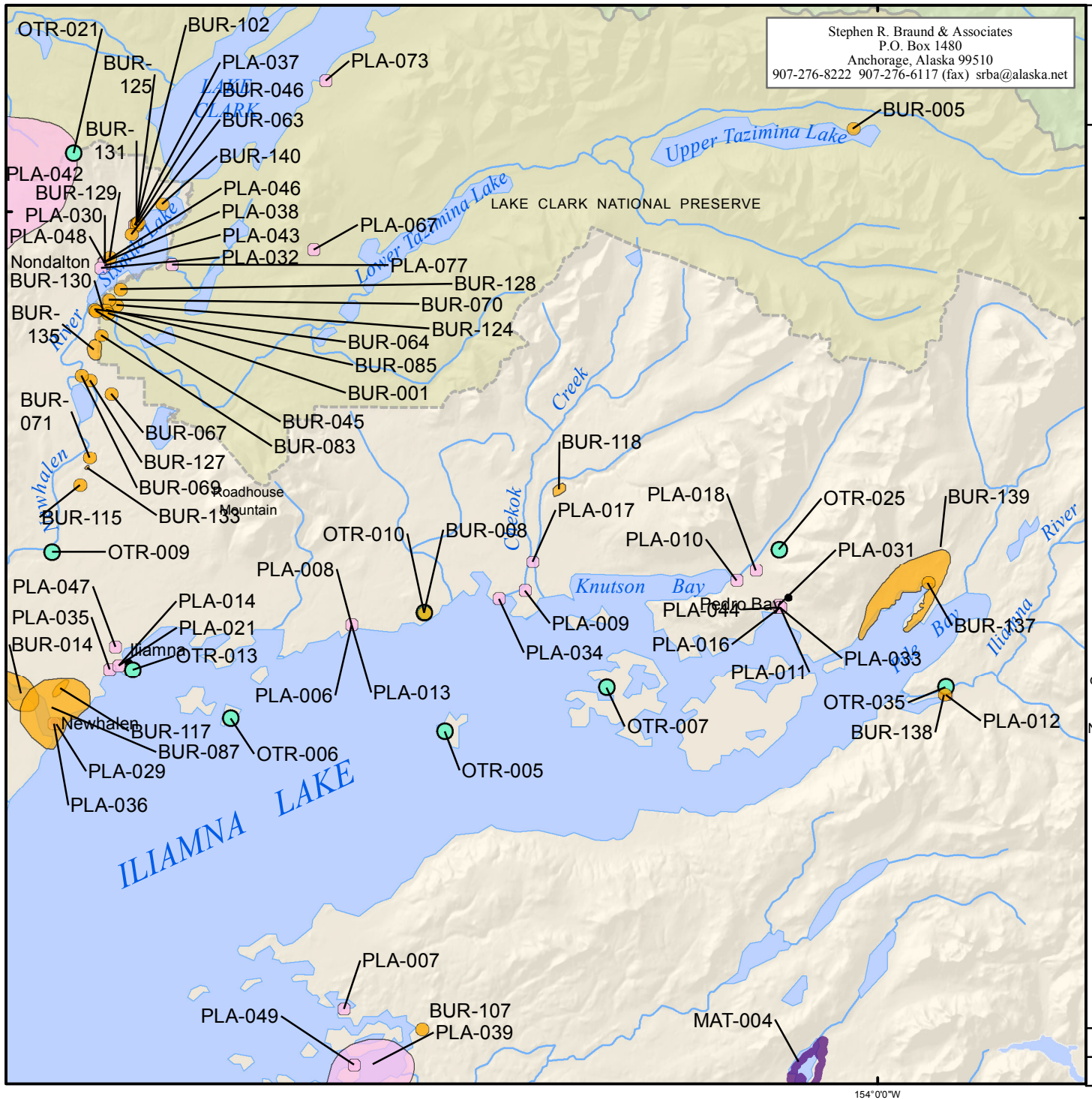
N

Scale 1:347,477

Alaska State Plane Zone 5 (units feet)

1983 North American Datum

File: Fig22-25b-CR_road_2	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-25c
Cultural Resources Identified in the Transportation Corridor Study Area from Interviews

Burial

Place Name

Other

Material Source

See Table 22-9 and Appendix 22B for additional information.

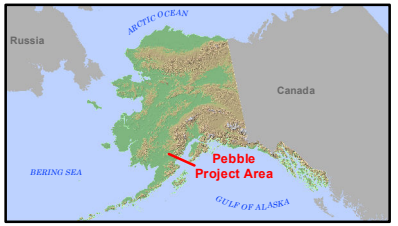
Community

National Park

National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additonal contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.



Miles 0 5 10

Kilometers 0 5 10

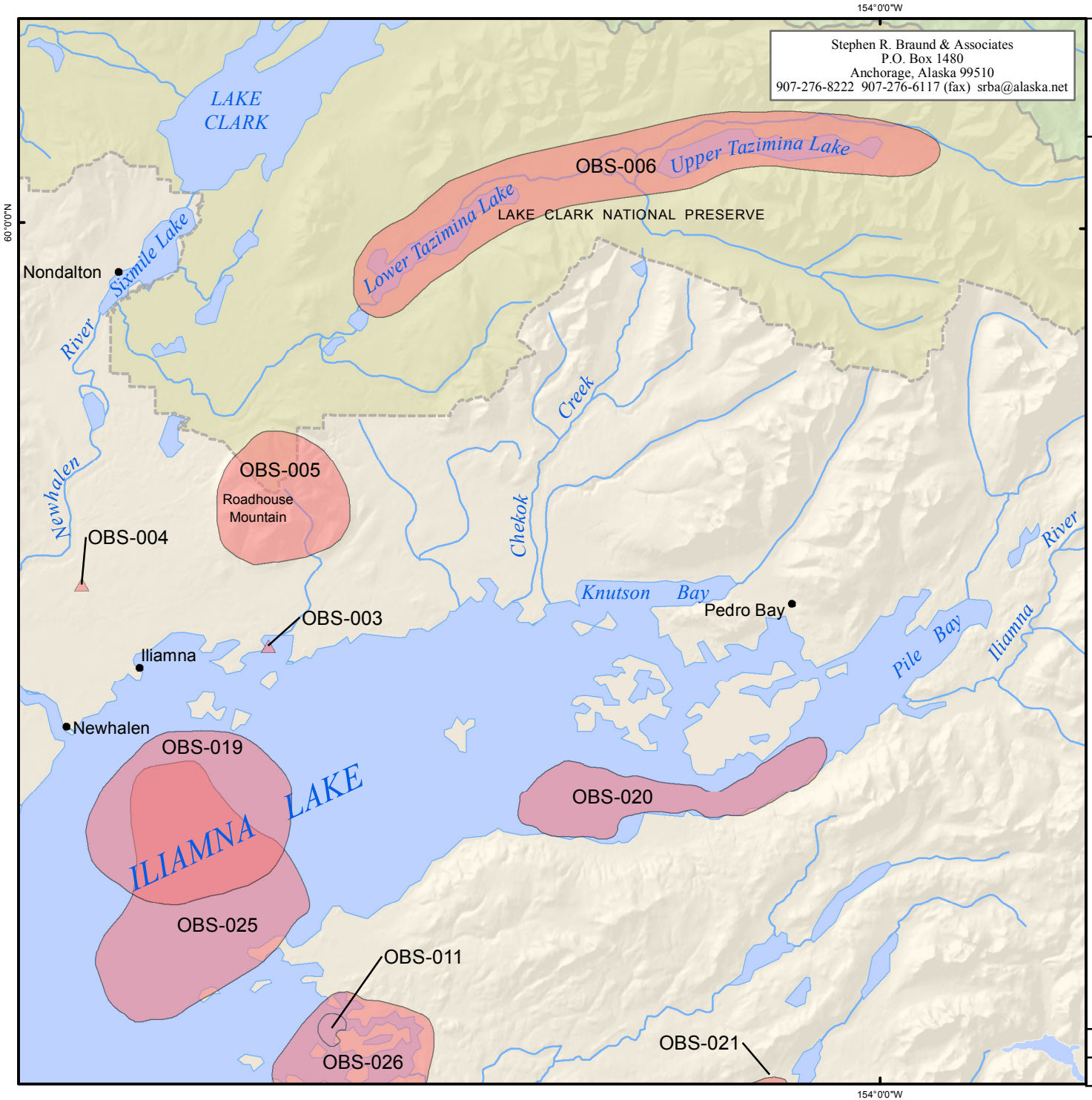
N

Scale 1:347,477

Alaska State Plane Zone 5 (units feet)

1983 North American Datum

File: Fig22-25c-CR_road_3	Date: December 2010
	Author: SRB&A



THE pebble PARTNERSHIP

Figure 22-25d
Cultural Resources Identified in the Transportation Corridor Study Area from Interviews

Observation/Sighting

See Table 22-9 and Appendix 22B for additional information.

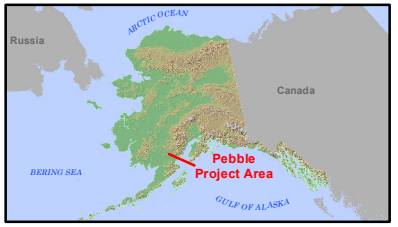
Community

National Park

National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview.



Miles 0 5 10

Kilometers 0 5 10

N

Scale 1:347,477

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig22-25d-CR_road_4	Date: December 2010
	Author: SRB&A

PHOTOGRAPHS

PHOTO 22-1: Panoramic overview of the general deposit location. View east from Kaskanak Mountain to Koktuli Mountain with Frying Pan Lake to the far right. August 2004.

PHOTO 22-2: Panoramic overview of the general deposit area looking westward from the base of Koktuli Mountain near the eastern edge of the deposit. July 2004.

PHOTO 22-3: Overview of Frying Pan Lake from Kaskanak Mountain. Glacial-outwash features, kettles, and drumlins are visible. Vegetation is sparse except in locations protected from the wind. July 2004.

PHOTO 22-4: Northwestern ridge of Kaskanak Mountain showing exposed rock and patchy vegetation. August 2004.

PHOTO 22-5: Outlet of the valley north of Kaskanak Mountain, looking south over creek. August 2004.

PHOTO 22-6: Stream crossing in the valley north of Kaskanak Mountain. The stream is a tributary of the North Fork Koktuli River. Clear flat areas among the alders and cottonwoods could have been campsites. August 2004.

PHOTO 22-7: Talus slope in the valley north of Kaskanak Mountain. August 2004.

PHOTO 22-8: East side of valley north of Kaskanak Mountain. At the base of distant slope are numerous bedrock exposures. August 2004.

PHOTO 22-9: Bedrock tor that was examined for cached items and petroglyphs. August 2004.

PHOTO 22-10: Bedrock face at south end of the valley north of Kaskanak Mountain that was examined for cached items, petroglyphs, and evidence of use as a hunting blind or lookout station. August 2004

PHOTO 22-11: South end of the same valley, with an array of aligned boulders that could indicate a caribou fence. August 2004.

PHOTO 22-12: Mouth of valley south of Kaskanak Mountain. South Fork Koktuli River with relict bluffs in distance to south. September 2004

PHOTO 22-13: North end of the valley southeast of Kaskanak Mountain. September 2004.

PHOTO 22-14: Field crew excavating test units on alluvial fan where mountain streams converge. No cultural material was found here. September 2004.

PHOTO 22-15: Beaver ponds next to alluvial fan at stream confluence. September 2004.

PHOTO 22-16: View south from site on 1,222-foot hill south of Frying Pan Lake. September 2004.

PHOTO 22-17: Site on 1,567-foot ridge west of the Pebble Deposit. September 2004.

PHOTO 22-18: Site of existing VHF repeater on the north end of Koktuli Mountain. Extremely high winds and cold weather challenge equipment in this location. September 2004.

PHOTO 22-19: Site on south end of Koktuli Mountain. September 2004.

PHOTO 22-20: Test Unit TS-04-02 near perched lake southeast of deposit. Two field-crew members in the distance excavate additional test units. July 2004.

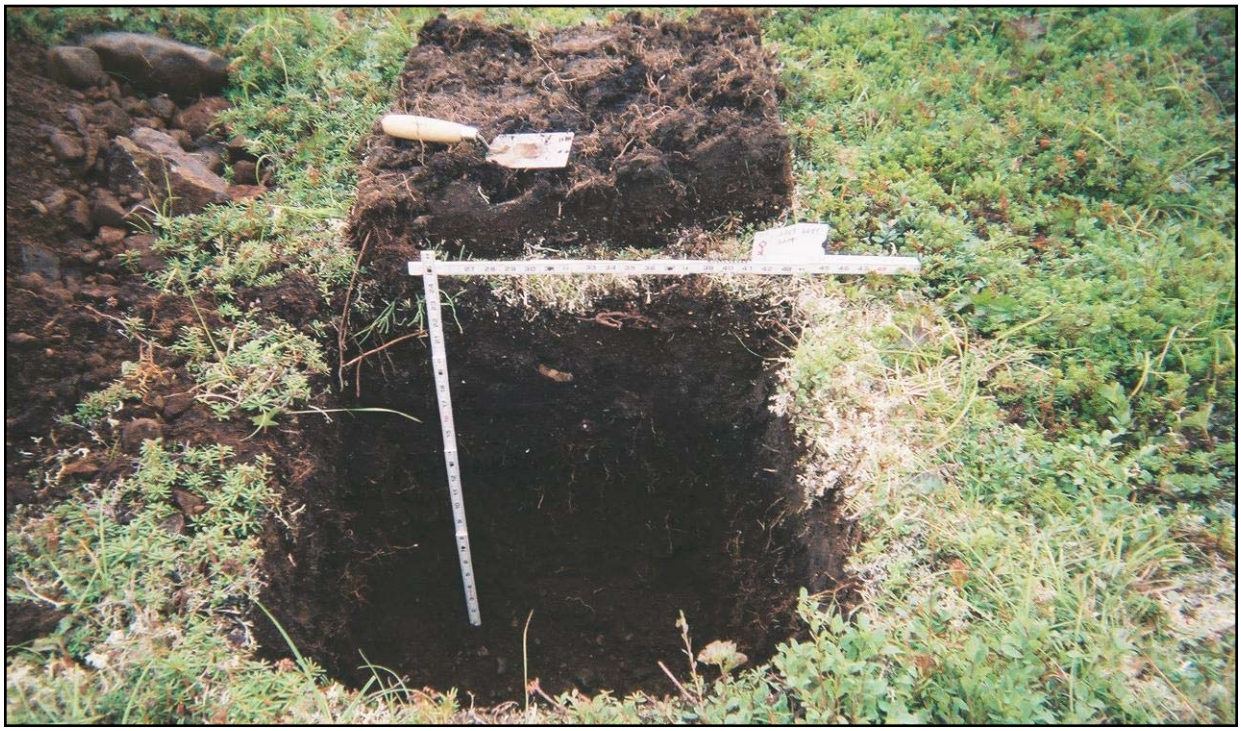


PHOTO 22-21: Test Unit TH-04-15 shows dark soil with cobbles in an area with some soil. July 2004.

PHOTO 22-22: Test Unit TT-04-09 shows the rounded cobbles with silt matrix common to glacial-outwash features in the general deposit area. June 2004.

PHOTO 22-23: Test Unit TS-04-03 shows fractured gravel just below the surface mat. July 2004.

PHOTO 22-24: The north shore of Frying Pan Lake, which features a berm deposit of sand that appears to be derived from locally degraded rocks. North beyond the sand berm the valley bottom reverts to a floor of angular, fractured local bedrock in fluvial channels surrounded by soil retained by beaver dams. Beavers have played an important role in the evolution of landforms in the southern portion of the valley bottom. September 2004.

PHOTO 22-25: Test Unit TT-04-14 in the sandy bank along the north side of Frying Pan Lake in what looked like a possible collapsed cache pit. September 2004.

PHOTO 22-26: Excavation of geotechnical assay pit dug with a helicopter-slung excavator. September 2004.

PHOTO 22-27: Overview of the area southeast of Kaskanak Mountain from north of the South Fork Koktuli River. July 2005.

PHOTO 22-28: State Archaeologist J. David McMahan overlooks a gravel exposure on a ridge of Kaskanak Mountain above Frying Pan Lake. July 2005.

PHOTO 22-29: Patterned rocks formed by freeze/thaw on a Kaskanak Mountain ridge. July 2005.

PHOTO 22-30: Field crew excavating test unit on stream bank on the southeast side of Kaskanak Mountain. A possible human-modified stone flake was found on the ground surface in this area. July 2005.

PHOTO 22-31: South Fork Koktuli River bank showing soil profile. July 2005.

PHOTO 22-32: Field crew crossing an alluvial landform in the South Fork Koktuli River valley. Site surveyed in 2004 is located on 1,222-foot hill above lakes in center-right of photo. July 2005.

PHOTO 22-33: Frost sorted lakebed below 1,222-foot hill. July 2005.

PHOTO 22-34: Overview of area between the deposit and Frying Pan Lake. August 2005.

PHOTO 22-35: Test unit on bench descending the east slope of Kaskanak Mountain above Frying Pan Lake. The test unit revealed primarily ground-squirrel activity. August 2005.

PHOTO 22-36: Test unit on bench of Kaskanak Mountain above Frying Pan Lake. No cultural material was found. August 2005.

PHOTO 22-37: Seasonal wetlands, beaver lodge, and alders, with glacial landforms emerging above the lake areas. August 2005.

PHOTO 22-38: View looking north over area between the deposit and Frying Pan Lake. August 2005.

PHOTO 22-39: Soil disturbance caused by brown bear predation on ground-squirrel burrows. (For scale, shotgun has 20-inch barrel.) August 2005.

PHOTO 22-40: Caribou (two dots on the ridgeline) overlooking the field crew. August 2005.

PHOTO 22-41: View east along survey track in Upper Talarik Creek basin. Koktuli Mountain in distance. April 2005.

PHOTO 22-42: Test unit in Upper Talarik Creek basin rapidly filled with groundwater. April 2005.

PHOTO 22-43: Ground-squirrel den washed out by snowmelt runoff, which permeated the surface gravels and filled the den. This is a soil-formation process that can result from animal activity. April 2005.

PHOTO 22-44: Survey stake near small snow patch on survey track in Upper Talarik Creek basin. April 2005.

PHOTO 22-45: Upper Talarik Creek streambed, which was investigated for cultural resources. August 2005.

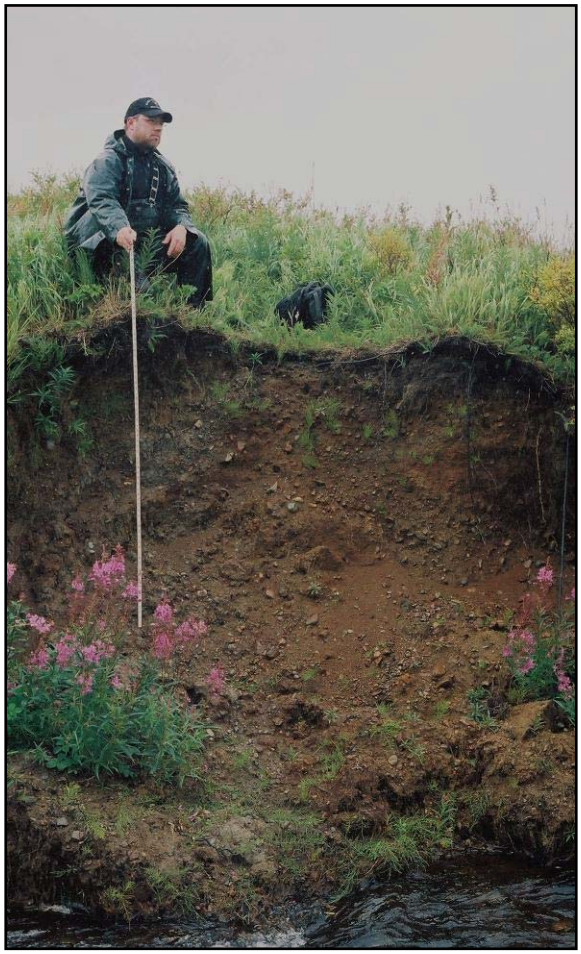


PHOTO 22-46: Example of a cutbank, which can provide natural windows into archaeological deposits. August 2005.

PHOTO 22-47: Overview of far west ridge of Kaskanak Mountain. Field crews examined several large boulder features, such as those shown above. August 2005.

PHOTO 22-48: Overview of valley with persistent snowfield southwest of Kaskanak Mountain. August 2005.

PHOTO 22-49: Tributary stream to South Fork Koktuli River, which was examined for paleontological and cultural deposits along the exposed banks. August 2005.

PHOTO 22-50: Excavation of a test unit on a bench above the stream. August 2005.

PHOTO 22-51: Riverbank showing the large-sized cobbles in the stratigraphic profile in valley southwest of Kaskanak Mountain. August 2005.

PHOTO 22-52: Example of large angular cobbles that have allowed water to wash away soils. August 2005.

PHOTO 22-53: Overview of the benches on the north face of Koktuli Mountain, the Upper Talarik Creek Basin (left), and the slopes of Groundhog Mountain (right). August 2005. In 2006, a field crew investigated some areas of Groundhog Mountain near the cliffs in the center right of the photo.

PHOTO 22-54: Overview of the Upper Talarik Creek basin with Koktuli Mountain on the right. June 2006.

PHOTO 22-55: Surface rocks and vegetation in the Upper Talarik Creek basin. June 2006.

PHOTO 22-56: A glaciofluvial lake in the Upper Talarik Creek basin. June 2006.

PHOTO 22-57: A test unit in the Upper Talarik Creek basin, with thin soil above a gravel base. June 2006.

PHOTO 22-58: A teacup with wild rose transfer print found on the tundra. June 2006.

PHOTO 22-59: Koktuli Mountain from area of exposed bedrock on northwest side of Upper Talarik Creek basin. June 2006.

PHOTO 22-60: Exposed bedrock faces typical of those which frequently attracted prehistoric activities. June 2006.

PHOTO 22-61: Panoramic overview of the east slope of Kaskanak Mountain to the north of Frying Pan Lake. The field crew surveyed around lakes and on exposed gravel ridges. June 2006.

PHOTO 22-62: Typical Kaskanak Mountain ridge and bench showing effects of wind scouring. June 2006.

PHOTO 22-63: Lakes in the general deposit area viewed from glacial moraine on the east margin. June 2006.

PHOTO 22-64: Bench on west slope of Koktuli Mountain above Frying Pan Lake, with a view of Sharp Mountain to the south. Possible winter campsite. June 2006.

PHOTO 22-65: Glacial gravel deposits include kettle lakes, center right on slope. June 2006.

PHOTO 22-66: Steep valleys and snow patches along the northwest quarter of Koktuli Mountain. June 2006.

PHOTO 22-67: View south from glacial moraine in the area of the Pebble Deposit. June 2006.

PHOTO 22-68: Aerial photo of South Fork Koktuli River area showing high-relief glacial-outwash features. August 2006.

PHOTO 22-69: South Fork Koktuli River showing high-relief banks and low-relief banks along modern channel. August 2006.

PHOTO 22-70: Large tree for the area. Test unit excavated near possible camp area near South Fork Koktuli River. Planes with tundra tires land nearby to drop off fishermen. August 2006.

PHOTO 22-71: Modern subsistence camp located on high bank above the South Fork Koktuli River. Rock rings, center. August 2006.

PHOTO 22-72: View north from slopes of Groundhog Mountain showing steep bedrock bluff faces. August 2006.

PHOTO 22-73: Lake formed in steep-walled canyon on west side of Groundhog Mountain. August 2006.

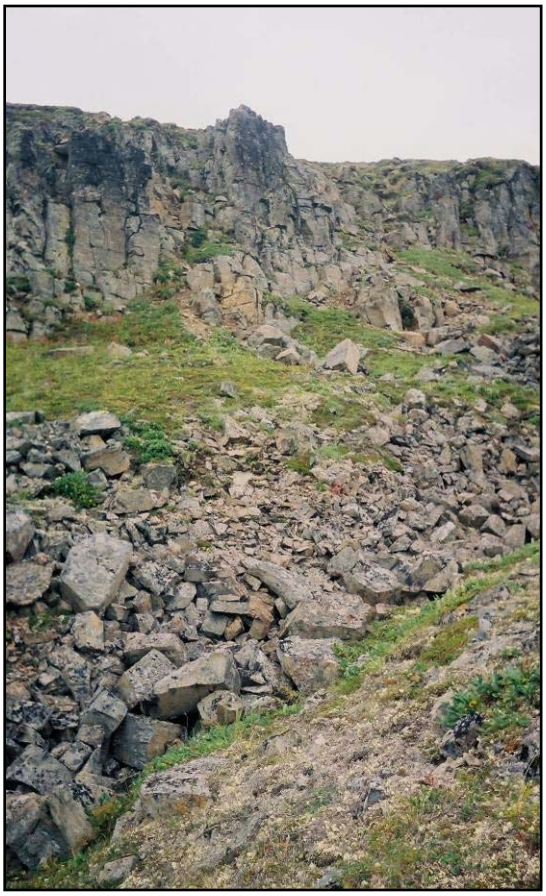


PHOTO 22-74: Steep exposed bedrock bluff faces typical of those sometimes used for petroglyphs, offerings, or caching of artifacts. August 2006.

PHOTO 22-75: Lower slope of Groundhog Mountain overlooking the general deposit location in left distance. August 2006.

PHOTO 22-76: Drilling-core storage area in Iliamna west of the post office. October 2006.

PHOTO 22-77: Drilling-core storage lot (background), containment fence, and undeveloped lot (foreground). October 2006.

PHOTO 22-78: Test unit near drilling-core storage lot close to road showed no cultural material and quickly filled with water. October 2006.

PHOTO 22-79: Test unit east of fenced drilling-core storage lot showing large cobbles and silt infiltration. October 2006.

PHOTO 22-80: Aerial overview of possible location for bridge over the Newhalen River. October 2006.

PHOTO 22-81: On a high bluff on the Newhalen River at possible bridge location. October 2006.

PHOTO 22-82: Rectangular depression found next to a tree at possible bridge location. October 2006.

PHOTO 22-83: Test Unit TH-04-12 showing the typical deposit found along slopes where some soil accumulation and formation had occurred. August 2004.

PHOTO 22-84: Test Unit TH-04-16, one of a few test pits with stratified deposits. Note the grey band, a possible tephra deposit. August 2004.

PHOTO 22-85: Solifluction lobes on southeast-facing slope south of deposit area. August 2004.

PHOTO 22-86: A semi-lunate fragment of frost-shattered cobble. No polishing, retouch, sharpening, or use wear was present on the piece. August 2004.

PHOTO 22-87: Remains of a modern camp at Frying Pan Lake. August 2004.

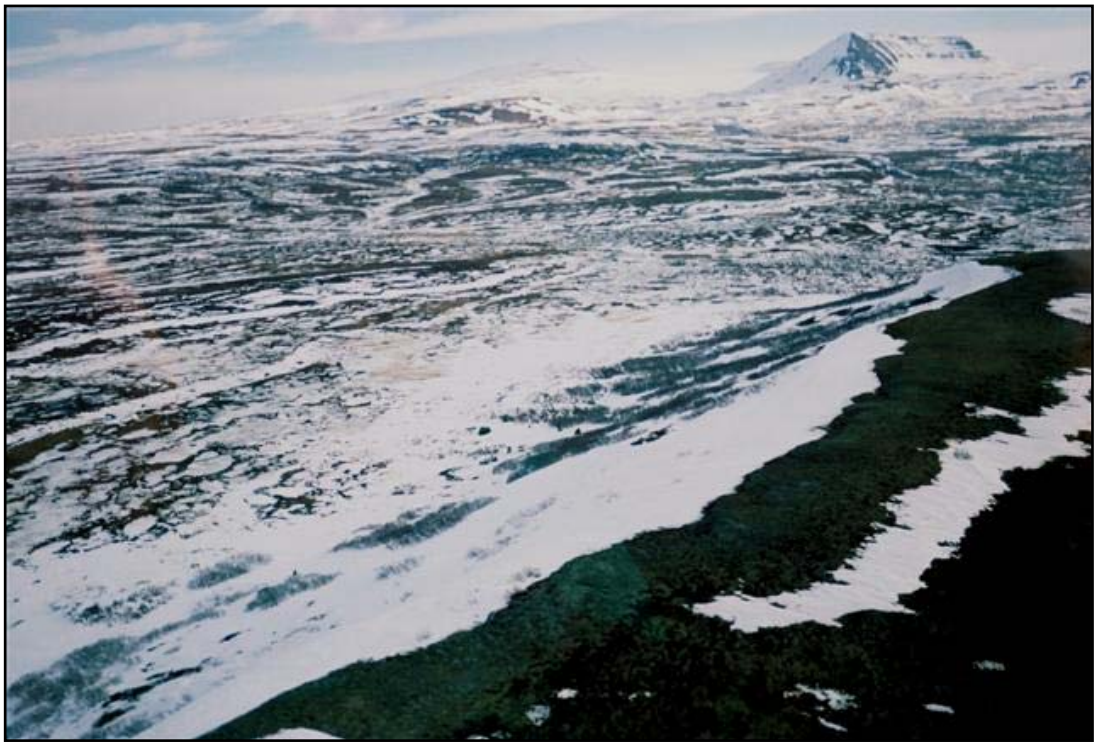


PHOTO 22-88: View of vicinity of Pebble Deposit showing ice- and snow-filled kettle lakes and outwash channels. April 2005.

PHOTO 22-89: Uplands overlooking area between Frying Pan Lake and deposit area. Frying Pan Lake is to the right, with the deposit area at the far center. Note limited patches of vegetation. July 2005.

PHOTO 22-90: View of flake discovered on surface near creek on south side of Kaskanak Mountain. July 2005.

PHOTO 22-91: Reverse side of flake shown above. July 2005.

PHOTO 22-92: Test unit excavated near the surface find shown above, showing the soil accumulation on the alluvial fan, as well as the array of gravel, till, and surface vegetation. July 2005.

PHOTO 22-93: Glacial feature with indications of use as a hunting blind of convenience. July 2005.

PHOTO 22-94: Bird-hunting blind of recent construction on alluvial fan. July 2005.

PHOTO 22-95: Camp-stove base made from rocks in center of scattered cartridges, near eskers on ridge bench. June 2006.

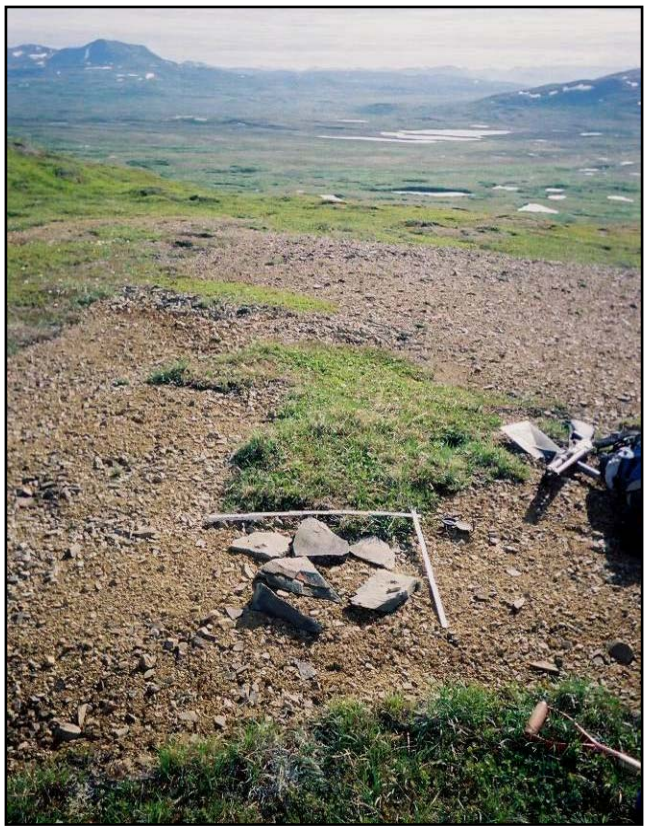


PHOTO 22-96: Stove base made from rocks gathered on nearby exposed rock ridge. An esker to right of backpack (outside of photo frame) would shield a hunter and snow machine from game below. Viewshed from the bench is vast. Groundhog Mountain on left, Pebble Deposit in center, and Koktuli Mountain on right. June 2006.

PHOTO 22-97: Cut spruce and the imprint of a similar piece of possible firewood found downslope from the stove base pictured above. June 2006.

PHOTO 22-98: View west from high bank above South Fork Koktuli River. August 2006.

PHOTO 22-99: The biface and flakes representing the entirety of lithic material recovered from ILI-00194 on the deflated surface of a bench above the South Fork Koktuli River. November 2006.

PHOTO 22-100: Reverse faces of artifacts shown above. These materials were wind scoured and patinated from surface exposure, with relatively little lichen growth. November 2006.

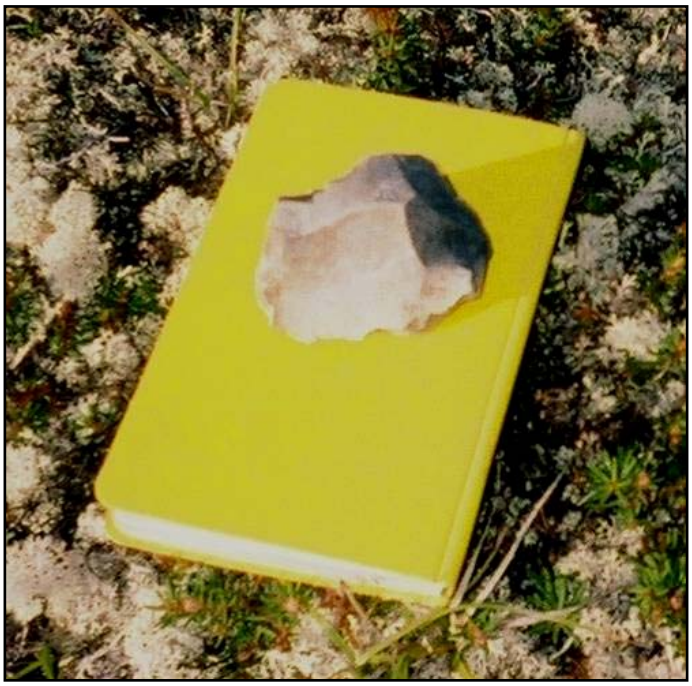


PHOTO 22-101: Surface find on high bluff above South Fork Koktuli River. August 2006.

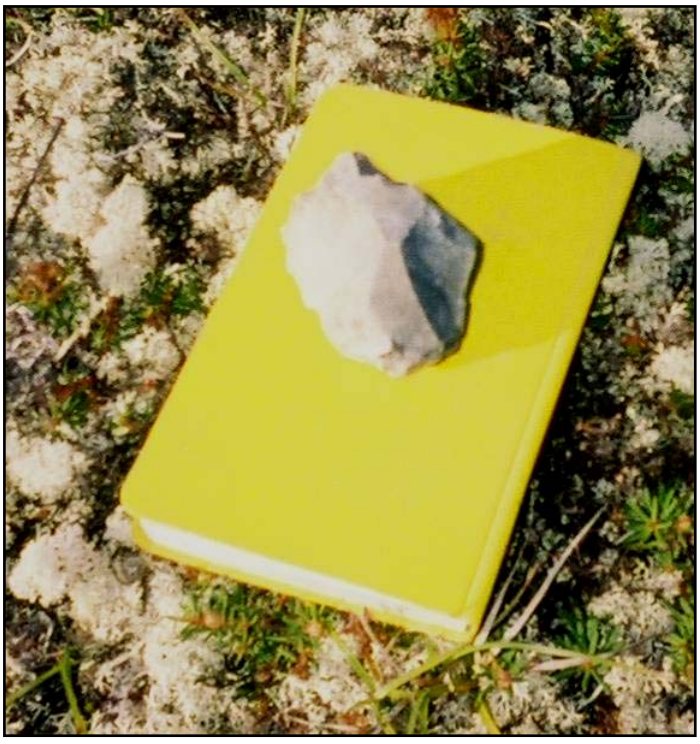


PHOTO 22-102: Reverse face of find shown above. August 2006.

PHOTO 22-103: Artifacts recovered at ILI-00193 from the surface, unless otherwise noted. Counterclockwise from top left on 1/8-inch grid: shattered heat-treated cobble fragment, flake, end scraper-like flake, small blade, side scraper or blade, heat-treated biface with pot lid scar and refit fragment above, and green chert flake from buried context. November 2006.

PHOTO 22-104: Reverse faces of artifacts in photo above. November 2006.

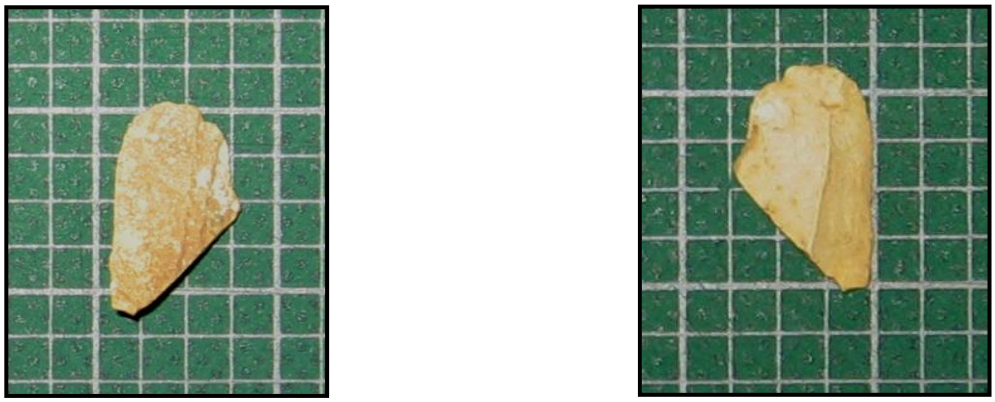


PHOTO 22-105: Two faces of microblade tip from ILI-00193. November 2006.

PHOTO 22-106: Test unit near South Fork Koktuli River, which revealed in situ artifacts on the margin of the blowout area. High relief bluff in the background featured an extensive modern subsistence camp. August 2006.

PHOTO 22-107: Field crew examining a test unit and surface collection at same site as in photo above. August 2006.

PHOTO 22-108: Lithic fragments recovered from depths of 0 to 3.9 inches below surface in the test unit excavated at ILI-00193. Clockwise from top left: microblade tip of cream chert, green chert flake, possible drill, flake, and fragment of heat-treated chert cobble. November 2006.

PHOTO 22-109: Reverse faces of lithic materials in photo above. November 2006.

PHOTO 22-110: Three flakes recovered from depths of 3.9 to 7.9 inches below the surface in the test unit excavated at ILI-00193. November 2006.

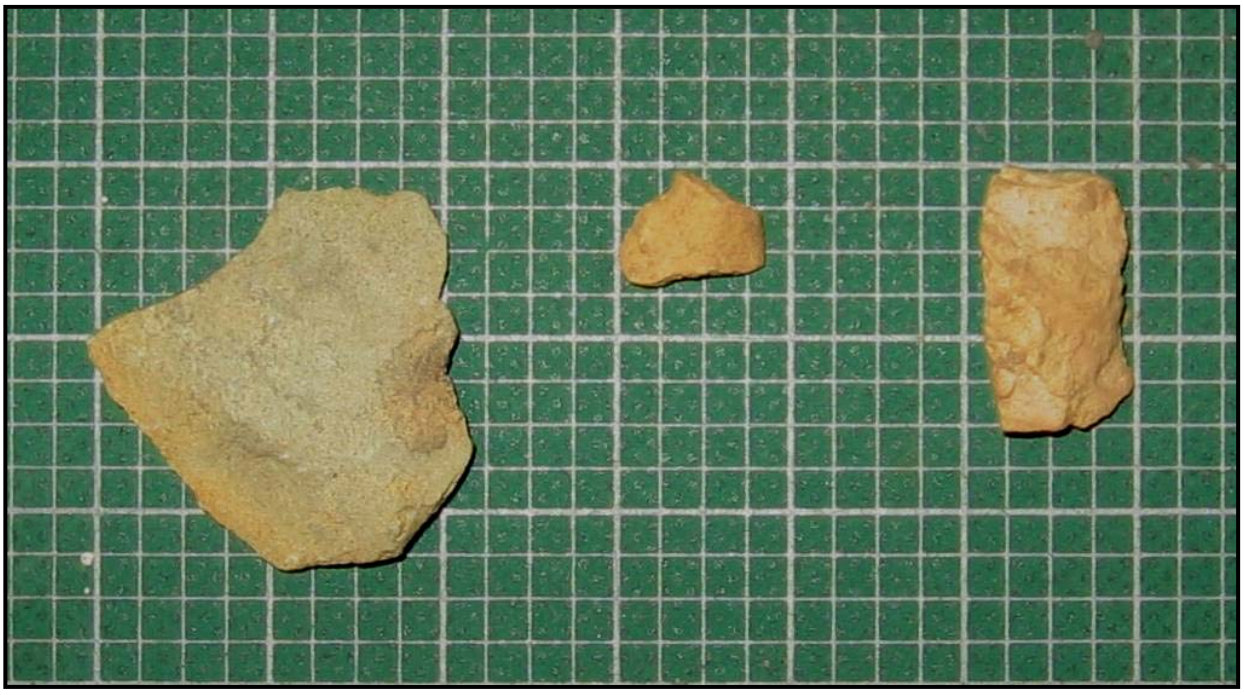


PHOTO 22-111: Reverse faces of the artifacts shown in photo above. November 2006.

PHOTO 22-112: Field-crew members standing in centers of concentrations of lithic materials at ILI-00193. August 2006.

PHOTO 22-113: A row of three large mounds on the floodplain, where test units were dug to see if the mounds were

cultural deposits, such as middens or caches. The mounds were determined to have been formed naturally (see next photo). August 2006.

PHOTO 22-114: Test unit in one of the mounds in the previous photo shows fluvial origin, with a tephra deposit attributed to the 1912 Katmai eruption. August 2006.

PHOTO 22-115: Survey track around the canyon lake. Rifle cartridges found near the lake outlet indicated modern-era use for hunting of large game animals. August 2006.

PHOTO 22-116: Deep rectangular depression found on gravel bar on Newhalen River. October 2006.

PHOTO 22-117: Slightly larger rectangular depression with surrounding berm on gravel bar. October 2006.

PHOTO 22-118: Gravel bar below the high bank had several rectangular depressions, axe and saw-cut trees, and other indications of use as a fish camp. October 2006.

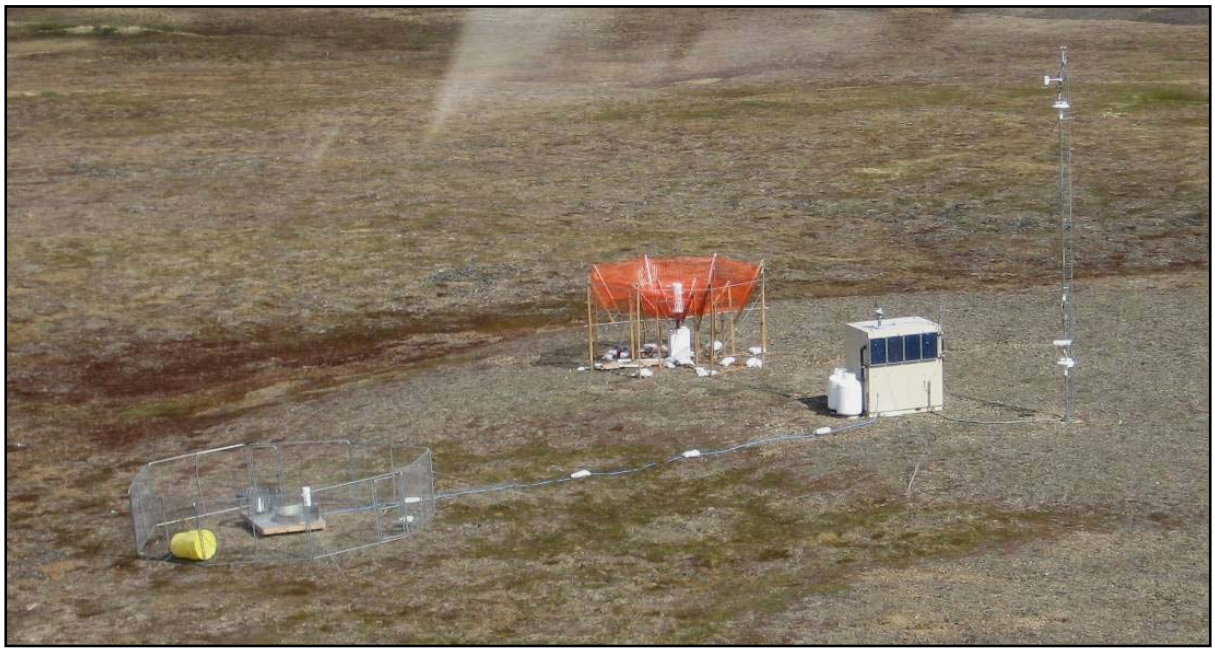


PHOTO 22-119: This meteorology station, located on the 1,567-foot-high ridge above the deposit, is an example of the type of station slated for construction on other sites in the Bristol Bay study area. Minimal surface and subsurface ground disturbance occurs in the construction and operation of the site. June 2007.

PHOTO 22-120: Overview of possible site for meteorology station east of Upper Talarik Creek. The station would be built on wood cribbing because of permafrost below the peat. June 2007.

PHOTO 22-121: Test unit TH-07-01, east of Upper Talarik Creek. Peat was frozen 6 to 9 inches below the surface. No cultural resources were found in this test unit. June 2007.

PHOTO 22-122: Test unit TH-07-02, east of Upper Talarik Creek. Ice was encountered 7 inches below the surface. No cultural resources were found in this test unit. June 2007.

PHOTO 22-123: Site west of Upper Talarik Creek on slopes of Koktuli Mountain in a peat-filled perched basin surrounded by willows and alders. June 2007.

PHOTO 22-124: Test unit TH-07-03, west of Upper Talarik Creek, which revealed 6 inches of water-saturated peat ending in frozen peat. No cultural resources were found in this test unit. June 2007.

PHOTO 22-125: The more eastern of two sites on the northern side ridge of Kaskanak Mountain, in a bare boulder patch. No soil or other medium fills the boulder interstices here, as the water table flows near the surface. No cultural resources were found here. June 2007.

PHOTO 22-126: The boulder field showing some areas with 1 to 3 inches of moss. Areas of soil accumulation allowed some grasses to grow further down the slope. Lumpy surface reflects boulders immediately below vegetation. June 2007.

PHOTO 22-127: The more western of the two sites on the northwestern side ridge of Kaskanak Mountain with a patchy covering of moss and grasses and a high water table visible between the boulders. June 2007.

PHOTO 22-128: Water-table and surface characteristics make this area unlikely to have preserved cultural deposits. June 2007.

PHOTO 22-129: The vicinity of the western site on Kaskanak Mountain showing small patterned patches of vegetation in a boulder field. June 2007.

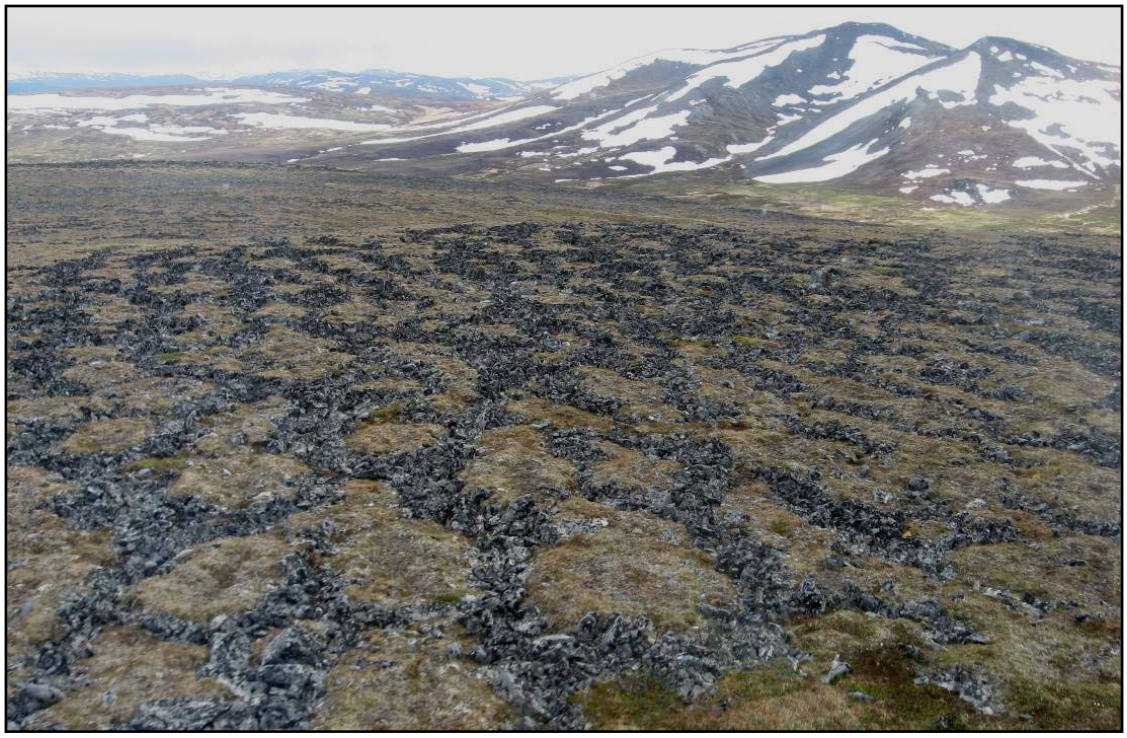


PHOTO 22-130: South of the western site. The patterned nature of the vegetation and boulder field here is more pronounced. Kaskanak Mountain in right background. June 2007.

PHOTO 22-131: Survey along the northwesternmost ridge of Kaskanak Mountain.

PHOTO 22-132: Sump pit located on the northwesternmost ridge of Kaskanak Mountain. The excavated soil was examined for cultural resources. August 21 and 22, 2007.

PHOTO 22-133: Sump-pit spoil pile and background showing the prevalence of large stones with little soil matrix on Kaskanak Mountain. August 2007.

PHOTO 22-134: Surface vegetation on a northern ridge of Kaskanak Mountain, varying from small willows to grasses and sedges to bare rock with lichen and moss. August 2007.

PHOTO 22-135: Sump-pit excavation monitored by the survey crew at request of excavation crew. August 2007.

PHOTO 22-136: Slopes of Groundhog Mountain above the Upper Talarik Creek basin. The survey here proceeded through alternating vegetation-filled gullies and nearly denuded talus slopes. August 2007.

PHOTO 22-137: Overview of the Kaskanak Mountain basin. Unsettled weather created a lenticular cloud over Koktuli Mountain in the upper left quadrant of the photo. August 24, 2007.

PHOTO 22-138: Lithic fragments found separately (ILI-00201, ILI-00202, and ILI-00205) on the surface during the survey of the northwestern ridge of Kaskanak Mountain. August 2007. The materials resemble those found near the South Fork Koktuli River on the benches above the river channel.

PHOTO 22-139: Reverse side of the three lithic artifacts shown in photo above.

PHOTO 22-140: The second of two rock circles (ILI-00204) on a south-facing slope of Kaskanak Mountain. This gully is protected from winds and has a source of water and firewood nearby (behind the photographer). The gully outlet overlooks a valley in which other subsistence and archaeological sites were discovered on previous surveys. (Six-foot-long folding rule for scale in center of photo.) August 2007.

PHOTO 22-141: Panoramic view of the second tent ring (ILI-00204) on south-facing slope of Kaskanak Mountain. Rocks used to hold down tent cover form a figure eight. (Six-foot-long folding rule for scale in left side of ring.) August 2007.

PHOTO 22-142: Field crew transecting a survey route on the northern slopes of Kaskanak Mountain. June 2008.

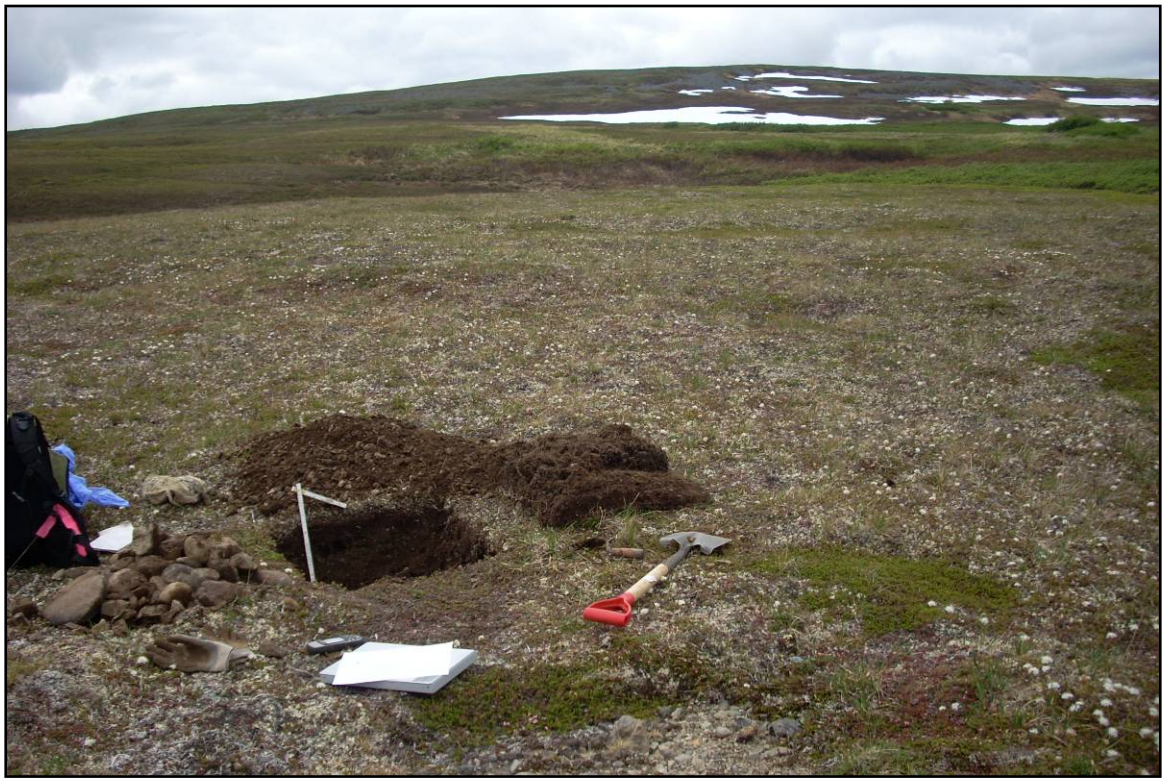


PHOTO 22-143: Test pit excavated on the northern slopes of Kaskanak Mountain. June 2008.

PHOTO 22-144: A small stream in a very large channel. This stream feeds into the North Fork Koktuli River. June 2008.

PHOTO 22-145: Test unit showing the typical stratigraphy of the mine study area soils. June 2008.

PHOTO 22-146: Overview of the deposit area from Koktuli Mountain showing an example of rolling tundra hills with sparse vegetation interspersed with areas of dense vegetation in sheltered areas. July 2008.

PHOTO 22-147: ILI-00219, surface lithic find. Possible blade removal scar on lower face. June 2008.

PHOTO 22-148: ILI-00219, another face of the same piece showing conchoidal fracture. June 2008.

PHOTO 22-149: ILI-00219, blade removal scars on top face of same piece. Vertical element also shows conchoidal fracture. June 2008.

PHOTO 22-150: ILI-00218, flake found on the surface. June 2008.

PHOTO 22-151: ILI-00218, reverse side of the same flake. June 2008.

PHOTO 22-152: ILI-00218, one edge of the same flake at 10x magnification shows possible use as a blade or possible retouching. June 2008.

PHOTO 22-153: ILI-00218, another view of the blade edge of the same flake at 10x magnification. June 2008.

PHOTO 22-154: Test unit T-PBL-08-14 showing angular fractured rock with silt matrix, indicating that the rock is bedrock that fractured in place. July 2008.

PHOTO 22-155: Late season snow fills stream channel on Koktuli Mountain. July 2008.

PHOTO 22-156: ILI-00220, east of Koktuli Mountain on a broad outwash plain that extends toward the Newhalen River. A granola bar wrapper dated 1985 was found in the tin can on the right.. July 2008.

PHOTO 22-157: ILI-00213, woodpile near tent ring. August 2008.

PHOTO 22-158: ILI-00213, second woodpile near tent ring. August 2008.

PHOTO 22-159: ILI-00213, first tent ring. August 2008.

PHOTO 22-160: ILI-00213, second smaller tent ring closer to the small lake to the left. This ring included metal and wooden stakes. August 2008.

PHOTO 22-161: ILI-00213, folding camp toilet found between second tent ring and the shore of the small lake. August 2008.

PHOTO 22-162: ILI-00213, fire ring with bone scatter on the south side of the ridge. August 2008.

PHOTO 22-163: ILI-00214, tent ring on elevated feature below higher hills and between lake depressions. August 2008.

PHOTO 22-164: ILI-00214, bisected fire ring, one side possibly used for cooking with cast iron cookware. August 2008.

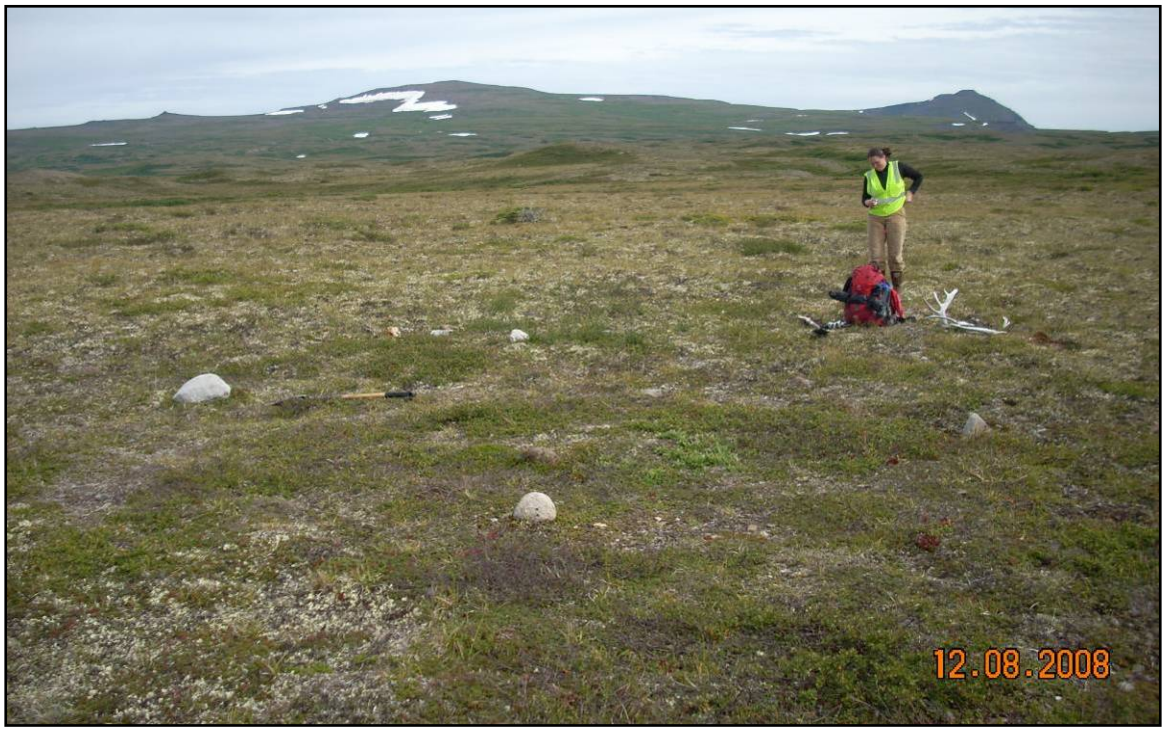


PHOTO 22-165: ILI-00216, tent ring and antlers pointed towards Nondalton. August 2008.

PHOTO 22-166: Fire ring located near ILI-00214. August 2008.

PHOTO 22-167: ILI-00217, panoramic overview of the horseshoe-pitch area. On left (where people are standing) is the horseshoe pitch, while along the base of the rise in the background are woodpiles, antler piles, a water jug, and a kerosene can. August 2008.

PHOTO 22-168: ILI-00217, cleared horseshoe pit with horseshoe and rebar stake. Other end of pitch was in similar condition. August 2008.

PHOTO 22-169: ILI-00217, horseshoe pit vicinity. August 2008.

PHOTO 22-170: ILI-00217, Chevron kerosene can found on the site. August 2008.

PHOTO 22-171: ILI-00217, wood stockpile included machine-made lumber and cut wild wood. August 2008.

PHOTO 22-172: Rock cairn, pipe section, and wooden boundary marker on the Cone. August 2008.

PHOTO 22-173: Bronze marker In the center of the cairn. August 2008.

PHOTO 22-174: North of the Cone. Caribou use the snow-filled gullies to avoid insects and hide from predators. August 2008.

PHOTO 22-175: The Nikabuna Lakes area. This area is a key Dena'ina use area and represents a key ecozone for Athabascans. The margin from forested lowland to tundra upland is important for large mammals, which are in turn important food for the Dena'ina. August 2008.

PHOTO 22-176: Natural rock formation resembling a person. Top rocks may have been added by people, but the vicinity revealed no artifacts. August 2008.

PHOTO 22-177: Slope of hill that was in glacial lee of the Cone and that featured many chunks of greenish to white fine-grained chert. Material appeared too friable for fine tool making, but suitable for tools of convenience. August 2008.

PHOTO 22-178: Surface rocks on plateau in lee of the Cone. Rocks are lichen covered, and parent cobbles have been fractured into thin “slices.” August 2008.

PHOTO 22-179: ILI-00212, small rock stack on plateau in lee of the Cone. August 2008.

PHOTO 22-180: ILI-00212, rock circle found on top of plateau in lee of Cone. This circle does not appear to be a tent ring or fire ring, it is far from water and wood, and it surrounds a boulder. August 2008.

APPENDICES

APPENDIX 22A

All Documented Place Names in the Bristol Bay and Cook Inlet Drainages

ALL DOCUMENTED PLACE NAMES IN THE BRISTOL BAY AND COOK INLET DRAINAGES

The locations associated with all place names, except those with no locational data, are shown on Figure 22-20. Locations of those place names within the mine, transportation-corridor, or Cook Inlet Drainages study areas also are identified on Figures 22-21, 22-22, and 50-4, respectively.

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
1*		Adnashga	Russian	Upper end of north slough
2		Agayuwiguat	Alutiiq	Castle Point
3		Agivavik	Yup'ik	
4*		Ahk-tung-ha-mut	Yup'ik	No English name given
5		Ahlutobaiok	Yup'ik	
6		Akakhpuk	Yup'ik	Akokpak; village site
7		Akulivikchuk	Yup'ik	Akulivikchuk
8		Ał Ghuten	Dena'ina	
9*		Alaqnaqiq	Yup'ik	Aleknagik village
10		All·wiq	Alutiiq	Alaska Peninsula
11	22-22	Amiguk	Dena'ina	Bay south of Leon Bay
12*		Anarrniq	Yup'ik	West of Assigyugpak Spit
13		Angauryaraq	Yup'ik	Agulurak River
14*		Anglurvik	Yup'ik	Lake with many bird eggs
15*		Anguqvanertuli	Yup'ik	No English name given
16*		Anguuq	Yup'ik	Ongoke River
17		Angvaneq/Angvangcuaq	Yup'ik	Ongivinuck River
18		Angvanermuit or Angvaneq	Yup'ik	Old village site on upper Togiak River
19*		Anngaqtar	Yup'ik	Rock Woman
20	22-21	Antone K'etnu'a	Dena'ina	Creek from stream before Nikabuna Lake
21		Aouguluk	Yup'ik	
22		Aqvaiyaraq or Aqvayaraq	Yup'ik	Site on lower Togiak River
23		Assigyugpak or Alaarciyaaraq	Yup'ik	Assigyugpak Spit
24		Assigyugyak	Yup'ik	Tongue Point
25		Asviryaq	Yup'ik	Osviak
26		Bach'anqel'u	Dena'ina	Ridge west of Kustatan River
27		Badi Dulyasht	Dena'ina	Granite Point
28		Bajatnu	Dena'ina	Bachatna Creek
29		Banqach'agh	Dena'ina	Little Jack Slough
30		Banqach'agh Bena	Dena'ina	Lake up Little Jack Slough
31*		Baqay Nilyashtnu	Dena'ina	Sheep Creek, south of Montana Creek
32		Batl'eghdink'et'	Dena'ina	North Foreland
33		Ben'idlen Bena	Dena'ina	Bunitlana Lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
34	50-4	Bentudush Bena	Dena'ina	Lake and marsh at mouth of Johnson River
35		Bentuggezh K'enulgheli	Dena'ina	Mt. Redoubt
36		Betnu Ch'dilitnu	Dena'ina	Cannery Creek
37*		Cakivik	Yup'ik	Wood gathering place
38		Capuluut or Capulurpak	Yup'ik	Upper Togiak River
39		Carayaruuraat	Yup'ik	Upper Togiak River; hidden rocks in river
40		Cauyarparmuit of Cauyararmuit	Yup'ik	Upper Togiak River
41		Cellitmiut	Yup'ik	Sleetmute
42	50-4	Ch'naqal'in	Dena'ina	Iliamna volcano; Iliamna Mountain
43		Ch'adalqet'i	Dena'ina	North point of Kustatan Ridge
44		Ch'ak'daltnu	Dena'ina	Kijik River
45	22-22	Nuch'ak'dalitnu, Ch'ak'dalitnu, Iliamna Vetnu	Dena'ina	Old Iliamna village, Iliamna River
46		Ch'ak'daltnu Tl'ughu	Dena'ina	Upper Kijik River
47	50-4	Ch'ak'elyashtnu	Dena'ina	Chinkelyes River
48		Ch'ak'nijaq' Hdakaq'	Dena'ina	Creek into upper Chilchitna River
49		Ch'akaja Bena	Dena'ina	Chakachamna Lake
50		Ch'akajatnu	Dena'ina	Chakachatna River
51		Ch'aldi	Dena'ina	Mountain at head of Ch'k'ghilt'ezhtnu
52		Ch'aldi Vingha	Dena'ina	Mountain north of Tsighunitnu
53		Ch'alikel'u	Dena'ina	Peninsula from Keyes Point to Cape Shishkin
54	22-22	Ch'alikel'u T'ech' Nini'u	Dena'ina	Keyes Point
55		Ch'alikel'u Yitughil'u	Dena'ina	Portage Bay
56		Chulitna River	English	
57		Ch'alitnu Hdakaq'	Dena'ina	Chulitna River
58		Ch'alitnu Hdakaq' Hkayitadghi'u	Dena'ina	Turner Bay
59	22-22	Ch'anatl'ini	Dena'ina	Point south of Iliamna River mouth
60		Ch'ani'iy	Dena'ina	Ridge between McArthur River and Chakachatna River
61		Ch'atanalch'elt	Dena'ina	Straight Creek
62		Ch'atatnatl'ech'	Dena'ina	Black Creek
63		Ch'atexni'u	Dena'ina	Flat north of rapids
64		Ch'azhiya	Dena'ina	Mountain north of Telequana Lake
65		Ch'dal'in Vena	Dena'ina	Lake on Telequana River, near Trail Creek mouth
66	22-22	Ch'dat'an T'el'iht	Dena'ina	
67*		Ch'dat'an Vena	Dena'ina	Small lake at head of Shehtl'unu
68		Ch'dat'an Vena	Dena'ina	Lake west of Trout Lake
69		Ch'dat'antnu	Dena'ina	Black Creek

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
70	22-22	Ch'duqitnaghilt'e	Dena'ina	Rapids one mile above Lime Village
71		Ch'dutu'itnaghil'e	Dena'ina	Rapids one mile above Lime Village
72		Ch'elehtnu	Dena'ina	Old Tyonek Creek, "Robert's Creek"
73		Ch'eq'tnu	Dena'ina	Creek from south at Qeghnilen
74		Ch'ghitali Ka'a	Dena'ina	
75	22-22	Ch'ghitali Ka'a Vetnu	Dena'ina	
76	22-22	Ch'ghitalishla Vetnu	Dena'ina	
77	22-22	Ch'iqi'untnu	Dena'ina	
78		Ch'it'en Bena	Dena'ina	Crescent Lake
79		Ch'it'ena	Dena'ina	Mountain north of Tuxedni Bay
80		Ch'it'entnu	Dena'ina	Creek from Crescent Lake to Grecian Lake
81		Ch'it'entnu	Dena'ina	Crescent Creek (Grecian River)
82		Ch'iy Kegh Dghut'in Vena	Dena'ina	Lake east of Trout Lake
83		Ch'k'e'ula Betnu	Dena'ina	Chuitkilnachna Creek
84		Ch'k'eshyush	Dena'ina	Mountain 1772' west of North Fork of Babel River
85		Ch'k'eshyush Vena	Dena'ina	Lake north of Ch'k'eshyush
86		Ch'k'ghilt'ezhtnu	Dena'ina	Creek into Swift River
87		Ch'kendalk'et'	Dena'ina	On Lake Clark at base of Dghilishla
88		Ch'kentalqeyitnu	Dena'ina	Creek north of Currant Creek
89		Ch'q'alchedi	Dena'ina	Mountain 2894' southeast of Cairn Mountain
90	22-22	Ch'q'ayna Qudghijaq'	Dena'ina	Mountain up Iliamna River
91	22-22	Ch'qi'un Vena	Dena'ina	Alexie Lake
92		Ch'qulch'ishtnu	Dena'ina	Trail Creek and village site
93		Ch'u'itnu Hdakaq'	Dena'ina	Chuitt River village
94		Ch'ubetnu, Ch'u'itnu	Dena'ina	Chuitt River
95		Ch'ul'egi	Dena'ina	Big Mountain
96		Ch'ul'egitnu	Dena'ina	Big Mountain Creek
97		Ch'vach'etl'ateh Ndazdlen	Dena'ina	Creek into the Stony River from the south
98	22-22	Ch'vala Nlin	Dena'ina	Flat Island
99		Ch'vaq'da	Dena'ina	Ridge 1453' north of Dummy Creek
100		Dummy Creek	English	
101		Ch'vaq'da T'uh Ch'adanilen	Dena'ina	Creek north of Tsik'kazema
102		Ch'vaq'da T'uh Ch'daltuni	Dena'ina	Lake east of Nilduvunk'idenghaljexa Vena
103		Chada Dghil'u	Dena'ina	"Chada Hill", south of Lime Village
104		Chaiwaiyaguk	Yup'ik	
105		Chalchi Dghil'u	Dena'ina	Mountain at head of Chilchatna River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
106		Chalchi Kaq'	Dena'ina	Site at mouth of Chilchitna River
107		Chilchitna River	English	
108		Chaq'ah Tugget	Dena'ina	Bay southwest of Kijik
109	50-4	Chaqelchin	Dena'ina	Tilted Hills
110		Chaqenq'a Qeghneq	Dena'ina	Ridge south of Qeghnilen on the upper Stony River
111	50-4	Chaqulchin	Dena'ina	Tilted Hills
112		Chatnashtl'ech'i	Dena'ina	Mountain north of Halfway Mountain
113		Chatnashtl'ech'itnu	Dena'ina	Gnat Creek
114	22-22	Chayi Ch'dedlesht Kiyiq'	Dena'ina	Chayi Point
115		Chida Dghil'u	Dena'ina	"Chida Hill", south of Lime Village
116		Chikalushen Tustes	Dena'ina	Pass from Tlikakila River and Lake Clark Pass toward Twin Lakes and the Mulchatna River
117		Chinah Vena	Dena'ina	Lake two miles northeast of Qeghnilen
118		Chinah Vena Tala	Dena'ina	Site at Chinah Vena
119	22-22	Chix Kaq'	Dena'ina	Chekok village
120		Chix Nigh	Dena'ina	
121	22-22	Chixtnu	Dena'ina	Canyon Creek
122		Chixtnu	Dena'ina	Eagle Mountain Creek
123		Chu Nula	Dena'ina	Augustine Island
124	22-22	Chu T'udilnen	Dena'ina	Point and mountain, 2437 feet elevation, west of Squirrel Point
125		Chudlan Tustes	Dena'ina	Pass from Viy Ka'atnu to Chilchitna River
126		Chuikak	Yup'ik	
127		Chun Talen	Dena'ina	South fork, Chulitna Delta
128		Chunit'i	Dena'ina	Mountain 3652' north of Fishtrap Lake
129		Chuqutenghehtnu	Dena'ina	Chokotok River
130*		Cihniq	Alutiiq	Chignik Bay
131*		Cingigaq	Yup'ik	Protection Point
132*		Cingiraak	Yup'ik	Old village west of Kiturciralnguq
133*		Cukar	Yup'ik	Valley above Gust T's camp
134*		Cukaraq	Yup'ik	Gust T's camp
135*		Curyung	Yup'ik	Dillingham, Chogiung, Snag Point
136	50-4	D'anlcha Nut'	Dena'ina	A. C. Point
137		Daggugga	Dena'ina	Takoka Creek
138		Dazdlit Dazdlu	Dena'ina	Mountain between Swift River and Ts'ixtsatnu
139	22-21	Deghk'isna Dghil'u	Dena'ina	Mountain west of Nondalton

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
140		Denyihtnu	Dena'ina	Canyon on Mulchatna River
141		Denyiq' Ni	Dena'ina	Island a quarter mile above Qeghnilen
142		Dghelikda Nuten	Dena'ina	Lone Ridge
143		Dghezha Betnu	Dena'ina	Drift River, mouth of Drift River
144		Dghildiden Qayeh	Dena'ina	
145		Dghili Gis	Dena'ina	Lyman Hills?
146*		Dghili Yiqudun	Dena'ina	Canyon on the upper Swift River
147		Dghilishla	Dena'ina	Mountain south of Kijik Lake
148	22-22	Dihak'ghilgha	Dena'ina	Tommy Mountain
149		Dilah Vena Q''estsiq'	Dena'ina	Telequana Lake outlet
150		Dilah Vena Tustes	Dena'ina	Telequana Pass from Telequana Lake to Kustatan or Tyonek
151		Dilah Vena, Vek'dilah Vena	Dena'ina	Telequana Lake
152		Dilah Vetnu, Dilah Vena Vetnu	Dena'ina	Telaquana River
153*		Dinaq'I Xon-gidighe'odi	Deg Hit'an	Slough from near Stony River village to Moose Creek on the north side of the Kuskokwim
154*		Dinaq'I Xon-gidighe'odi Gis	Deg Hit'an	"Little Moose Creek"
155		Dintaltnu	Dena'ina	Underhill Creek
156*		Dre-ni-ak-ha-mut	Yup'ik	No English name given
157		Duch' Hghaztun	Dena'ina	Aleutian Range
158		Dughutiztunhtnu	Dena'ina	Creek into north Babel River from east
159		Duguli Gguyatnu	Dena'ina	Hatchet Creek
160		Dujeni Vadelghishi	Dena'ina	Largest of three lakes south of the Chulitna River
161		Duneyes Dghil'u	Dena'ina	
162	22-21	Duntsih	Dena'ina	Iliamna Lake lowlands (II); lowlands south of Lake Clark (I)
163		Dusdubena	Dena'ina	Tustumena Lake
164	22-22	Duvunu	Dena'ina	Pedro Mountain Peninsula
165*		Dzel Ggezh	Dena'ina	Pass on Iliamna Bay portage
166		Alaska Range	English	
167		Ecuilnguaq	Yup'ik	Creek and village site on lower Togiak River
168		Ecuilnguayaar	Yup'ik	
169*		Ekviraat	Yup'ik	No English name given
170		Ekwagamiut	Yup'ik	
171		Eldi Vena	Dena'ina	Why Lake
172		Eldi Vetnu	Dena'ina	Why Lake outlet

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
173		Eldiyes Dghil'u	Dena'ina	Hill west of Why Lake
174		Elilakok	Yup'ik	
175*		Elivelleq	Yup'ik	
176		Elnen Gheli	Dena'ina	Hill north of Hek'dichen
177		Eqisnicuar	Yup'ik	Estus Point
178	50-4	Esdghuk'a T'el'iht	Dena'ina	Diamond Point in Iliamna Bay
179	22-22	Eseni Qilu	Dena'ina	
180		Eshjexteh Dazdlena	Dena'ina	Creek east of Tinch'ghilkaq' Ch'vaq'da
181		Esni Cheh Ni	Dena'ina	Island three miles above Lime Village
182		Esnigh	Dena'ina	Creek north of Polly Creek
183*		Gag Helandhi	Deg Hit'an	Across from "Sergies"
184*		Gag Helanhdi	Deg Hit'an	"Ignatty Macar's location"
185		Ges Aq'a	Dena'ina	Point on south shore of Tundra Lake
186		Ges T'el'iht	Dena'ina	Fishing spot near Q'nuqilchin Hqilchin
187		Ggahunagh	Dena'ina	Kokhonak village
188	22-22	Bear Creek	English	
189		Ggis Qelah Dghil'u	Dena'ina	Hill 2165' east of Tusnuch'val'uh Vena
190*		Ggis Tusghil'uh Dghil'u	Dena'ina	Not located on map.
191		Ghenik'daltun	Dena'ina	Bruin Bay
192		Ghenuy Dghil'u	Dena'ina	Mountain at head of Caribou Snare Creek
193*		Gidighuyghatno' Xidochagg	Deg Hit'an	Stony River mouth
194*		Gitthin' Chuxno'	Deg Hit'an	Moose Creek
195	22-22	Gulul Vena	Dena'ina	Long Lake
196		Haghelitnu	Dena'ina	Holitna River
197		Hdenlghik'i Veq' T'el'ihi	Dena'ina	Point north of Telequana Lake outlet
198		Hdudilent	Dena'ina	Outlet of Tundra Lake
199		Hek'dichen	Dena'ina	Hungry Creek
200		Hek'dichen Ch'adanilen	Dena'ina	Creek into Trout Lake
201		Hek'dichen Dghil'u	Dena'ina	First Lime Hill south of Stony River; mountain west of Trout Lake
202		Hek'dichen Hdakaq'	Dena'ina	Mouth of Hungry Creek; Lime Village
203		Hek'dichen Q'estsiq'	Dena'ina	Outlet of Trout Lake
204		Hek'dichen Vena	Dena'ina	Trout Lake
205		Henesdi	Dena'ina	Northernmost of Bonanza Hills, 3950'; mountain at north end of Bonanza Hills on the upper Mulchatna River
206		Hesgi Cheq'a Qeltl'in	Dena'ina	Mountain at head of Qalnigi Tunilentnu
207		Heyteh Ch'dults'iht	Dena'ina	Site on the north bank of Stony River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
208	22-22	Hggezh	Dena'ina	
209	22-22	Hggezh Vena	Dena'ina	
210	50-2	Hkayitaghi'u	Dena'ina	Cottonwood Bay
211*		Hneh'itnu	Dena'ina	Lake Creek into the Yentna River
212		Hni Bena	Dena'ina	Kenibuna Lake
213		Hnitl'ugheljiga	Dena'ina	West Foreland
214		Hnitsanghi'iy	Dena'ina	
215		Hnudyi Yehtnu	Dena'ina	Little Underhill Creek, a creek into Ts'ixtsatnu, a stream in the upper Stony River area
216		Hnudyi Yehtnu Dghil'u	Dena'ina	Mountain 4646'
217		Hq'adenghil'uyi	Dena'ina	Mountain north of the Hoholitna River
218		Hqak'elaxtnu	Dena'ina	Creek northeast of Summit Creek
219		Hqaqeyghastq'ey	Dena'ina	On Mulchatna northwest of Henesdi
220		Hqaqeyghastq'eytnu	Dena'ina	Creek north of Bonanza Creek
221		Hqaynust'in	Dena'ina	Mountain at inlet to Little Lake Clark
222*		Htal	Dena'ina	Rainy Pass from the Kuskokwim River to the Yentna River drainage; Ptarmigan Valley
223*		Htaykaghil'u	Dena'ina	Canyon at the mouth of Ch'eq'etnu
224		Htesten	Dena'ina	Ridge 3247' at head of Haqeyghastq'ey
225	22-22	Htiditun	Dena'ina	Ephem's Squirrel Village
226		Htsaynenq'	Dena'ina	The Stony River-Mulchatna River plateau, or piedmont area
227		Htsit, Htsit Qayeh	Dena'ina	Tishimna Lake village
228		Htsit Vena	Dena'ina	Tishimna Lake or 'Whitefish' Lake on the lower Stony River
229		Huch'alitnu, Huch'altnu	Dena'ina	Swift River
230		Huch'altnu Tl'ughu	Dena'ina	Swift River headwaters
231		Hudastggat	Dena'ina	Pass at upper Eagle Mountain Creek
232		Hugget	Yup'ik	
233	22-22	Hughelqet'i Ka'a	Dena'ina	Southern tip of Keyes Point
234		Huk'esdlik'i	Dena'ina	Valley north of Nach'ghigvuntnu
235		Huk'esdlik'itnu	Dena'ina	Second creek from north into Chulitna River
236		Hukughitenitnu	Dena'ina	Creek into head of Kijik Lake
237		Hulehga Tahvilq'	Dena'ina	Clough on the north Chulitna Delta fork
238		Hulughu Tutnaz'uni	Dena'ina	Rock reef at the end of West Foreland (Kustatan)

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
239	22-22	Hunqet'unhtnu	Dena'ina	Chekok Creek
240	22-22	Husuyghiqan Hni'a	Dena'ina	Flat Island in Lake Clark
241		Huten	Dena'ina	Not located on map.
242		Huten Vena	Dena'ina	Otter Lake
243		Huten Vena Tustes	Dena'ina	
244		Hutulen Ka'a	Dena'ina	
245*		Ichuak	Yup'ik	No English name given
246		Igitnu	Dena'ina	Igitna River
247	22-22	Igiugig	Dena'ina	
248		Igwat	Alutiiq	
249		Igya'iq	Alutiiq	Egegik
250*		Iilgayaq	Yup'ik	Nushugak Bay or Nushugak River
251*		Iinruq	Yup'ik	Inowak village, right bank of Kuskokwim River
252		Ikak	Alutiiq	Egegik
253*		Ilgayak	Yup'ik	Upper Nushagak River
254*		Iligviim Kuiga	Yup'ik	Muskrat Creek
255		Ilnik	Alutiiq	
256		Ilnik River	Alutiiq	
257		Inakpuk	Yup'ik	
258		Inangashek	Alutiiq	Unangashak
259		Ingricauraam-qagati or Ingricuam-qagati	Yup'ik	Head of Twin Hills River
260*		Ingricuar	Yup'ik	Twin Hills village
261*		Ingrik	Yup'ik	Village located at the mouth of a small creek which flows into the Nushagak less than 8 km below the mouth of the King Salmon River
262*		Ingriqvak	Yup'ik	High Island
263		Iqallulek or Iqallulegmiut	Yup'ik	Village name on lower Togiak River
264*		Iquaq	Yup'ik	Ekwok
265*		Isayan	Yup'ik	No English name given
266*		Iyuussiiq	Yup'ik	Igushik
267		Jaghtughilent	Dena'ina	Creek from west into Kustatan River
268		Jampo Vena	Dena'ina	Lake west of Can Creek mouth
269*		Jonetno' Xidochagg Deloy Ch	Deg Hit'an	Mountain between the Cheeneetnuk River and the Swift River (near elevation 2073' "Stee
270		Jun el Tazdlen	Dena'ina	Cheeneetnuk River
271		K'a Ka'a	Dena'ina	Mountain between Twin Lakes and Turquoise Lake
272		K'adala Vena	Dena'ina	Snipe Lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
273		K'adala Vena Q'estsiq'	Dena'ina	Snipe Lake outlet
274		K'adala Vena Vunu Hninz'iy	Dena'ina	Two hills at Snipe Lake
275		K'chan Nlin	Dena'ina	Mountain 3765' below Kijik Mountain
276		K'chanlentnu	Dena'ina	Creek west of Huk'esdlik'itnu; creek west of K'qula Qelchixitnu, "Lynx Creek"
277		K'chanlentnu Tustes	Dena'ina	Pass to the north
278		K'daghutnu	Dena'ina	Creek at base of Ch'ani'iy
279		K'dalghektnu	Dena'ina	Creek south of Snipe Lake
280		K'dalghek'tnu Q'aghilen	Dena'ina	Where K'dalghektnu meets Chilikodrotna River
281	22-22	K'denez Dghil'u	Dena'ina	Mountain east of North Pickerel lake
282	22-22	K'denez Gguya	Dena'ina	Mountain by Tazimna River
283	22-22	K'denez T'uh Taz'iy	Dena'ina	First point on south shore
284	22-22	K'denez Vena	Dena'ina	North Pickerel Lake
285	22-22	K'denez Yitughil'u	Dena'ina	Bay above point
286*		K'echan Dilkizt	Dena'ina	A village near the mouth of the Kasilof River
287	22-22	K'eleh Dghil'u	Dena'ina	Mountain west of Chekok Lake
288	22-22	K'elesh Dghil'u	Dena'ina	
289	22-22	K'elesh Dghil'u Yich'adanilen	Dena'ina	
290	22-22	K'elesh Vena	Dena'ina	Chekok Lake or Moose Lake
291	22-22	K'elesh Vetna	Dena'ina	Creek into Tazimna River
292		K'eltsali	Dena'ina	Hill opposite Chilchitna River mouth
293	22-22	K'emeq' Ka'ahtnu	Dena'ina	Eagle Bay Creek
294		K'ena'a K'elahi	Dena'ina	Mountain south of Twin Lakes
295		K'enagha Qelahi	Dena'ina	Mountain south of Twin Lakes
296*		K'enekatnu	Dena'ina	Knik village at Fish Creek
297		K'eniqel'u	Dena'ina	Mountain at the head of the Swift River
298		K'enq'a Bena	Dena'ina	Congahbuna Lake
299		K'enuy Dghil'u	Dena'ina	Mountain 4819'
300		K'enuy Vena	Dena'ina	Lakes west of of K'enuy Dghil'u
301		K'etnu Tuvughniy	Dena'ina	Hill 1398' "Chat", west bank of Mulchatna River
302		K'ezghaxtnu	Dena'ina	Gagaryah River
303		K'ezghaxtnu	Dena'ina	Gagaryah River
304		K'ezghaxtnu Gguya	Dena'ina	Little Gagaryah River
305		K'idazq'eni	Dena'ina	Mt. Spurr volcano
306		K'ilghech'	Dena'ina	Valley south of College Creek
307		K'indiz'i	Dena'ina	Ridge south of Summit Creek
308*		K'inq'ena Qayeh	Dena'ina	Rock near Yeq Tsana

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
309		Copper River	English	
310		K'ishitl' Bena	Dena'ina	Southernmost of Big River Lakes
311		K'itudghi'u	Dena'ina	Bay on the northern side of Telequana Lake
312		K'kiyiq' Hnighi'iy	Dena'ina	Mountain 3195' east of Snipe Lake
313		K'kuz'in	Dena'ina	Mountain west of "Tough"
314		K'q'uya Q'atl'a	Dena'ina	Head of Kijik Lake
315		K'q'uya Vena	Dena'ina	Kijik Lake
316		K'qak'eq'a	Dena'ina	Mountain east of Shan Tl'unstl'ini
317		K'qalt'ats'a Vena	Dena'ina	Lake east of Trout Lake outlet
318		K'qizaghetnu	Dena'ina	Stony River
319		K'qizaghetnu Hdakaq'	Dena'ina	Stony River village
320		K'qizaghetnu Tl'ughu	Dena'ina	Upper Stony River
321*		K'qizaghetnu Tl'ughu Z'uni	Dena'ina	Mountain at the head of the Stony River
322		K'qizaghetnu Tustes, Hetl Datusnuch'etd	Dena'ina	Sled Pass from the upper Stony River to the South Fork of the Kuskokwim
323		K'qula Qelchixitnu	Dena'ina	Second creek into the Chulitna River
324		K'unust'in	Dena'ina	Kijik Mountain
325		K'unust'in T'uh K'emeq'	Dena'ina	
326*		K-lok-ha-mut	Yup'ik	No English name given
327		Kahtnu	Dena'ina	Kenai and the Kenai River
328		Kakwok	Yup'ik	Kokwok; village site
329		Kalja Dilen	Dena'ina	Bluff east of Koksetna River
330		Kaljana, Kaljana Qayeh	Dena'ina	Cliff at Qeghnilen
331		Kanack or Aivuviktulik	Yup'ik	Greek Church, Grant's Village
332		Kanakanak	Yup'ik	Village site (Dillingham)
333		Kananakpok	Yup'ik	
334		Kangeracunayaluk	Yup'ik	
335*		Kangeracungarpak	Yup'ik	North of Rocky Point
336*		Kangeracungayaraq	Yup'ik	Next two bays west of Kangeracungayarpak
337		Kangeracunyarpaq	Yup'ik	
338*		Kangiilik	Yup'ik	Nichols Spit
339		Kanulik	Yup'ik	Carmel
340*		Kaokliok, Nu-nuth-ha-mut	Yup'ik	No English name given
341		Kaskanak	Yup'ik	Name of three different sites all at the point where the Nuyakuk River flows out of Tikchik Lake
342		Kauktun	Yup'ik	
343*		Kaviaret	Yup'ik	West of Napangiak
344		Kazhnatnu	Dena'ina	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
345*		Kelistartalik	Yup'ik	Place east of Quluut"
346		Ken Tl'unst'ini	Dena'ina	Mountain east of K'qak'eq'a on Can Creek
347		Kenaniq'	Dena'ina	Kuskokwim River
348*		Kenquq' Tazdlenitnu	Dena'ina	First creek from the north into the Chulitna River
349		Kenquq' Tazdlenitnu	Dena'ina	First creek from north into Chulitna River
350		Keplertuli	Yup'ik	Kipnuktuli Creek
351		Kiimaq	Yup'ik	Geemaq River or Narogurum River on USGS maps; renamed correctly as Narogurum River
352		Kijeghi Tsayeh	Dena'ina	Bluff 310' "Owl Cliff"
353		Kilirqucaraaq	Yup'ik	Upper Togiak River
354		Kipartuli/Kipiruli/Kipnirtuli	Yup'ik	Village site and creek name on upper Togiak River
355	22-22	Kis Vena	Dena'ina	
356*		Kiturciralnguq	Yup'ik	Old village
357		Kokwok River	Yup'ik	Kokwok River
358		Konogoluk	Yup'ik	
359		Lih Vena	Dena'ina	Whitefish Lake
360		Lih Vena Q'estsiq'	Dena'ina	Whitefish Lake outlet site
361		Lihen Dzela	Dena'ina	Mountain north of Whitefish Lake
362		Lik'a Veq' Ighitsa'i	Dena'ina	Island in Chulitna River 67'
363		Lik'a Viqach'ghighani	Dena'ina	Copper Mountain
364		Lik'aha Ht'udelghish	Dena'ina	Bluff on Lake Clark, five miles below Tanalian River
365		Liq'a Qilanhtnu Li'a	Dena'ina	
366		Liq'a Qelahtnu	Dena'ina	Tlikakila River, Big River
367	22-22	liq'a T'el'iht	Dena'ina	Tommy Point
368	22-22	Liq'a T'el'ihtnu	Dena'ina	Tommy Creek
369	22-22	Liq'a Qilantnu, LiqÆa TÆelÆihtnu	Dena'ina	Tommy Creek
370*		Macevik	Yup'ik	No English name given
371		Manasuk	Yup'ik	Manasuk
372*		Maniiaq	Yup'ik	No English name given
373*		Manuquutaq	Yup'ik	Manokotak village
374		Mashiq	Alutiiq	
375*		Metervim Nuura	Yup'ik	Metervik Point
376*		Metervim Qamiqurra	Yup'ik	Metervik Head
377		Minlni Qesigh	Dena'ina	Creek from Minlni Qesigh Dghil'u
378		Minlni Qesigh	Dena'ina	Creek into Stony River east of Lime

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
				Village
379		Minlni Qesigh Dghil'u	Dena'ina	Mountain northeast of Cairn Mountain
380		Minlni Qesigh Dghil'u	Dena'ina	Mountain above Stony River east of Lime Village
381*		Miogavik	Yup'ik	No English name given
382		Miryangcarpak or Macialnguq	Yup'ik	
383		Mitrofinia	Alutiiq	
384		Mitrofinia Bay	Alutiiq	Mitrofinia Bay
385		Nach'ghighun	Dena'ina	Mountain at head of K'chanlentnu, west of Lake Clark
386		Nach'ghighun	Dena'ina	Mountain at head of K'chanlentnu, west of Lake Clark
387		Nach'ghigvuntnu	Dena'ina	Creek into Koksetna River from the east
388		Nadudiltnu	Dena'ina	McArthur River
389		Nadudiltnu Li'a	Dena'ina	McArthur Glacier
390		Nagh'unh	Dena'ina	The Angel
391		Nakernerpak or Nekercurpak	Yup'ik	Long straight stretch of middle Togiak River
392		Mesa Mountain	English	
393		Tutna Lake	English	
394		Nakida Vetna	Dena'ina	Outlet of Tutna Lake
395*		Nallupiaki	Yup'ik	Small Bay between Anngaqtar and Nunavachak Lake
396		Naltundazdaq Tuyana	Dena'ina	Straight stretch on the Stony River
397		Name unrecorded	Yup'ik	West Togiak Lake
398		Named unrecorded	Yup'ik	spawned red fishing stream on upper Togiak River
399		Nan Qelah	Dena'ina	
400		Nan Qelah Tustes	Dena'ina	
401		Nan Qelah Vetnu	Dena'ina	Miller Creek or Miller's Creek
402	22-21	Nanahaghelqeli	Dena'ina	Hill south of Nikabuna Lakes
403*		Nanvarpak	Yup'ik	Big Lake
404*		Napangiak	Yup'ik	Between Nunavachak Lake and Kaviaret
405*		Napanguyaq/Cuqaarankernek	Yup'ik	Mountain east of Kelistarlik
406		Narivatcuaq/Nanvaurluq	Yup'ik	Location on upper Togiak River
407		Nasaurluq	Yup'ik	Nasaurluq Slough on northern and western half of Togiak village
408*		Nat'osno'	Deg Hit'an	Slough from the lower Stony River to the Kuskokwim River, on the south side of the Kus
409*		Nat'osno' Ne	Deg Hit'an	Stony River village island

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
410		Nat'us Nu	Dena'ina	Creek into Hoholitna west of Tundra Lake
411		Nauluktulik	Yup'ik	
412		Nautauagavik	Yup'ik	
413		Navash Tuyana	Dena'ina	Straight stretch on the Kuskokwim River
414		Nayesh K'etnu	Dena'ina	Kustatan River
415		Chisik Island	English	
416		Nduk'eyux Dghil'u	Dena'ina	Telequana Mountain
417	22-22	Negget Qighilnaz Ts'daz'iy	Dena'ina	
418*		Nehvaya Veq'dent'uhi (Nehvaya Veq' Dent'uhi Ni)	Dena'ina	Island on the Stony River above Lime Village, east of Naltundazdaq
419		Nekevgaartullraat	Yup'ik	Upper Togiak River
420*		Nengget Qighilnaz	Dena'ina	
421*		Nenli Zdlu, Nenlishla	Dena'ina	Rocks below Can Creek
422		Nghetggeshi	Dena'ina	Mountain north of Tanivan Vetnu
423	22-21	Nghuyi Jech'a Q'elchini	Dena'ina	Hill 1018' off Rock Creek
424*		Nginiqechun Shehno	Deg Hit'an	Stream into Nat'os No' from the east
425		Nhtnashjeya	Dena'ina	Hills on the northeastern end of Telequana Lake
426		Ni'aqeduh	Dena'ina	Upper Necons River on the upper Stony River
427		Nik'elehtnu	Dena'ina	Creek into Hook Creek
428	22-22	Nika'a	Dena'ina	Porcupine Island
429		Nikida Vetnu	Dena'ina	Nikadavna Creek, outlet of Tutna lake
430		Nikolaevski	Alutiiq	Chignik Lagoon
431	22-21	Nikugh Dghil'u	Dena'ina	Mountain west of Nikabuna Lake
432	22-21	Nikabuna Lakes	English	
433		Nikugh Vetnu	Dena'ina	Neacola River
434		Nil'aqit'u	Dena'ina	Hill north of Stony River
435		Nil'aqit'u Ch'adanilen	Dena'ina	Creek from Nil'aqit'u
436	22-22	Nil'ashk'it'i, Nil'ashex'it'iy	Dena'ina	
437		Nila Vekena	Dena'ina	Island on Telequana Lake
438		Nilavena, Nilanvena, Nilamna, Nila Vena, Iliamna	Dena'ina	Iliamna Lake
439*		Nilan Q'estsiq'	Dena'ina	Iliamna outlet
440		Nil'ashexk'it'i	Dena'ina	Swamp near the mouth of K'chanlentnu
441	50-4	Nilavena Hkaytghi'u	Dena'ina	Iliamna Bay
442	22-22	Nildink'et'a	Dena'ina	Lake Clark Outlet
443	22-22	Nildink'et'a Ch'ih Ch'anil'iy	Dena'ina	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
444		Nilduvunk'idenghaljexa Vena	Dena'ina	Lake east of Kutokbuna Lake
445		Nilghasdlen	Dena'ina	Confluence of Necons and Stony Rivers
446		Nilhalgheldeli	Dena'ina	'Camelback' Hills east of Tommy Creek
447		Nilq'adudlent	Dena'ina	Confluence of the Stony and Telaquana Rivers
448		Twin Lakes	English	
449		Nilqidlen Vena Q'estsiq'	Dena'ina	Twin Lakes outlet
450		Niqak'inghishgich'a Vena	Dena'ina	Hidden River lake
451	22-22	Niqanch'qentdelt	Dena'ina	
452		Niqel'u, Ninqel'u Tughi'u	Dena'ina	Hill "Knob"
453		Nit'eha	Dena'ina	Mountain north of Kijik Lake
454		Nit'eha T'uh Ch'adanilen	Dena'ina	Creek into upper Kijik Lake
455		Nitali	Dena'ina	Halfway Mountain
456*		Niteh	Dena'ina	Matanuska village between the mouths of the Knik and Matanuska rivers
457*		Niteh Nezdlen	Dena'ina	Location uncertain
458		Nitsits'neltledi, Vutsits'niltledi	Dena'ina	Bend and falls on Telaquana River
459	22-22	Nitashk'it'i	Dena'ina	Rapids on Pile River
460	22-22	Nitkintl'udalyuyi Vena	Dena'ina	Dumbell Lake
461		Nizdlu Dghil'u	Dena'ina	North Lime Hill
462		Nizdlu Q'estna	Dena'ina	Creek into Swift River
463		Nizdlu Q'estnu	Dena'ina	Outlet of north Lime Lake
464		Nizdlu Vena	Dena'ina	North Lime Lake
465		Nl'ali Vena	Dena'ina	Lachbuna Lake
466	22-22	Nli Z'untna	Dena'ina	Second creek below Fish Village
467		Nlizdlu Duseh	Dena'ina	A point and several large rocks in the Stony River below Can Creek
468		Nlq'ezhi	Dena'ina	Mountain 5420' north of Two Lakes
469*		no Dena'ina name recorded?	English	Kokhanok Bay, Reindeer Bay, Iliamna Lake
470*		No recorded Dena'ina name	English	Millets Point
471*		Novistluggi Neniq	Deg Hit'an	Across from Inowak Creek
472		Nqutl' Vena	Dena'ina	Lake two miles east of Qeghnilen
473		Nuch'nanilghelitnu	Dena'ina	Creek into Chilikodrotna River from the south
474		Nuch'natninhtnu	Dena'ina	Mosquito River
475		Nuch'tnashtnunhtnu	Dena'ina	Currant Creek
476		Nuch'vastin	Dena'ina	Hills northeast of K'kiyiq'
477		Nudendaggi	Dena'ina	Mountain south of Stony River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
478		Nudenghaljexi Vena	Dena'ina	Lake south of Swift River
479		Nudenghaljexi Vena	Dena'ina	Lake east of Nqutl' Vena
480		Nudyi Qelaht	Dena'ina	Creek into Tlikakila River
481		Nughi'ukda	Dena'ina	Noaukta Slough
482*		Nughil Gguya	Dena'ina	Falls on Telequana River one mile below Telequana Lake
483	22-22	Nughil Hdakaq'	Dena'ina	Newhalen
484	22-21	Nughil Vetnu Nudghilen	Dena'ina	Lower rapids on Newhalen River
485		Nughilen	Dena'ina	Tanalian Falls
486	22-22	Nughilqutnu	Dena'ina	Tazimna River
487	22-22	Nughilqutnu Nudghilen	Dena'ina	
488		Beluga River	English	
489	22-22	Nughiltnu (II, I), Nughilen (I)	Dena'ina	Beluga River
490		Nuk'dghaghelqet'i	Dena'ina	Mountain 4116' north of Tits'nadzenie
491		Nuk'din'utnu	Dena'ina	
492		Nuk'elt'eq'itnu	Dena'ina	North channel of Drift River
493		Nukenl'iy	Dena'ina	Mountain "Owens"
494		Nukenlzhida	Dena'ina	Mountain east of north Lime Lake
495		Nulchedl Nu	Dena'ina	Basket Creek
496		Nulzhida Dghil'u	Dena'ina	Mountain north of east Lime Lake
497		Nulzhida Vena	Dena'ina	East Lime Lake
498		Nulzhida Vetnu	Dena'ina	Outlet of east Lime Lake
499		Nunaaqaq or Nunaqaq	Yup'ik	Right Hand Point
500		Nunachuak	Yup'ik	
501*		Nunacuarell	Yup'ik	Fish and Game camp
502*		Nunakreraq	Yup'ik	Newer second Qulukaaq village
503*		Nunalukaq	Yup'ik	Crooked Island
504*		Nunaqaq	Yup'ik	Right Hand Point
505		Nunauwalik	Yup'ik	
506		Nunch'qelchixi Vena	Dena'ina	Fishtrap Lake
507		Nunch'qelchixtnu	Dena'ina	Little Mulchatna River
508		Nundalchini	Dena'ina	
509	22-22	Nuvendaltun, Nundaltin	Dena'ina	Old Nondalton village
510	22-22	Sixmile Lake	English	
511	22-22	Old Nondalton	English	
512	22-22	Nundaltinshla	Dena'ina	Lake on Newhalen River
513		Nunendastggat	Dena'ina	Mountain north of Nusnigi Q'aghdeq
514		Nunents'istnik	Dena'ina	Site at mouth of South Lime Lake outlet
515		Nuni'iy	Dena'ina	Ridge north of Koksetna River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
516		Nuni'iy	Dena'ina	Hill on Koksetna River
517		Nunk'dushjexa	Dena'ina	Hills above mouth of Bonanza Creek
518		Nuntnalyiy	Dena'ina	"Bald Hills" north of Nikolai Creek
519	22-22	Nunuyali Dina	Dena'ina	
520*		Nunvacuam Nunva	Yup'ik	Nunavachak Lake
521*		Nunvarngak	Yup'ik	Two small lakes from Qaneq"
522	50-4	Nuquk'denghilyasht	Dena'ina	South Head
523		Nurararun or Narurarun	Yup'ik	Naruysrut River or Kashaiak River (?)
524*		Nusdagh Ghileh	Dena'ina	Not located on map.
525		Nusdatl'na Qayeh	Dena'ina	Creek north of Portage Creek
526	22-22	Nusdatl'na Tsana	Dena'ina	Island east of Porcupine Island
527		Nusdnigi	Dena'ina	Mountain 3000' at head of Koksetna River
528		Nusdnigi Q'aghdeq	Dena'ina	Valley with lakes on Koksetna River
529		Nusdnigi Q'aghdeq Tusdultuni	Dena'ina	Lakes on upper Koksetna River
530		Nusdnigi Vena	Dena'ina	Largest lake of Nusdnigi Q'aghdeq Tusdultini
531	22-22	Nusuydastggey	Dena'ina	Beach southwest of Keyes Point
532	22-22	Nusuydastggey Vetnu	Dena'ina	Creek from Veghdeq Idaltin, Henmore Cache Creek
533		Nutenq'a	Dena'ina	Site on upper Bachatna Creek, near the Alaska Range west of Kustatan
534		Nutsatnasggets'	Dena'ina	Rapids near Rock Creek
535	22-22	Nutsatnatggets'	Dena'ina	
536		Nutuzhah	Dena'ina	Creek into Ch'eq'tnu from the west
537		Nuvesdenghik'et'	Dena'ina	Bank at Nora Alexie's fish camp
538		Nuzay Dghil'u	Dena'ina	Hill west of Tundra Lake
539		Nuzay Vena	Dena'ina	Lake west of Tundra Lake
540		Okstukuk	Yup'ik	
541		Old Stuyahok	Yup'ik	
542*		Pamatirgun	Yup'ik	Creek off Kukukak River
543		Pavik	Alutiiq	Paugvik (North Naknek)
544		Pengurpak	Yup'ik	Village site and cemetery on middle Togiak River; also Pengokepuk Creek and Pungokepuk Lake
545*		Penurpiit	Yup'ik	Mountain south of Ungarpak
546*		Pikchivik	Yup'ik	No English name given
547	22-22	Q'aghdeg Vat'esluh Vena	Dena'ina	
548	50-4	Q'anlcha Nuł	Dena'ina	Beach on Iliamna Bay
549*		Q'eqetno'	Deg Hit'an	Inowak Creek
550*		Q'eqetno' Viniq'it	Deg Hit'an	Inowak lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
551*		Q'es Nalchint	Dena'ina	Anchor River mouth village
552		Q'esdudilen Bena	Dena'ina	Skilak Lake
553		Q'eteni	Dena'ina	Ridge at base of Telequana Mountain
554*		Q'eylishghutnu	Dena'ina	Creek into Stony River from the south
555		Q'eyluyghutnu	Dena'ina	Stream into Stony River from the south
556		Q'eytsay Dil'iy	Dena'ina	Hill 2008' by Weasel Creek head
557		Q'eytsay Dilitnu	Dena'ina	Killae Creek, Weasel Creek
558		Q'in Tetl'i	Dena'ina	Round hill (rock) south of Stony River
559*		Q'iyt'ogh	Deg Hit'an	Rapids above "Sinka's"
560		Q'nuqilchin Hqilchin	Dena'ina	Rock 347' in Chulitna Bay
561		Q'uk'tsatnu	Dena'ina	Koksetna River or 'Caribou Creek'
562		Q'uk'tsatnu Vena	Dena'ina	Lake at head of Koksetna River
563		Q'ul Qelaht	Dena'ina	
564		Q'uluq'eya Tuyana	Dena'ina	Straight stretch on Stony River
565*		Q'ut Dghil'u	Dena'ina	Mountain directly across from Old Iliamna village.
566		Qagan	Yup'ik	Togiak Lake on USGS topographic maps
567	50-4	Qahetldildel	Dena'ina	Williams Creek Trail from Iliamna Lake to Iliamna Bay on Cook Inlet
568	22-22	Qak'denghilch'ish	Dena'ina	Mountain above Squirrel Point
569	22-22	Qak'ditl'ix	Dena'ina	Mountain on southeast shore of Lake Clark, at head of Qenlchintnu
570		Qak'ditl'ix Dghil'u	Dena'ina	Mountain at head of Qak'ditl'ix
571	22-22	Qak'ditl'ix Vetnu	Dena'ina	First creek on south shore of Lake Clark
572		Qak'enilah	Dena'ina	Creek into Swift River
573		Qalnigi Aqenlchixi	Dena'ina	Rock at base of Q'eteni
574*		Qalnigi Dnazdlut	Dena'ina	Clam Gulch
575		Qalnigi T'unilen, Qalnigi The Tazdlen	Dena'ina	Rapids below Can Creek
576		Qalnigi Tunilentnu	Dena'ina	Creek into Chulitna Bay
577	22-21	Rock Creek	English	
578		Qamiqucungaq or Qamiqutcuaq	Yup'ik	Village site on lower Togiak River
579		Qaneq	Yup'ik	Kanik River
580*		Qaneq	Yup'ik	Kanik River or Kanik Creek
581	22-22	Qanintin	Dena'ina	Mountain north of Pedro Bay
582	22-22	Qanintin Vena	Dena'ina	Lake at head of Pile Bay
583		Qank'dnazk'et'i	Dena'ina	Mountain 2000' west of K'qula Qelchixitnu
584*		Qankuntnu	Dena'ina	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
585		Qanquhtnu	Dena'ina	McKinley Creek
586*		Qantanghazdlen	Dena'ina	Place on north Lime Lake
587		Qaq'esnintun	Dena'ina	Mountain on north side of Swift River
588		Qaq'esnintuntnu	Dena'ina	Creek into Swift River from the north
589	50-4	Qaqelchix	Dena'ina	Site on south side of Cottonwood Bay
590		Qasqicialnguq	Yup'ik	
591		Qayantda	Dena'ina	Mountain east of K'a Ka'a
592		Qayeh Qeghneq Z'uni	Dena'ina	Mountain "Center"
593		Qayeh Qeghneq Z'uni Vena	Dena'ina	Lake east of Qayeh Qeghneq Z'uni
594		Qayihwik	Alutiiq	Katmai
595		Qedeq Vena	Dena'ina	Lake east of Shagela Vena
596		Qeghchentnu	Dena'ina	Kutchin Creek
597	22-22	Qeghduch'en Eseni Qilu	Dena'ina	
598	22-22	Qeghkuht	Dena'ina	South of Iliamna River mouth
599		Qeghnen	Dena'ina	The Nikishka area
600		Qeghnilen	Dena'ina	Former village site on Stony River
601	22-22	Qeghqidun	Dena'ina	Big Chutes
602		Qelen Nal'u	Dena'ina	Creek into Stink River from the west
603		Qelghin	Dena'ina	Kalgin Island
604		Qeljeq'i	Dena'ina	Hill northwest of Qishdghuch'i
605		Qenchix Ch'denghanuxa	Dena'ina	Hill on the southeastern shore of Telequana Lake
606		Q'enlchintnu	Dena'ina	Creek into Swift River east of north Babel River
607		Qenlghishi Vena	Dena'ina	Kontrashibuna Lake
608		Qenusty'iy	Dena'ina	Ridge on the north bank of the Hoholitna River
609		Qezdeghnen (O), Qeydeghnen (U)	Dena'ina	Kustatan Ridge and village site
610*		Qiikertaq	Yup'ik	Southwest of Togiak
611*		Qikertaar	Yup'ik	Seagull Island
612		Qikertarpak	Yup'ik	Hagemeister Island
613		Qikuluq	Yup'ik	Upper Togiak River
614		Qil'ihtnu	Dena'ina	
615		Qilgich'a Qilant	Dena'ina	Site below Can Creek
616		Qilkeq	Yup'ik	Summit Island
617		Qin Daghedlen	Dena'ina	Creek below Rock Creek
618		Qinazdli Dghil'a	Dena'ina	Mountain 3180' north of Miller's Creek
619		Qinghuch'una	Dena'ina	Mountain 3600' at head of Kenquq' Tazdlenitnu
620		Qinghuya Vena	Dena'ina	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
621		Qinghuyi Dghil'u	Dena'ina	Mountain north of Long Lake
622		Qinghuyi Hq'atighitun	Dena'ina	Trail crossing Chulitna River south of Long Lake
623		Qinghuyi Kiyiq'	Dena'ina	Western tip of Qinghuyi Mountain
624		Qinghuyi Q'aghdeq	Dena'ina	Valley in Joe Nort Lake area
625		Qinghuyi Q'estsiq'	Dena'ina	Long Lake outlet
626		Qinghuyi Vena	Dena'ina	Long Lake
627		Qiniha	Dena'ina	Hill in K'ilghech' on College Creek
628		Qiniq' Ch'anadadlen	Dena'ina	Elutuli Creek
629		Qipnerpak or Kipnertuli	Yup'ik	Bend on middle Togiak River
630		Qishdghuch'i	Dena'ina	Mountain 3948' below the Little Mulchatna River
631		Qissiang/Qissiangaq	Yup'ik	Gechiak Creek; also site on lower Togiak River
632		Qissiangarmiut or Qassqikisciralnurmiut	Yup'ik	Village site on upper Togiak River
633	22-21	Qiyhi Qelahi, Qiyhi Dghil'u	Dena'ina	Groundhog Mountain
634		Qizhjeh	Dena'ina	Kijik village
635		Qizhjeh Vena	Dena'ina	Lake Clark
636		Lake Clark Pass	English	
637		Qizuya	Dena'ina	Tideflat south of Kustatan
638*		Quarcitulik	Yup'ik	Mouth of creek below Uqvikkerlik
639*		Quik	Yup'ik	Southwest from New Togiak Village
640		Qukaq	Alutiiq	Kukak
641		Qukaqliq	Dena'ina	Kukaklek Lake
642	22-21	Qukdeli	Yup'ik	Koktuli River, or Koktalee, or Kaktul (Katz 1910:201)
643		Qulukaq	Yup'ik	Kulukak
644*		Quluut	Yup'ik	Kulukak Point
645		Qunsha Qelah Dghil'u	Dena'ina	Mountain on upper Can Creek
646	22-22	Qunsha T'el'iht	Dena'ina	Squirrel Point, a point on the shore of Iliamna Lake
647		Qutal	Dena'ina	Caribou Hills
648	22-22	Qutiztun	Dena'ina	Mountain 3000 feet elevation, south of Old Iliamna village
649	22-22	Qutuk'uq'a	Dena'ina	Mountain between Tsaq'dak'tazdlen and Pile River
650		Rruulitnaq	Yup'ik	Holitna River
651*		Saguyaq	Yup'ik	Clark's Point village (or Clarks Point village)
652		Savonoski (old)	Alutiiq	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
653		Sdidahtnu	Dena'ina	Nikolai Creek
654*		Senquq	Yup'ik	Up creek from Cingiraak
655		Shagela Dghil'u	Dena'ina	Second Lime Hill south of Stony River; middle south Lime Hill
656		Shagela Q'atl Denghil'iy	Dena'ina	Hill south of Kutokbuna lake
657		Shagela Vena	Dena'ina	Kutokbuna Lake
658		Shagelagh	Dena'ina	Site on isthmus to Kutokbuna Lake
659		Shan Lzheni	Dena'ina	Hill southeast of Mulchatna River
660		Shan Tl'unstl'ini	Dena'ina	Mountain east of middle Can Creek
661		Shank'denshisha	Dena'ina	Mountain at head of Ch'k'ghilt'ezhtnu
662		Shegal Vena	Dena'ina	Kutokbuna Lake
663		Sheh Kaq'	Dena'ina	Site at mouth of Springway Creek or creek into Stony River from south
664		Shehkaq'	Dena'ina	Stream from the south into Stony River
665		Shehtl'unu	Dena'ina	Creek into Telequana Creek
666		Shehtnu	Dena'ina	Creek into Stony River; Springway Creek
667		Shehtnu	Dena'ina	Creek from the south above Qeghnilen
668		Shehtnu Hdakaq', Shehtnu Qayeh	Dena'ina	Site at creek into Stony River from the north
669*		Shk'ituk't	Dena'ina	Old Kenai village
670		Shqitnu	Dena'ina	Skwentna River
671*		Sixchagg	Deg Hit'an	Muskeg Creek mouth
672		Sq'u K'elahi	Dena'ina	Mountain 3396' north of Chilchitna River
673		Sqilan Bena	Dena'ina	Kenai Lake
674		Sts'a, Qests'a	Dena'ina	Hill close to Tundra Lake near Lime Village
675*		Stuts'a	Dena'ina	Location uncertain
676		Suk' Qayeh	Dena'ina	Site on the east bank of Hek'dichen Creek
677		Susni Kaq'	Dena'ina	Mouth of Susitna River
678		Suthuiq	Alutiiq	Sutwik Island
679		Sux Nevu	Dena'ina	White Mountain
680		Suxni Dghil'u	Dena'ina	Mountain 3045' north of Koksetna River
681		Suxni Kiyiq'	Dena'ina	Contact Point
682		Suy Dnashdlaji T'uh	Dena'ina	Hot springs on Swift River
683		Suy Quq'	Dena'ina	Flat at base of Htesten
684		T'esitnu	Dena'ina	Redoubt Creek
685		T'ghesitnu	Dena'ina	Theodore River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
686	50-4	T'usi	Dena'ina	Slope Mountain
687		T'usi Kiyiq'	Dena'ina	Iliamna Point
688		Tach'enil'i Aq'a	Dena'ina	Fish site at Qeghnilen
689		Tach'nach'ninchett	Dena'ina	South fork of Cottonwood Slough
690		Tahlekuk	Yup'ik	Nushugak (Aleksandrovski Redoubt)
691		Tahvil Dulyasht	Dena'ina	Kustatan Slough
692		Tahvil Q'a	Dena'ina	Bay on the southwest shore of Trout Lake
693	22-22	Tahviqt'a	Dena'ina	Goose Bay
694		Hook Creek	English	
695		Talchatnaq' Hdakaq'	Dena'ina	Mouth of Hook Creek, "muskrat mouth"
696		Talin Ch'iltant	Dena'ina	Polly Creek village site
697		Talinertuli	Yup'ik	Upper Togiak River
698		Tanik'edi	Dena'ina	Fish site at Qeghnilen
699		Tanilen Vetnu	Dena'ina	Tanalian River
700		Tanilen Vetnu	Dena'ina	Lower Tanalian River and creek from south
701	22-22	Tanilen Vetnu Tustes	Dena'ina	
702	22-22	Tanivan Qilan	Dena'ina	Beach south of Tanivan Vetnu
703		Tanivan Vetnu	Dena'ina	Creek south of Portage Bay
704		Tank'itnu	Dena'ina	Tyonek Creek, "Old Tyonek Creek"
705		Tanq' Nunst'in	Dena'ina	Tanalian Mountain (see also Tits'nadzeni)
706		Taq' Dghil'u	Dena'ina	Mountain at head of Can Creek
707*		Taq'agits'oyhdi, Toq'agets'	Deg Hit'an	"Gusty's Creek"
708		Taq'ahts'a	Dena'ina	Hill north of "Gusty's Lake"
709		Taq'ahts'a Vena	Dena'ina	Gusty's Lake
710		Tash Dghil'u	Dena'ina	Mountain 'patch' above Kristin River
711		Tatnintin	Dena'ina	Cape Douglas
712		Tava Vena	Dena'ina	Northwest lake in Chulitna Delta
713		Tayanq' Ch'antnalyiy	Dena'ina	Long ridge between Tlikakila and Chokotok rivers
714		Tayanq' Tava Vena	Dena'ina	West lake in Chulitna Delta
715		Tayanq'ditnu	Dena'ina	Middle creek into head of Kijik Lake
716	22-22	Taz'in Vena	Dena'ina	Lower Tazimna Lake
717	22-22	Taz'in Vena Vegh Niltu Deq Dilen	Dena'ina	
718		Tekaat Kuigat	Yup'ik	
719		Telghitnu	Dena'ina	Tatlawiksuk River
720*		Tevatevaam Qamanera	Yup'ik	Tvativak Bay
721		Little Bonanza Creek	English	

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
722		Tich'equan	Dena'ina	Hill 2438' up Bonanza Creek
723		Bonanza Creek	English	
724*		Tiduqilts'ett	Dena'ina	A village site near the mouth of the Swanson River
725		Tika'a Kaq'	Dena'ina	Mouth of Cook Inlet
726		Cook Inlet	English	
727		Tinch'ghilkaq'	Dena'ina	Mouth of Can Creek
728		Tinch'ghilkaq' Ch'vaq'da	Dena'ina	Mountain "Bump"
729		Tinch'ghiltnu	Dena'ina	Can Creek
730		Tits'nadzeni	Dena'ina	Tanalian Mountain (?)
731		Tl'alghe	Dena'ina	Bluff on the south side of Stony River
732		Tl'altnu	Dena'ina	Creek into Stony River from the south
733*		Tl'atiyh Dighelo'	Deg Hit'an	Mountain near the mouth of the Gagaryah River
734		Tl'egh Dilchikt	Dena'ina	New Kustatan
735		Tl'egh Quq'	Dena'ina	Chulitna Delta
736		Tl'egh Quq'	Dena'ina	Flat on the upper Stony River
737		Tl'ill Q'a	Dena'ina	Mountain south of the Hoholitna River
738		Tl'ubugh	Dena'ina	Mouth of Kustatan River
739		Tl'uduq'ena	Dena'ina	Hill west of north Babel River
740		Tl'uhdalzhegh	Dena'ina	Summit Creek
741		Tl'usel Vena	Dena'ina	"Pants Lake"
742		Tleghtitnu	Dena'ina	Hoholitna River
743*		Tleq (?)	Yup'ik	A creek flowing into the Cheeneetnuk River
744*		Toltetno', Tetno'	Deg Hit'an	Titnuk Creek
745		Sleetmute	English	
746		Ts'ananilghazitnu	Dena'ina	Tommy Creek
747	22-22	Ts'atanaltsegh	Dena'ina	Creek below Fish Village
748		Ts'atsaditnu	Dena'ina	Rock Creek
749		Ts'enes Quq'	Dena'ina	Flat northwest of Henesdi
750*		Ts'eslahtnu	Dena'ina	Upper Seldovia Bay village
751		Ts'iqezdegh	Dena'ina	Point Harriet
752		Ts'iqeztnu	Dena'ina	Harriet Creek
753		Ts'itayanq' Tuz'uni	Dena'ina	Island
754		Ts'ixtsa Dghil'u	Dena'ina	Mountain 'caribou'
755		Ts'ixtsatnu	Dena'ina	Little Underhill Creek
756		Ts'izdlen	Dena'ina	Creek into upper Twin Lake from the north
757	50-4	Tsanitnu	Dena'ina	Chinitna Bay and River
758	22-22	Tsaq' Datazdlen,	Dena'ina	Creek into Pile River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
		Tsaq'dak'tazdlen		
759		Tsatnasdel	Dena'ina	Bluff on south side of Stony River
760*		Tsatnasdeli	Dena'ina	Bluff on the north bank of the Stony River
761		Tsayanshla	Dena'ina	Bank on north bank of Stony River
762		Tsayeh	Dena'ina	Point south of Chaq'ah Tugget
763		Tsayeh Ka'ahtnu	Dena'ina	Creek into Chokotok River
764	22-22	Tsayehtnu	Dena'ina	Pile River
765	50-4	Tsayehtnu Tustes	Dena'ina	Pile River Pass from Iliamna Lake to Chinitna Bay
766		Tsi'ul Vena	Dena'ina	South Lime Lake
767*		Tsi'ul Vetnu	Dena'ina	
768		Tsighunitnu	Dena'ina	Creek from Ch'aldi
769		Tsik'kazema Vena	Dena'ina	Creek from Ch'aldi
770		Tsilak'idghutnu	Dena'ina	Chilakadrotna River
771		Tsilak'idghutnu Hdakaq or Nilaghedlen	Dena'ina	Mouth of Chilikodrotna River
772		Tsixtsa Vena	Dena'ina	Lakes on upper Little Underhill Creek
773*		Tthaghoy	Deg Hit'an	Mountain at "Sinka's"
774*		Tthaq'iz	Deg Hit'an	Near elevation 537' "Tower", north (right) bank of Kuskokwim River above Sleetmute
775*		Tthat'ogh	Deg Hit'an	Bluff on the north side of the Kuskokwim River
776*		Tubughna Katidiltuni	Dena'ina	Hayes River Pass from Tyonek to Rainy Pass
777		Tubughnenq'	Dena'ina	Old Tyonek, the Tyonek area
778		Tucheja	Dena'ina	Northernmost of Big River lakes
779*		Tuchuktovik	Yup'ik	No English name given
780		Tudesa Betnu	Dena'ina	Cottonwood Slough
781		Tudetninhtnu	Dena'ina	Creek into Mulchatna from the west, on the trail to Whitefish Lake
782		Tuk'eleh	Dena'ina	
783		Tuk'elehtnu	Dena'ina	Three Mile Creek
784		Tuk'ezitnu	Dena'ina	Tuxedni Bay (II); Tuxedni Bay and River (I,O)
785		Tuk'ezitnu li'a	Dena'ina	Tuxedni Glacier
786		Tuk'nudghetl'	Dena'ina	Lake north of McArthur River
787		Tuken	Dena'ina	Bay on the south shore of Telequana Lake
788		Tulggezh	Dena'ina	Mouth of Big River
789		Tulggezh Bena	Dena'ina	Largest of Big River lakes
790		Tulggezh Betnu	Dena'ina	Big River

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
791		Tulghulch'ema	Dena'ina	Lake south of Shagela Vena
792		Tultsa Dzela	Dena'ina	Mountain 3129' south of Hook Creek
793		Tumlutuli or Tumlituli	Yup'ik	Upper Togiak River
794		Tunel'u	Dena'ina	Creek into head of Tundra Lake
795		Tunghashtggech	Dena'ina	Bay on the north shore of Telequana lake
796		Tunghashtggecht	Dena'ina	
797		Tungtunuaq or Tuntunguarmiut	Yup'ik	Old village site, right bank of upper Togiak River, downstream from Nararun
798	22-22	Tuni T'el'ht	Dena'ina	
799	22-21	Tuni Vetnu	Dena'ina	Upper and lower Talarik Creek
800	50-4	Tuniljun, Tuniljuni	Dena'ina	Johnson River
801		Tunravik	Yup'ik	
802		Tunuyarpak or Tunuyarpagmiullret	Yup'ik	Village name on lower Togiak River
803		Tuq'ets' Q'a	Dena'ina	Creek into Tsighunitnu
804*		Tuqlung	Yup'ik	Tuklung River
805	50-4	Tus K'ghulk'et'	Dena'ina	Portage Pass from Iniskin Bay to Chinitna Bay
806		Tus Lits'eghlaghilk'et	Dena'ina	Ridge on both sides of creek
807	50-4	Tus Nuch'k'elyasht	Dena'ina	Iliamna Portage
808	22-22	Tus Tl'eghla Tusdghilk'et', Tus Tl'its'eghal	Dena'ina	Pass from Tanalian River (Kontrashibuna Lake) to Tazimna Lames
809*		Tusch'vaghil'u	Dena'ina	A pass near Nudendaggi
810		Tusnuch'val'uh Vena	Dena'ina	Lake at head of Ch'k'ghilt'ezhtnu
811		Tusnudulyuyi Vena	Dena'ina	Salmonberry Lakes
812*		Tutgaralukilgik	Yup'ik	No English name given
813		Tutl'uh	Dena'ina	Turnagain Arm
814		Necons River	English	
815		Tutnutl'ech'a Tustes	Dena'ina	Merrill Pass from Two Lakes to Tyonek or Kustatan
816		Tutnutl'ech'a Vedakaq'	Dena'ina	Site at head of Two Lakes
817		Tutnutl'ech'a Vena	Dena'ina	Two Lakes
818		Tutnutl'ech'a Vena Veq'atl'a	Dena'ina	Site at head of Two Lakes
819		Tutsil'i	Dena'ina	Ridge northwest of Polly Creek
820		Tuunrivik Creek	Yup'ik	Tunravik Creek
821		Tuveshq'ul	Dena'ina	Sleetmute village
822		Tuviarok	Yup'ik	
823		Tuvughna Ten	Dena'ina	Creek into Kijik River toward Fishtrap Lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
824		Tuyuryam Kuiga/Tuyuryaq	Yup'ik	Togiak River
825*		Tuyuryaq	Yup'ik	Old Togiak village
826*		Tuyuryaq	Yup'ik	New Togiak village
827		Tuzqun	Dena'ina	Point Possession
828		Tyonek	English	Tyonek village
829		Uggßsaq	Alutiiq	Ugashik
830	22-22	Ulcha Dghil'u	Dena'ina	Roadhouse Mountain
831	22-22	Ulcha Tudel Vena	Dena'ina	Old Schoolhouse Lake
832*		Ungalaqlik	Yup'ik	Ungalikthluk
833*		Ungarpak	Yup'ik	Mountain north of Ekviraat
834		Ungluyaraq	Yup'ik	Rocky Point
835	22-22	Hoknede Mountain	English	
836*		Unnamed site		No English name given
837*		Unqeghdut Qutal'i	Dena'ina	Long sandbar on south end of Kalgin Island
838	22-22	Unqeghnich'en Taz'in Vena	Dena'ina	Upper Tazimna Lake
839	22-22	Upper Tazimina Lake	English	
840	22-22	Unqeghnich'en Z'uni	Dena'ina	Mountain south of Upper Tazimna Lake
841		Unqeghnich'en Z'uni	Dena'ina	Mountain "Gagaryah"
842		Upper Twin Lakes	English	
843*		Unqeghnit Qutal'i	Dena'ina	Long sandbar on north end of Kalgin Island
844*		Uqvikkerlik	Yup'ik	Up the creek from Quarcitulik
845		Urrasqaq/Ursaqaq	Yup'ik	Lower Togiak River
846		Ush K'itudghi'uyi	Dena'ina	"Snowshoe Bay"
847*		Uzintun	Dena'ina	Homer Spit
848		Vadi Q'elchini	Dena'ina	Hill 1613' on north Babel River
849		Vahniquduni	Dena'ina	
850		Vahunhnashdghuch'I or Qishdghuch'i	Dena'ina	Mountain southeast of Port Alsworth
851	22-21	Vahunk'ulgedi	Dena'ina	Westernmost of Nikabuna Lakes
852*		Vahunk'ulgedi Vena	Dena'ina	Lake west of Telaquana River
853		Valatga Q'elchini	Dena'ina	Mountain by Swift River
854	22-22	Valiggena Tustes	Dena'ina	Pass from Meadow Lake to Dutton on Cottonwood Bay
855		Valts'atnaq'	Dena'ina	Mulchatna River
856		Turquoise Lake	English	
857		Vandazqats' Vena	Dena'ina	Lake west of Telequana Lake outlet
858		Vandaztuntu	Dena'ina	Outlet of Turquoise Lake, upper Mulchatna River to Denyihtnu
859		Vank'dinch'ey Vena	Dena'ina	Lake southwest of Tundra Lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
860		Vank'dinch'ey Vetnu	Dena'ina	Creek into Tundra Lake from the west
861		Vanq'ashli Tusnuch'eldel	Dena'ina	Portage on upper Chulitna Delta
862		Tavash Dghil'u, Vashi Dghil'u	Dena'ina	Mountain north of Hook Creek
863		Vashla Itnughizhelitnu	Dena'ina	Creek south of Tanalian River
864	22-22	Vata'esluh Vena	Dena'ina	South Pickerel Lake
865	22-22	Vata'esluh Vena Q'estsiq'	Dena'ina	
866		Vatsilyaxi	Dena'ina	Hill northwest of Lime Village
867		Vatsilyaxi Ghenih Ch'adanilen	Dena'ina	No English name given
868		Vatsilyaxi T'uh Ch'adinleni	Dena'ina	Creek at base of Vatsilyaxi
869		Vatunuch'ixch'elyaxi	Dena'ina	Lake north of Tunel'u
870		Vaydink'et'	Dena'ina	
871		Vazh'atnu	Dena'ina	North Babel River, a tributary of the Swift River from the north
872		Vazh'atnu Hdakaq'	Dena'ina	Mouth of north Babel River
873		Vazh Dghil'u	Dena'ina	Mountain "Wolf"
874		Ve'ela Daghildeggi	Dena'ina	A location on Chulitna River above mouth of K'chanlentnu
875		Vech'nuch'k'ulghela Vena	Dena'ina	Lake north of Venjuch' Vena
876		Veghdeq Dghilenka'a	Dena'ina	
877		Veghdeq Dghilenshla	Dena'ina	
878		Veghdeq Idaltin	Dena'ina	Miller Lake, lake north of Hoknede Mountain
879		Veghdeq Tighitun	Dena'ina	Trail between Lime Hills
880		Veghunch'titnashi	Dena'ina	Mountain west of Tutna Lake
881		Vehtiztun	Dena'ina	Two hills west of Lime Hills
882		Vehtiztuntnu	Dena'ina	Creek into Stony River west of Lime Hills
883		Ven Dak'uch'eni	Dena'ina	Mountain south of Whitefish Lake
884*		Ven K'el'in	Dena'ina	Hill along creek which runs into Kijik Lake
885		Ven Dash Dghil'u	Dena'ina	Third Lime Hill south of Stony River, Sparrevohn Mountain
886		Ven Dash Dghil'u	Dena'ina	"Sparrevohn Mountain"
887		Vendash Vena	Dena'ina	Tundra Lake
888		Vendashtnu	Dena'ina	Stink River
889		Venen K'el'in	Dena'ina	Hill along creek which runs into Kijik Lake
890		Venen K'el'in Q'estsiq'	Dena'ina	Creek into Lake Clark from Venen K'el'in Vena
891		Venen K'el'in Vena	Dena'ina	Lake south of Venen K'el'in
892		Venjuch' Vena	Dena'ina	Lake north of North Lime Lake
893		Venkdah Vena	Dena'ina	Lake north of Half Cabin Lake

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
894		Venq'atl'	Dena'ina	Head of Telequana Lake
895*		Venq'deltihi	Dena'ina	
896		Venq'deltihi Dghil'u	Dena'ina	Ridge on both sides of creek
897		Venq'deltihi Vena	Dena'ina	Lake off Koksetna River
898		Venq'deltihi Q'estsiq'	Dena'ina	First creek into Koksetna River from north
899		Venshla Vugh	Dena'ina	Lake flowing into Koksetna River
900	22-21	Venteh	Dena'ina	Lake country west of Iliamna Lake
901		Venteh Dek'enluhi	Dena'ina	Lakes north of Swift River
902		Ventunhninlyin	Dena'ina	point north of Chulitna Bay
903		Venuch'dghalqet'i	Dena'ina	Mountain east of head of Telequana Lake
904		Venuydenghaljegi	Dena'ina	hill north of Q'in Tetl'i
905		Venuydenghastl'ini	Dena'ina	Lake east of the head of Whitefish Lake
906*		Veq' Hnitsadenghi'iy	Dena'ina	Location uncertain
907		Veq' Htunut'uyi	Dena'ina	Ridge east of Hek'dichen Dghil'u
908		Veq' Htut'nut'uyi Ch'adanilen	Dena'ina	First creek on north shore of Trout Lake
909		Veq' Naghts'delts'ihi	Dena'ina	Hill on south shore of Chulitna Delta
910		Veq'lighitsa'i	Dena'ina	Hill west of Mulchatna River
911	22-21	Veq Dnagh K'dghasdiy	Dena'ina	Mountain between Nikabuna Lakes
912		Ves Q'el	Dena'ina	Bluff on south side of Stony River
913		Vetnulghelitnu	Dena'ina	Creek into Stony River from the south
914	50-4	Vetudil'i	Dena'ina	Creek below Ulcha Tsayeh
915		Vich'andaghedlen	Dena'ina	Stream from Qayantda into Vandaztunhtnu
916	50-4	Vighuk'di'ushi	Dena'ina	Mountain on Iliamna Bay
917	22-22	Vighutiztin	Dena'ina	Lonesome Point
918	22-22	Vighutiztin Q'atl'a	Dena'ina	Lonesome Bay
919		Vighuzdlen	Dena'ina	
920		Vil Qutnu	Dena'ina	Caribou Snare Creek, creek into Hek'dichen from the east
921		Vil Qutnu Dghil'u	Dena'ina	Cairn Mountain
922		Vil Qutnu Tl'ughu	Dena'ina	Upper Vil Qutnu
923*		Viniq'i Xidoshagg	Deg Hit'an	Slough near Inowak Creek
924	22-21	Vinlni Dnaghishini Vetnu	Dena'ina	Creek from the south to Veq Dnagh K'dghasdiy
925	50-4	Viqidin Ts'iznigitnu	Dena'ina	Iniskin Bay and River
926		Viy Ka'atnu	Dena'ina	Creek into Koksetna River east of Mesa Mountain
927*		Vuktuli	Yup'ik	No English name given

Place Name No.	Figure That Identifies Place No.	Place Name	Language	Description/Translation[a]
928		Xaletno', Xoletno'	Deg Hit'an	Holitna River
929		Yaghenen	Dena'ina	Kenai Peninsula
930	50-4	Yaha Nlin	Dena'ina	Whitegill Island
931		Yekuk	Yup'ik	Ekuk
932	22-22	Yeq Qalniga or Qaligi Cheh Tudnaz'un	Dena'ina	
933		Yeq Tsana	Dena'ina	Bluff at mouth of Yeqtnu
934		Yeqtnu	Dena'ina	Creek from Lake east of Hidden River Lake
935		Yeqtnu Denyiq'	Dena'ina	Site of Yeqtnu
936		Yeqtnu Vena	Dena'ina	Lake east of Hidden River Lake
937	50-4	Yis Ggihtna	Dena'ina	West Glacier Creek
938		Yududuhtnu Dghil'u	Dena'ina	Mountain at head of Kristin Creek
939		Yududuhtnu Hdakaq'	Dena'ina	mouth of Kristin Creek
940		Yudun Dghil'u	Dena'ina	Knutson Mountain, Knudsen Mountain
941		Yusdi Ghuyiq'	Dena'ina	"Indian Point" north end of Turner Bay
942	22-22	Yutsi Dghil'u, Yutsi Qilan	Dena'ina	Knutson Mountain, Knudsen Mountain
943	22-22	Yutsi Qilant, Yutsi Qilan Q'atl'a	Dena'ina	Knutson Bay, Knudsen Bay
944	22-22	Yutsi Qilantnu	Dena'ina	Knutson River
945		Yuyan Ach'edelt	Dena'ina	pass north from Kijik Lake toward the Koksetna River
946		Yuzheghni	Dena'ina	Mountain at head of Ptarmigan Creek
947		Ptarmigan Creek	English	
948	22-22	Zahar Dina	Dena'ina	
949		Zdlagh Zghaxtnu	Dena'ina	Big River
950		Zdlagh Zghaxtnu Tl'ughu Qetni'uni	Dena'ina	Mount Hesperus

a. Description/Translation excerpted verbatim from the source materials.

Sources: Crowell, Steffian, and Pullar, 2001; Ellanna and Balluta, 1992; Gross, 1991; Jacobson, 1984; J. Kari 1977; Kari and Fall 2003; Kari and Kari, 1982; Kari, Kari and Balluta, 1986; Martin and Katz, 1910; Wright and Chythlook, 1985.

APPENDIX 22B

All Cultural Resources Features Identified during Interviews for the Bristol Bay and Cook Inlet Drainages

ALL CULTURAL RESOURCES FEATURES IDENTIFIED DURING INTERVIEWS FOR THE BRISTOL BAY AND COOK INLET DRAINAGES

Locations of all cultural resource features identified by respondents during the cultural resources and related interviews are shown on Figure 22-23. The locations of those features within each of the respective study areas also are identified on Figures 22-24a through 22-24c (mine study area), Figures 25a through 25d (transportation-corridor study area), and Figure 50-5 (Cook Inlet drainages study area).

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
BTL-001	22-24b	"The Rapids"	50-plus years
BTL-002	22-25b	Schoolhouse Lake	50-plus years
BTL-003		Twin Lakes	50-plus years
BTL-004		Lookout Mountain battle site	50-plus years
BTL-005		Fish Camp battle site	50-plus years
BTL-006		Indian war site	Old
BTL-007		Big Mountain battle site [off map/mylar]	50-plus years
BTL-008		Peter's Plug	50-plus years
BTL-009	22-25b	Intricate Bay battle site with Aleuts	50-plus years
BTL-010		Lookout Mountain bay	50-plus years
BTL-011	22-24b, 22-25b	Battle site above Petrov Falls	50-plus years
BTL-012	22-25b	Roadhouse Mountain Battle site	50-plus years
BTL-013	22-25b	Roadhouse Mountain battle site	50-plus years
BTL-014		Indian war grounds	Unknown
BTL-015		Indian and Aleut main battle	Unknown
BUR-001	22-25c	Graves at fish camp	Multigenerational
BUR-002		Kijik cemetery	50-plus years
BUR-003		Tanalian Point and Port Alsworth burials	50-plus years
BUR-004		Tanalian and Port Alsworth Burials	Unknown
BUR-005	22-25c	Cremains dispersed on Upper Tazimina Lake	Unknown
BUR-006		Wilson's Hilton cremains dispersal	Unknown
BUR-007	22-24c	Graves near the site of Old Newhalen	Old
BUR-008	22-25c	Graves at the site of Old Newhalen	Old
BUR-009	22-24c	Upper Talarik cabins and graves	Old
BUR-010	22-24c	Graves near Lower Talarik Village site	50-plus years
BUR-011		Northeast slope of Big Mountain	Old
BUR-012		Fish Camp burial site east	Multigenerational
BUR-013		Old Russian Orthodox Church cemetery in Old Kokhanok	50-plus years
BUR-014	22-24c, 22-25c	Graves near Old Newhalen	50-plus years
BUR-015		Fish Camp burial site west	Multigenerational
BUR-016	22-24c	Lower Talarik Village cemetery	50-plus years
BUR-017		Old Kokhanok burials	Old

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
BUR-018		New Kokhanok church	Multigenerational
BUR-019		Burials by lake at base of hill in Kokhanok	Multigenerational
BUR-020		Fish Camp burials (1)	Multigenerational
BUR-021		Burials near camp	50-plus years
BUR-022		Old Kokhanok Church	50-plus years
BUR-023		Graves by cabin	Multigenerational
BUR-024		Graves associated with fish camp	Multigenerational
BUR-025		Reindeer Bay graves	Multigenerational
BUR-026		Burials near camp	Multigenerational
BUR-027		Kokhanok burials	Unknown
BUR-028		Old burials	Old
BUR-029		Old village and camp burials	50-plus years
BUR-030		Old village and camp burials	50-plus years
BUR-031		Old village and camp burials	50-plus years
BUR-032		Old village and camp burials	50-plus years
BUR-033		Old village and camp burials	50-plus years
BUR-034		Old village and camp burials	50-plus years
BUR-035		Fish camp burials	Multigenerational
BUR-036		Kokhanok in-town burials	Multigenerational
BUR-037		Airport area burials	Unknown
BUR-038		Kijik cemetery	50-plus years
BUR-039		Indian Point burials	50-plus years
BUR-040	22-24c	Upper Talarik Creek mouth	50-plus years
BUR-041		Kokhanok cemetery	50-plus years
BUR-042		Old Kokhanok cemetery	50-plus years
BUR-043		Old Kokhanok fish camp, west side of creek	50-plus years
BUR-044		Dennis Creek burials	50-plus years
BUR-045	22-25c	Fish camp and burials	Multigenerational
BUR-046	22-25c	Bible camp and graves near old Nondalton	Unknown
BUR-047		Interviewee's grandfather's burial site	Old
BUR-048		Drowning-haunted place?	Unknown
BUR-049		Big Mountain Creek village burial site	Old
BUR-050		Eagle Bluff burial	Unknown
BUR-051		Old Russian Orthodox Church cemetery in Old Kokhanok	50-plus years
BUR-052		Kokhanok burials	Unknown
BUR-053		Fish camp burials	Multigenerational
BUR-054		Reindeer Bay village burials	Old
BUR-055		Burials, both sides of river	Old
BUR-056	22-24c	Burials, camp, and cabins on high ground	Multigenerational
BUR-057		Telaquana graveyard	50-plus years
BUR-058		Kijik cemetery	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
BUR-059		Chulitna Bay burials	50-plus years
BUR-060		Graves at Kokhanok Fish Camp	50-plus years
BUR-061		Fish camp burials, west side of creek	50-plus years
BUR-062		Old Kokhanok church	50-plus years
BUR-063	22-25c	Old Nondalton burials	50-plus years
BUR-064	22-25c	Fish Village burials	50-plus years
BUR-065		Kijik cemetery	50-plus years
BUR-066		Cabins or lodge with burials nearby	50-plus years
BUR-067	22-25c	Fish camp burials on a hill	50-plus years
BUR-068		Indian Point burial sites	50-plus years
BUR-069	22-25c	Fish camp with burials	Unknown
BUR-070	22-25c	Fish camp with burials	Unknown
BUR-071	22-25c	Portage Landing camp with burials	50-plus years
BUR-072		Kokhanok Fish Camp burials	Multigenerational
BUR-073		Burials	Multigenerational
BUR-074		Burials	Multigenerational
BUR-075		Old Kokhanok church and graves	50-plus years
BUR-076		Burials	Old
BUR-077		Burials	Old
BUR-078		Old Kokhanok cemetery	50-plus years
BUR-079		Burials and village	Old
BUR-080		Shaman's burial site	Old
BUR-081	22-24c	Possible burials	50-plus years
BUR-082		Eagle Bluff graves	Old
BUR-083	22-25c	Fish Village burials	50-plus years
BUR-084		Telaquana cemetery	50-plus years
BUR-085	22-25c	Fish camp burials	50-plus years
BUR-086		Chulitna River, burials by camp	Old
BUR-087	22-25c	Possible burials	50-plus years
BUR-088		Big Mountain burials	50-plus years
BUR-089		Kukaklek Lake north shore burials	Old
BUR-090		Yellow Creek burials	Old
BUR-091	22-24c	Lower Talarik Creek burials near lakes	Old
BUR-092		Burials downstream from Levelock	Old
BUR-093		Burials	Unknown
BUR-094		Burials	Unknown
BUR-095		Burials	50-plus years
BUR-096		Old graveyard	Unknown
BUR-097		Burial	Unknown
BUR-098		Burial	Unknown
BUR-099		Burial	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
BUR-100		Burial	Unknown
BUR-101		Burial	Unknown
BUR-102	22-25c	Burials at Old Nondalton	Unknown
BUR-103		Burials near Kokhanok	Unknown
BUR-104		Burials at fish camp	Unknown
BUR-105		Burial	Unknown
BUR-106		Burial	Unknown
BUR-107		Graveyard	Unknown
BUR-108		Burial	Unknown
BUR-109		Burial grounds	Unknown
BUR-110		Shaman burial near Tommy Point	Unknown
BUR-111		Burials by Gibraltar River	Unknown
BUR-112		Old graves at Kokhanok	Unknown
BUR-113		Burial	Unknown
BUR-114		Burials at Nunachuak	Unknown
BUR-115	22-25c	Burials near Newhalen	Unknown
BUR-116	22-24c	Burials near Newhalen	Unknown
BUR-117	22-25c	Burials	Unknown
BUR-118	22-25c	Burials	Unknown
BUR-119	22-24c	Burials	Unknown
BUR-120	22-24c	Burials	Unknown
BUR-121	22-24c	Burials	Unknown
BUR-122		Burials near Kijik	50-plus years
BUR-123		Burials near Kijik	50-plus years
BUR-124	22-25c	Burial at fish camp	Unknown
BUR-125	22-25c	Burial near Old Nondalton	Unknown
BUR-126		Burial at Indian Point	Unknown
BUR-127	22-25c	Burials near lake on Newhalen River	Unknown
BUR-128	22-25c	Burials near fish camp in Sixmile Lake	Unknown
BUR-129	22-25c	Graveyards at Old Village	50-plus years
BUR-130	22-25c	Burials	Unknown
BUR-131	22-25c	Graveyard at old village	Unknown
BUR-132		Burials at Kijik	50-plus years
BUR-133	22-25c	Burial	Unknown
BUR-134		Burials at Kijik	50-plus years
BUR-135	22-25c	Burials at fish camp	Unknown
BUR-136		Burials at Kijik	50-plus years
BUR-137	22-25c	Burials at old village near Lonesome Bay	Unknown
BUR-138	22-25c	Russian Orthodox graveyard at Old Iliamna	50-plus years
BUR-139	22-25c	Burials at Lonesome Bay	Unknown
BUR-140	22-25c	Burials at Old Village	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
BUR-141		Burials south of Tanalian River	Unknown
BUR-142		Burials at old village	Unknown
BUR-143		Burials near Tanalian River	Unknown
CAB-001	22-24a	Upper Talarik cabin	Unknown
CAB-002		Lucky Lucy Lake Cabin	Unknown
CAB-003		Trapline cabin	Unknown
CAB-004		Lachbuna Lake Cabin	Unknown
CAB-005		Private inholding cabins on Telaquana Lake	Unknown
CAB-006		Cabin	Unknown
CAB-007		Snipe Lake cabin	Unknown
CAB-008		John Olympic's cabin	Unknown
CAB-009		Clark Whitney's Lodge on Whitefish Lake	Unknown
CAB-010		Family hunting lodge	Unknown
CAB-011	22-24a	Cabin	Unknown
CAB-012		Cabins at Kijik	Unknown
CAB-013		John Olympic's Cabin	Unknown
CAB-014		Cabin on Mulchatna River	Unknown
CAB-015	22-24a	Lower Talarik Cabin	Unknown
CAB-016		Little Mulchatna Lodge	Unknown
CAB-017		Chulitna Cabin 2	Unknown
CAB-018	22-24a	Lower Talarik Creek cabin	Unknown
CAB-019		Chulitna Cabin 3	Unknown
CAB-020	22-24a	Upper Talarik cabin	Unknown
CAB-021		Chulitna Cabin 1 with burials nearby	Unknown
CAB-022	22-25a	Cabin	Unknown
CAB-023	22-24a	Uncle's cabin	Multigenerational
CAB-024		Hatchet Point cabins	50-plus years
CAB-025		Proenneke's Cabin	Unknown
CAB-026		Hammonds' Cabin	Unknown
CAB-027		John Olympic's Amakdedori cabin	Multigenerational
CAB-028		Two cabins on Bruin Bay	Multigenerational
CAB-029		Cabin	Old
CAB-030		Cabin at Gibraltar Lake	Multigenerational
CAB-031	22-24a	Cabin (Upper Talarik mouth)	Multigenerational
CAB-032	22-24a	Cabin (Lower Talarik mouth)	Multigenerational
CAB-033		Cabin	50-plus years
CAB-034		Cabin	Multigenerational
CAB-035		Interviewee's grandparent's trapping cabin	50-plus years
CAB-036		Interviewee's grandparents' Nonvianuk Lake cabin	50-plus years
CAB-037		Dennis Creek Lake cabin	Multigenerational
CAB-038		Interviewee's dad's cabin	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CAB-039		Spooky Cabin near Gibraltar Lake	Old
CAB-040		Cabin	Multigenerational
CAB-041		Interviewee's summer fish camp	Multigenerational
CAB-042		Amakdedori cabins	50-plus years
CAB-043		Reindeer Bay camp	Multigenerational
CAB-044		John Olympic's Cabin, Amakdedori	50-plus years
CAB-045		Cabin	Multigenerational
CAB-046		Kokhanok Bay cabins	50-plus years
CAB-047		Interviewee's father's cabin at Kukaklek	50-plus years
CAB-048		Gibraltar Lake cabins	Multigenerational
CAB-049		Cabin	Multigenerational
CAB-050		Old cabin with wood stove	Old
CAB-051		John Olympic's cabin, Amakdedori	Old
CAB-052		Dennis Creek cabins	50-plus years
CAB-053		Dennis Lakes cabins	50-plus years
CAB-054	22-24a	Cabin	Multigenerational
CAB-055		Cabin at Gibraltar Lake	Multigenerational
CAB-056	22-24a	Cabin (Upper Talarik mouth)	Multigenerational
CAB-057		Old trapline cabin	Old
CAB-058		Dennis Creek Lake cabin	Old
CAB-059	22-24a	Cabin (Lower Talarik mouth)	Multigenerational
CAB-060		McNeil Bay hunting camp	50-plus years
CAB-061		Olympic's cabin at Amakdedori	Multigenerational
CAB-062		Kokhanok Bay cabins	50-plus years
CAB-063		Dennis Creek allotment with cabin	Old
CAB-064	22-24a	Ira Wassilie's allotment and cabin	Multigenerational
CAB-065	22-24a	Lower Talarik cabin	Multigenerational
CAB-066		Olympic cabin at Amakdedori	Multigenerational
CAB-067		Mesa Mountain cabin	Old
CAB-068		Chulitna Bay cabins	50-plus years
CAB-069		Cabins	50-plus years
CAB-070		Interviewee's cabin	50-plus years
CAB-071	22-24a	Lower Talarik cabin	Multigenerational
CAB-072	22-24a	Upper Talarik cabin	Multigenerational
CAB-073		Portage Creek cabin	50-plus years
CAB-074		GG's cabin	Multigenerational
CAB-075		Gibraltar Lake camps and cabin	Multigenerational
CAB-076		Fennie's cabin	Multigenerational
CAB-077		Cabin	Old
CAB-078		Contact Point village, cabin	Multigenerational
CAB-079		Gabby's camp	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CAB-080		Old cabin	Old
CAB-081	22-24a	Cabin	50-plus years
CAB-082		Cabins on Kokhanok Bay	Old
CAB-083		Cabins on Kokhanok Bay	50-plus years
CAB-084		Cabin, moose camp	Multigenerational
CAB-085	22-24a	Cabin	Multigenerational
CAB-086		Cabin with a steam	Old
CAB-087		Cabin near the moose lookout	Old
CAB-088		Halfway Mountain cabin	Old
CAB-089	22-24a	Uncle's cabin	Multigenerational
CAB-090		Interviewee's mom's cabin	50-plus years
CAB-091		Interviewee's uncle's cabin	50-plus years
CAB-092		Old cabin near Kukaklek throat	50-plus years
CAB-093		Trapline cabin at Fish Hook Bend	Old
CAB-094		Trapline Cabins	Old
CAB-095		Yellow Creek cabins	Old
CAB-096	22-24a	Fish and Game cabin, Lower Talarik	Old
CAB-097	22-24a	Uncle's cabin on Lower Talarik Creek	Old
CAB-098		Tilley's cabin	Old
CAB-099		Fallen down cabin	Unknown
CAB-100		Cabin on Yellow Creek	50-plus years
CAB-101		Cabin at mouth of Mosquito Creek	50-plus years
CAB-102		Old trapping cabin	50-plus years
CAB-103		Interviewee's grandparents' cabin	Multigenerational
CAB-104		Interviewee's grandfather's cabin	Multigenerational
CAB-105		Old family cabin	Multigenerational
CAB-106		Cabin	50-plus years
CAB-107		Cabin at Old Alagnak village site	Unknown
CAB-108		Family cabin	Multigenerational
CAB-109		Cabin at Old Alagnak village site	Unknown
CAB-110		Cabin near Black Point	Unknown
CAB-111		Interviewee's mother's cabin	Multigenerational
CAB-112		Interviewee's great-grandfather's cabin on Mulchatna	Multigenerational
CAB-113		Cabin south of Portage Creek area	Unknown
CCH-001	22-25b	Hemmer's Cache	Unknown
CCH-002	22-25b	Hemmer's Cache	Unknown
CCH-003	22-25b	Cache	Old
CMP-001	22-24a	Charlie Trefon Camp	Old
CMP-002		Portage Lake camp	Unknown
CMP-003		Fishtrap Lake trapping camp	Unknown
CMP-004		Miller Lake trapping camp	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-005		Fenny's Camp	Unknown
CMP-006		Lookout Mountain camp	Multigenerational
CMP-007		Tea camp	Unknown
CMP-008		Current Creek camp at mouth	Unknown
CMP-009	22-25a	Camp	Unknown
CMP-010	22-25a	Alexcey Lake Bible Camp site	Unknown
CMP-011	22-24a	Beaver camp	Unknown
CMP-012	22-25a	Lower Tazimina Lake camp	Unknown
CMP-013	22-25a	Moose and bear camp, Lower Tazimina Lake	Unknown
CMP-014	22-25a	Long Lake campsite	Unknown
CMP-015	22-25a	Bird-hunting camp	Unknown
CMP-016		Sheep camp on Current Creek	Unknown
CMP-017	22-25a	Dog team days camp on Lower Tazimina	Unknown
CMP-018		Good camping area on Long Lake	Unknown
CMP-019		Bear and Moose camp on upper Lake Clark	Unknown
CMP-020		Fur-hunting camp	Unknown
CMP-021		Chulitna Moose Camp	Unknown
CMP-022	22-24a	Long Lake good camping area	Unknown
CMP-023		Wolf-hunting camp near Dutna Lake	Unknown
CMP-024	22-25a	Camp/allotment on lower Tazimina	Unknown
CMP-025	22-25a	Lower Tazimina camp	Unknown
CMP-026	22-25a	Camp on Lower Tazimina Lake	Unknown
CMP-027	22-25a	Camp on Upper Tazimina Lake	Unknown
CMP-028	22-25a	Camp	Unknown
CMP-029	22-25a	Camp	Unknown
CMP-030	22-25a	Grayling camp	Unknown
CMP-031	22-24a	Frying Pan Lake tent camp	Unknown
CMP-032		Moose camp and lookout	Unknown
CMP-033		Fish camp	Unknown
CMP-034	22-25a	Fish camp	Unknown
CMP-035	22-25a	Fish Camp	Unknown
CMP-036		Long Lake camp 1	Unknown
CMP-037	22-24a	Long Lake Camp 2	Unknown
CMP-038	22-24a	Nikabuna Camp 1	Unknown
CMP-039	22-24a	Nikabuna Camp 2	Unknown
CMP-040	22-24a	Nikabuna Camp 3	Unknown
CMP-041	22-24a	Long Lake camp	Unknown
CMP-042	22-24a	North Fork Koktuli overlook	Unknown
CMP-043	22-25a	Berry camp tent site	Unknown
CMP-044	22-25a	Squirrel camp (Women's Mt.)	Unknown
CMP-045		Dice Bay camp	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-046		Interviewee's son's Native allotment and camp	Unknown
CMP-047	22-24a	Nikabuna Lakes camp	Unknown
CMP-048	22-24a	Nikabuna camping area	Unknown
CMP-049	22-25a	Jim Stevens' land	Unknown
CMP-050	22-25a	Tent camp for white fish	Unknown
CMP-051	22-25a	Fish camp for spring white fish	Unknown
CMP-052		Long Lake camp	Unknown
CMP-053	22-24a	Nikabuna Lakes camp	Unknown
CMP-054		Dice Bay allotments with cabins and camps	Unknown
CMP-055		Mother in law's allotment	Unknown
CMP-056	22-24a	Cottonwood patch camp	Unknown
CMP-057		Fishing and hunting camp	Unknown
CMP-058	22-25a	Fishing and hunting camp	Unknown
CMP-059	22-25a	Fishing and hunting camp	Unknown
CMP-060	22-25a	Pickerel Lakes camp 1	Unknown
CMP-061	22-25a	Pickerel Lakes camp 2	Unknown
CMP-062		Sheep camp	Unknown
CMP-063	22-24a	Nikabuna Lakes camp	Unknown
CMP-064		Long Lake Camp	Unknown
CMP-065	22-25a	Women's Camp	Unknown
CMP-066		Chulitna River mouth camp	Unknown
CMP-067	22-24a	Long Lake Kijik Corporation lands	Unknown
CMP-068		Bear/Moose camp	Unknown
CMP-069		Sheep Camp 2	Unknown
CMP-070		Tommy Creek	Unknown
CMP-071		Chulitna moose camp/Lookout point	Unknown
CMP-072	22-25a	Behind Flat Island camp	Unknown
CMP-073		Long Lake camp	Unknown
CMP-074	22-24a	Nikabuna spring camp	Unknown
CMP-075		Hunting camp past Chai Point	Unknown
CMP-076	22-25a	Beaver camp between upper and lower Tazimina Lakes	Unknown
CMP-077	22-25a	Tazimina Lakes pass camp	Unknown
CMP-078	22-25a	Fish camp on Sixmile Lake	Unknown
CMP-079	22-25a	Seversons	Old
CMP-080	22-24a	Fish camp	50-plus years
CMP-081		Kijik (Salmon) Lake camp	50-plus years
CMP-082		Shelter Cave	50-plus years
CMP-083	22-24a	Upper Talarik Creek mouth camps	Multigenerational
CMP-084	22-24a	Upper Talarik Creek mouth camps	Multigenerational
CMP-085	22-25a	Tommy Point area	Multigenerational
CMP-086		Kokhanok Fish Camp	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-087		Fish camp	Multigenerational
CMP-088		Gibraltar Lake Camp	Multigenerational
CMP-089		Fennie's Camp	Multigenerational
CMP-090		Kokhanok Fish Camp	Multigenerational
CMP-091		Grandma's Fish Camp	Multigenerational
CMP-092	22-25a	Horseshoe Bend fish camp	Old
CMP-093	22-25a	Bear Creek camp	50-plus years
CMP-094	22-25a	Alexcy Creek camp	Multigenerational
CMP-095	22-25a	Knudsen Bay	Multigenerational
CMP-096		Nonvianuk Lake camp	50-plus years
CMP-097		Fennie's fish camp (2)	50-plus years
CMP-098		Old Kokhanok Fish Camp (a)	Multigenerational
CMP-099		Fennie's fish camp (1)	50-plus years
CMP-100		Interviewee's grandparents' camp	50-plus years
CMP-101		Kokhanok Fish Camp	50-plus years
CMP-102		Fennie's Camp	Multigenerational
CMP-103		Kakhonak fish camp and burials	50-plus years
CMP-104		Gibraltar Lake camps	Multigenerational
CMP-105		Fish camp cabins and tents	Multigenerational
CMP-106		More fish camp sites	Multigenerational
CMP-107		Carbonated water artesian spring	Old
CMP-108		Kakhonak Bay Island camp (1)	Multigenerational
CMP-109		Camp	Multigenerational
CMP-110		Kakhonak Bay Islands camp (2)	Multigenerational
CMP-111		Camp	Multigenerational
CMP-112	22-24a	Frying Pan Lake camps	50-plus years
CMP-113	22-25a	Interviewee's mom's allotment	Unknown
CMP-114		Kijik Lake and River redfish camp	50-plus years
CMP-115		Allotment with buildings	Unknown
CMP-116		Allotment	Unknown
CMP-117		Indian Point	50-plus years
CMP-118	22-25a	Ida's allotment	Unknown
CMP-119	22-25a	Vern Jensen's Allotment	Multigenerational
CMP-120		Fish Camp	Multigenerational
CMP-121		Gabby's cabin	Multigenerational
CMP-122		Fish camp	Multigenerational
CMP-123		Gibraltar Lake Camp	Multigenerational
CMP-124		Fennie's Camp	Multigenerational
CMP-125		Kokhanok fish camp	Multigenerational
CMP-126		Grandma's fish camp	Multigenerational
CMP-127		Lookout Mountain camp	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-128		Kukaklek Lake Camp	50-plus years
CMP-129		Kuklek Lake fish camp	50-plus years
CMP-130		Campsite now a commercial lodge	50-plus years
CMP-131		Red fish camp, Gibraltar Lake	Multigenerational
CMP-132		Gibraltar Lake camp, cabin, allotments	Multigenerational
CMP-133		Camp	Multigenerational
CMP-134		Craft's Lodge	Multigenerational
CMP-135		Shelter cave camp	50-plus years
CMP-136	22-24a	Cottonwood patch [is the name of this historic camp place]	Old
CMP-137		Camp for red fish	Multigenerational
CMP-138		Fishing camp	Multigenerational
CMP-139		Indian Point spring camp	50-plus years
CMP-140	22-25a	Tazimina Lakes camp	50-plus years
CMP-141	22-25a	Fish Village fish camps	50-plus years
CMP-142	22-25a	Fish Camp and burials	Unknown
CMP-143		Interviewee's grandpa's camp	50-plus years
CMP-144		Nonvianuk Lake camp 2	50-plus years
CMP-145		Kijik Lake	50-plus years
CMP-146	22-25a	Chai Point	50-plus years
CMP-147	22-25a	Berry camp	50-plus years
CMP-148	22-25a	Spring camp	50-plus years
CMP-149	22-25a	Grayling camp	50-plus years
CMP-150	22-24a	Allotment with camp	50-plus years
CMP-151	22-25a	Allotment	Unknown
CMP-152	22-24a	Groundhog Mountain camp	50-plus years
CMP-153	22-24a	Overlook camp	50-plus years
CMP-154	22-24a	Koktuli River overlook camp	50-plus years
CMP-155	22-25a	Upper Tazimina Lake camp	Old
CMP-156	22-25a	Squirrel camp on Boy's Mountain	50-plus years
CMP-157	22-25a	Squirrel camp on Women's Mountain	50-plus years
CMP-158	22-24a	Sandy beach camp, Frying Pan Lake	50-plus years
CMP-159	22-25a	Fish camp	50-plus years
CMP-160	22-25a	Fish camp	50-plus years
CMP-161	22-25a	Fish camp	Old
CMP-162	22-25a	Grandparents' Fish Camp on Bear Creek	50-plus years
CMP-163	22-25a	Old Camps at Fish Village	Old
CMP-164		Indian Point spring camp	50-plus years
CMP-165	22-25a	Fish Camp and burials	Unknown
CMP-166	22-25a	Old Iliamna Fish Camp	50-plus years
CMP-167	22-25a	Fish camp	50-plus years
CMP-168	22-25a	Fish camp	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-169	22-25a	Fish camp at the end of the winter trail	50-plus years
CMP-170	22-25a	Fish camp by the falls	50-plus years
CMP-171		Indian Point camp	50-plus years
CMP-172	22-25a	Squirrel camp	50-plus years
CMP-173	22-25a	Chai Point camp	50-plus years
CMP-174	22-25a	Fish Village camps	50-plus years
CMP-175	22-25a	Fish camp on Horseshoe Bend	Multigenerational
CMP-176		Lookout Hill camp	Multigenerational
CMP-177		Chulitna Lookout camp	Multigenerational
CMP-178		Indian Point camp	50-plus years
CMP-179	22-24a	Wooded outlet stream camp, Frying Pan Lake	50-plus years
CMP-180	22-24a	Talarik Plateau Wooded area	50-plus years
CMP-181	22-24a	Camp	50-plus years
CMP-182	22-24a	Sharp Mountain camp	50-plus years
CMP-183		Gibraltar Lake subsistence camps	Multigenerational
CMP-184		Kokhanok Fish Camp	Multigenerational
CMP-185		Kokhanok fish camp	Multigenerational
CMP-186	22-24a	Father in law's allotment	Unknown
CMP-187		Chulitna Mouth camps	50-plus years
CMP-188		Indian Point camp	Old
CMP-189		Indian Point camp	50-plus years
CMP-190		Old camp, Chulitna River	Old
CMP-191	22-25a	Fish camp by One Tree Island and Chai Point	Multigenerational
CMP-192		Gabby's Camp	50-plus years
CMP-193	22-25a	Fish Village by Nondalton	Multigenerational
CMP-195		Interviewee's birthplace and family camp	50-plus years
CMP-196		Camp where interviewee grew up	Unknown
CMP-197		Old fish camp	Unknown
CMP-202		Old fish camp	50-plus years
CMP-203		Old camp near Big Mountain	50-plus years
CMP-204		Old camp near Lower Talarik Creek	50-plus years
CMP-205		Old camp near Gibraltar River	50-plus years
CMP-206		Old camp	50-plus years
CMP-207		Old fish camps	Unknown
CMP-208	22-24a	Fish camp on Newhalen River	Multigenerational
CMP-210	22-25a	Camp at "Tea Party Creek"	Unknown
CMP-211	22-24a	Frying Pan Lake	Unknown
CMP-212		"Indian Point"	Unknown
CMP-213		Camp at "Lookout Bluff"	Unknown
CMP-214		Camp at "Brown's Slough"	Unknown
CMP-215		"Indian Point" camp in Turner Bay	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
CMP-216		Historic camp at mouth of Chulitna River	Multigenerational
CMP-219	50-5	Old family camp	50-plus years
CMP-220	22-25a	Old trapping camp	50-plus years
CMP-221	22-25a	Old trapping camp	50-plus years
CMP-222	22-25a	Old trapping camp	50-plus years
CMP-223	50-5	Old trapping camp	50-plus years
CMP-224	22-25a	Old camp at Pile Bay	50-plus years
CMP-225		Old gold camp up Portage Creek	Unknown
CMP-226		Old mining camp	Unknown
CMP-227		Old fish camp	Unknown
MAT-001		Lava rocks for steam bath	Multigenerational
MAT-002		Lava rocks	Multigenerational
MAT-003		Stone Bay	Old
MAT-004	22-25c	Kakhonak Lake clay beds	Unknown
MAT-005		Clay along riverbanks	Old
OBS-001		High Lake with plant fossils along the shore	Unknown
OBS-002		Belinda Creek	Multigenerational
OBS-003	22-25d	Eagle Bay	Multigenerational
OBS-004	22-25d	First Bridge	Unknown
OBS-005	22-25d	Roadhouse (Giant) Mountain	50-plus years
OBS-006	22-25d	Bigfoot/spooky area at Tazimina Lakes	Multigenerational
OBS-007		Big Foot (awoolik) sighting	Unknown
OBS-008		Little Person	Unknown
OBS-009		Giant Fish	Unknown
OBS-010		Giant Fish	Unknown
OBS-011	22-25d	Bubble sound bay	Unknown
OBS-012		Hairy man sighting	Unknown
OBS-013		UFO sightings in Kaskanak Creek area	Unknown
OBS-014		River voices	Unknown
OBS-015		Big Fish sightings	Unknown
OBS-016		Hairy man sighting	Unknown
OBS-017		Little people sightings in Igiugig vicinity including lakes to the south and west	Multigenerational
OBS-018		UFO sightings in Kaskanak Creek area	Unknown
OBS-019	22-25d	Giant fish sightings	Multigenerational
OBS-020	22-25d	Pile Bay-Seal Islands giant fish area	Multigenerational
OBS-021	22-25d	Haunted area along Kokhanok Lake	Multigenerational
OBS-022		Kokhanok	Unknown
OBS-024		Kijik vicinity haunted place	Unknown
OBS-025	22-25d	Big Fish lives here	Multigenerational
OBS-026	22-25d	Intricate or Devil's Bay	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
OBS-027		Spooky Lake	Unknown
OBS-028		Glittery lights on hill (quartz crystals?)	Unknown
OTR-001		Drop off floaters	Unknown
OTR-002		Bowman's place/mining and trapping area	Old
OTR-003		Mulchatna River float pickup A	Unknown
OTR-004		Mulchatna River float pickup B	Unknown
OTR-005	22-25c	Agates	Unknown
OTR-006	22-25c	Agates on island	Unknown
OTR-007	22-25c	Flat Island Bay underwater cave	Old
OTR-008		Big Mountain antenna array	50-plus years
OTR-009	22-25c	Army Camp	50-plus years
OTR-010	22-25c	Millet Mine	50-plus years
OTR-011	22-24c	Rapids on the Newhalen	Old
OTR-012	22-24c	Site of first Iliamna School	Old
OTR-013	22-25c	Severson's store and trading post	Old
OTR-014		Stone trail markers on tundra	50-plus years
OTR-015		Caribou fence area	50-plus years
OTR-016		Kasna Creek Mining area	50-plus years
OTR-017		Boundary of territory with Igiugig	Multigenerational
OTR-018		Little people sightings in Igiugig vicinity including lakes to the south and west	Multigenerational
OTR-019		Tundra landing strip by camp	Unknown
OTR-020		Place to throw offerings in the water	Multigenerational
OTR-021	22-25c	Quartz crystals on Boys' and Women's Mountain	Unknown
OTR-022		Agate source	Unknown
OTR-024		Quonset hut, scary	Unknown
OTR-025	22-25c	Wien air plane crash site	Unknown
OTR-026		Lookout site	Unknown
OTR-027		Lookout 2	Unknown
OTR-028		Moose Lookout	Unknown
OTR-029		Birthplace at Nielson Bay	50-plus years
OTR-034		Interviewee's father had land here	Unknown
OTR-035	22-25c	Birthplace at Old Iliamna	50-plus years
PLA-001		Port Alsworth (modern)	50-plus years
PLA-002		Priest Rock	Old
PLA-003		Holy Mountain (place name)	Old
PLA-004		Tanalian Mountain (place name)	50-plus years
PLA-005		Sick Vic Lake (place name)	Unknown
PLA-006	22-25c	Stonehouse Bay Cave	Old
PLA-007	22-25c	Devil's Bay	Old
PLA-008	22-25c	Stonehouse Bay Cave	Old

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
PLA-009	22-25c	Chekok	50-plus years
PLA-010	22-25c	Knutson Bay	50-plus years
PLA-011	22-25c	Pedro Bay (modern)	50-plus years
PLA-012	22-25c	Old Iliamna	50-plus years
PLA-013	22-25c	Stonehouse Bay Cave	Old
PLA-014	22-25c	Village of Iliamna	50-plus years
PLA-015		Village of Igiugig	50-plus years
PLA-016	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-017	22-25c	Hedlunds	Unknown
PLA-018	22-25c	Chekok	Unknown
PLA-019		Kokhanok (modern)	50-plus years
PLA-020		Village of Igiugig	50-plus years
PLA-021	22-25c	Village of Iliamna	50-plus years
PLA-022		Village of Kokhanok (modern)	Multigenerational
PLA-023		Village of Igiugig (modern)	Multigenerational
PLA-024		Village of Levelock (modern)	Multigenerational
PLA-025		Village of New Stuyahok (modern)	Multigenerational
PLA-026		Village of Ekwok (modern)	Multigenerational
PLA-027		Igiugig (modern)	Multigenerational
PLA-028		Priest Rock	50-plus years
PLA-029	22-25c	Village of Newhalen (modern)	50-plus years
PLA-030	22-25c	Village of Nondalton (modern)	Unknown
PLA-031	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-032	22-25c	Village of Nondalton (modern)	50-plus years
PLA-033	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-034	22-25c	Hedlunds camp	50-plus years
PLA-035	22-25c	Village of Iliamna (modern)	50-plus years
PLA-036	22-25c	Village of Newhalen (modern)	50-plus years
PLA-037	22-25c	Old Nondalton	50-plus years
PLA-038	22-25c	Village of Nondalton (modern)	50-plus years
PLA-039	22-25c	Devil's Bay	Multigenerational
PLA-040		Chi Point	50-plus years
PLA-041	22-24c	Boys' Mountain	Unknown
PLA-042	22-24c, 22-25c	Women's Mountain	Unknown
PLA-043	22-25c	Village of Nondalton (modern)	50-plus years
PLA-044	22-25c	Village of Pedro Bay (modern)	50-plus years
PLA-045		Priest Rock	50-plus years
PLA-046	22-25c	Village of Nondalton (modern)	Unknown
PLA-047	22-25c	Village of Iliamna (modern)	Unknown
PLA-048	22-25c	Nondalton village (modern)	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
PLA-049	22-25c	Devil's Bay	Old
PLA-050		Igiugig (modern)	50-plus years
PLA-051		Levelock (modern)	Old
PLA-052		Egg Island	Unknown
PLA-053		"Kipnakanq" a bend in the river	Unknown
PLA-054		"Arrow Creek"	Unknown
PLA-055		Lone Mountain	Unknown
PLA-056		Horseshoe Bend	Unknown
PLA-057		"Iguyakhook" Gibraltar River	Unknown
PLA-058		Neyakus Creek	Unknown
PLA-059		Bullshit Ridge	Unknown
PLA-060		Elikakok, creek between New Stuyahok and Nunachuak	Unknown
PLA-061		"Akarpuk," means big moon or big sun, bank between New Stuyahok and Nunachuak	Unknown
PLA-062		"Red Vales," Red Bluff	Unknown
PLA-063		Gilligan's Island	Unknown
PLA-064		Little Mountain	Unknown
PLA-065		"Angiugvak" place where you build little boats	Unknown
PLA-066	22-24c	Anna's Lake	Unknown
PLA-067	22-25c	"Tea Party Creek"	Unknown
PLA-068		"Indian Point"	Unknown
PLA-069		"Chief's Head"	Unknown
PLA-070		"Indian Point"	Unknown
PLA-071		"Lookout Bluff"	Unknown
PLA-072		"Brown's Slough"	Unknown
PLA-073	22-25c	Chi Point "a place to stop and have tea"	Unknown
PLA-074		"Kongabuna," Long Lake	Unknown
PLA-075		"Nikijabuna," Tutna Lake	Unknown
PLA-076		"Vastana," Mulchatna	Unknown
PLA-077	22-25c	"Tazinvitnu," Pickerel Creek	Unknown
PLA-078		"Noinvitnu," Newhalen River	Unknown
PLA-079		"Priest Rock"	Unknown
PLA-080		Bartohls Bay	Unknown
PLA-081		Throne Mountain	Unknown
PLA-082		Three Sisters [Creek]	Unknown
PLA-083		Hatchet Point, Hatchet Creek	Unknown
PLA-084		Brown's Mountain	Unknown
PLA-085		"Broken Shovel" or "Howard's Mountain"	Unknown
PLA-086		"Big River," Tlikakila River	Unknown
PLA-087		"Ingersoll Lake," Lachbuna Lake	Unknown
PLA-088		Bartos Bay	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
RDR-001		Old fish camp and reindeer corral	50-plus years
RDR-002	22-25b	Intricate Bay	50-plus years
RDR-003		Reindeer Island	50-plus years
RDR-004		Kokhanok Bay Reindeer Camp	50-plus years
RDR-005		Kukaklek Reindeer camp	50-plus years
RDR-006	22-24b	Reindeer station at the Gap	50-plus years
RDR-007	22-24b, 22-25b	Reindeer Corral	50-plus years
RDR-008	22-24b	Upper Talarik Creek reindeer station	50-plus years
RDR-009	22-24b	Reindeer Station	50-plus years
RDR-010	22-25b	Eagle Bay Reindeer Station	50-plus years
RDR-011	22-25b	Eagle Bay [respondent's birth place]	50-plus years
RDR-012	22-25b	Eagle Bay reindeer station	50-plus years
RDR-013		Dennis Creek	Unknown
RDR-014		Historic reindeer herding site	Unknown
SAC-001		Peter's Plug	Multigenerational
SAC-002		Lake where bodies from battle were thrown	Unknown
SIT-001		Big Mountain Air Force Station runway	50-plus years
SIT-002		Mining site	50-plus years
SIT-003		Kasna Creek mining area	50-plus years
SIT-004		Mining sites in the Bonanza Hills	Unknown
SIT-005	22-24b	Fish and Game cabin near an old village site	Old
SIT-006	22-24b	Upper Talarik cabins and graves	Multigenerational
SIT-007	22-24b	Portage Landing	50-plus years
SIT-008		Site at Igiugig	50-plus years
SIT-009	22-24b	Newhalen Gorge site	50-plus years
SIT-010	22-25b	Old Portage Village	50-plus years
SIT-011	22-24b, 22-25b	Newhalen Rapids site	50-plus years
SIT-012	22-25b	Newhalen portage landing	Old
SIT-013		Big Mountain Air Force Station	50-plus years
SIT-014		Cape Douglas	50-plus years
SIT-015		Old Russian Orthodox Church, Old Kokhanok	50-plus years
SIT-016		Old village site by Gibraltar Lake	Old
SIT-017		Big Mountain Air Force Station	50-plus years
SIT-018		Old Russian Orthodox Church, Old Kokhanok	50-plus years
SIT-019	22-24b	Where Yukon and Kuskokwim people came out	Old
SIT-020	22-25b	Hedlunds	50-plus years
SIT-021	22-25b	Severson's store	50-plus years
SIT-022		Old church foundation	Old
SIT-023	22-25b	Whitewing Bay	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
SIT-024		Lower Kokhanok Lake	50-plus years
SIT-025		Lower Kokhanok Lake	50-plus years
SIT-026		Diamond J cannery	50-plus years
SIT-027		Nakeen	50-plus years
SIT-028	22-25b	Old church	50-plus years
SIT-029		Site at lake near Kijik	Unknown
SIT-030		Site near mouth of Chulitna River	Unknown
SIT-031	22-25b	House pits at Petrof Falls	Unknown
SIT-032	22-25b	House pit site on the Tazimina	Unknown
SIT-033		"Indian Point"	Unknown
SIT-034	22-25b	Knutson Bay	Unknown
SIT-035	22-25b	near Pedro Mountain	Unknown
SIT-036		Brown's Landing	Unknown
SIT-037		Cave by Kijik	Unknown
SIT-038		Bowman's Mine	50-plus years
SIT-039		Dena'ina archaeological dig	Unknown
SIT-040		Brown Carlson's cabin	Unknown
TDP-001	22-25b	Copper River Lodge	Multigenerational
TDP-002	22-25b	Old Russian trading post	50-plus years
TDP-003	22-25b	Severson's Trading Post	50-plus years
TDP-004	22-25b	Severson's Roadhouse	50-plus years
TPL-001	22-24a	Beaver trapline on Swan River	50-plus years
TPL-002		Interviewee's grandpa's trapline	50-plus years
TPL-003		Interviewee’s grandparents' trap line	50-plus years
TPL-004	22-25a	Kokhanok Lake-Copper River route	Multigenerational
TPL-005		McNeil Cove trap line	Multigenerational
TPL-006		Big Mountain area	Multigenerational
TPL-007		Kokhanok to Seven Sisters loop via Fennie's Camp	Multigenerational
TPL-008		John Olympic's trapline, Amakdedori	Multigenerational
TPL-009		Kokhanok to Gibraltar Lake trail	50-plus years
TPL-010		Kakhonak Lake traplines	Multigenerational
TPL-011	22-25a	Trapline	Old
TPL-012	22-25a	Traplines around Kokhanok Lake"	Multigenerational
TPL-013		Traplines by Fennie's Camp	Multigenerational
TPL-014		Trap line south of Gibraltar Lake	Multigenerational
TPL-015		Trap line from Dennis Creek to Belinda Creek	50-plus years
TPL-016	22-25a	Kokhanok to Kokhanok Bay via Kokhanok Lake and Copper River	Multigenerational
TRL-001	22-25a	Route from Nondalton to Seversons in Iliamna	Old
TRL-002	22-24a	Koktuli Trail	50-plus years
TRL-003		Telaquana Trail to Turquoise Lake	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRL-004		Telaquana Trail to Twin Lakes	50-plus years
TRL-005	22-25a	Portage Trail	50-plus years
TRL-006		Telaquana Trail	50-plus years
TRL-007	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-008	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-009	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-010	22-24a, 22-25a	Kokhanok to Iliamna route	Multigenerational
TRL-011	22-25a	Kokhanok to Iliamna route	Multigenerational
TRL-012		Route to Nonvianuk and Kukaklek Lakes from Kokhanok	50-plus years
TRL-013	22-24a	Kaskanak Creek to Mulchatna River route	Multigenerational
TRL-014		Mulchatna River to Keefer Creek and Dutna Lake route	Multigenerational
TRL-015	22-24a	Chulitna River corridor	Multigenerational
TRL-016	22-24a, 22-25a	Chulitna River corridor	Multigenerational
TRL-017	22-25a	Iliamna/Newhalen to Kokhanok winter route	Multigenerational
TRL-018	22-24a, 22-25a	Spring commercial fishing route to Bristol Bay	50-plus years
TRL-019	22-24a	Lower Talarik Creek to South Fork Koktuli route	Multigenerational
TRL-020	22-24a	Route along ridge of high ground between Upper and Lower Talarik creeks	Multigenerational
TRL-021	22-24a, 22-25a	Trail to Upper and Lower Talarik Creeks via Pete Andrews Creek	Multigenerational
TRL-022	22-25a	Winter trail to Lake Clark	50-plus years
TRL-023	22-25a	Pedro Bay trail	Multigenerational
TRL-024	22-25a, 50-5	Iliamna Portage route	50-plus years
TRL-025	22-24a, 22-25a	Newhalen riverside trail	50-plus years
TRL-026	22-25a	Back way to Lake Clark	50-plus years
TRL-027		Kokhanok Fish Camp trail	Multigenerational
TRL-028		High country around Mirror and Spectacle lakes and Funnel and Moraine creeks.	Multigenerational
TRL-029		Fish camp to Gibraltar Lake	Multigenerational
TRL-030	22-25a	Nondalton to Indian Point trail	50-plus years
TRL-031	22-24a	Lower Talarik ridge route	Multigenerational
TRL-032	22-24a, 22-25a	Kokhanok to Newhalen route	Multigenerational
TRL-033		Kokhanok to Gibraltar Lake trail	50-plus years
TRL-034		Kokhanok-Newhalen summer route	Multigenerational
TRL-035	22-25a	Kokhanok-Newhalen winter route	Multigenerational
TRL-036	22-25a	Kokhanok to Pile Bay route	Multigenerational
TRL-037		Kokhanok to Amakdedori route	Multigenerational

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRL-038	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-039	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-040	22-24a	Talarik to Koktuli route(s)	Multigenerational
TRL-041	22-24a, 22-25a	Kokhanok to Iliamna	Multigenerational
TRL-042	22-25a	Kokhanok to Iliamna	Multigenerational
TRL-043		High country around Mirror and Spectacle lakes and Funnel and Moraine creeks.	Multigenerational
TRL-044		Fish camp to Gibraltar Lake	Multigenerational
TRL-045		Foot and four-wheeler path to Gibraltar Lake	Multigenerational
TRL-046		Gibraltar Creek trail	Multigenerational
TRL-047		Kokhanok to Amakdedori via Gibraltar Lake	Multigenerational
TRL-048		Amakdedori to Bruin Bay route	Multigenerational
TRL-049	22-24a, 22-25a	Kokhanok Loop via Kaskanak and Koktuli-Talarik	Multigenerational
TRL-050		Tundra route above Kukaklek	50-plus years
TRL-051		Kukaklek to McNeil Bay pass	50-plus years
TRL-052		Route from Kokhanok to Amakdedori	Multigenerational
TRL-053		Trail to Gibraltar Lake and high country	Multigenerational
TRL-054		Trail to Fennie's cabin	Multigenerational
TRL-055		Gibraltar Lake to Amakdedori trail	Multigenerational
TRL-056		Overland route to Reindeer Bay	50-plus years
TRL-057		Route from Igiugig to Levelock	Multigenerational
TRL-058		Route between Levelock and New Stuyahok	Multigenerational
TRL-059		Route from New Stuyakok to Ekwok	Multigenerational
TRL-060		Lakeshore route from Igiugig to Reindeer Bay camp	Multigenerational
TRL-061	22-25a	Kokhanok to Seal Islands route	Multigenerational
TRL-062	22-24a, 22-25a	Seal Islands to North Shore route	Multigenerational
TRL-063	22-24a	Upper Talarik Creek hunting, fishing, travel route	Multigenerational
TRL-064	22-24a	Lower Talarik Creek route	Multigenerational
TRL-065	22-25a	Kokhanok to Newhalen route	Multigenerational
TRL-066	22-24a	Upper Talarik to South Fork Koktuli River	50-plus years
TRL-067	22-24a	Around Kaskanak	50-plus years
TRL-068	22-24a	Upper Talarik Creek	50-plus years
TRL-069	22-25a	Eagle Bay to Severson's	50-plus years
TRL-070	22-25a	Reindeer herding route	50-plus years
TRL-071		Mulchatna River trail	50-plus years
TRL-072		Kijik to Miller's Creek via beach	50-plus years
TRL-073		Lake Clark to Tyonek trail	50-plus years
TRL-074		Mulchatna River to Lime Village via Whitefish Lake	50-plus years
TRL-075		Tyonek via Tlikakila River	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRL-076		Tyonek trail via Chokotonk River	50-plus years
TRL-077	22-24a, 22-25a	Route from Lime Village to Nondalton via Dutna Lake	50-plus years
TRL-078		Chulitna Bay to Whitefish Lake trail	50-plus years
TRL-079		Telaquana Trail	50-plus years
TRL-080	22-24a, 22-25a	Nondalton to Lime Village via Dutna Lake	50-plus years
TRL-081	22-25a	Newhalen Portage	50-plus years
TRL-082	22-25a	Winter route-Severson's to Nondalton	50-plus years
TRL-083		Whitefish Lake to Telaquana Lake route	50-plus years
TRL-084		Telaquana to Lake Clark trail	50-plus years
TRL-085		Telaquana trail to Twin Lakes	50-plus years
TRL-086		Telaquana trail to Turquoise Lake	50-plus years
TRL-087		Tyonek Trail	50-plus years
TRL-088	22-25a	Portage road	50-plus years
TRL-089	22-25a	Tazimina Lakes route	50-plus years
TRL-090	22-25a	Tanalian Point to Nondalton trail	50-plus years
TRL-091	22-24a, 22-25a	Women's Mountain to Talarik Plateau Lakes	50-plus years
TRL-092	22-25a	Nondalton to Kijik via beach	50-plus years
TRL-093	22-25a	Hedlunds to Pickerel Lakes via Roadhouse Mountain	50-plus years
TRL-094	22-24a	Route from Nikabuna Lakes to Lime Village via Dutna Lake	50-plus years
TRL-095	22-24a, 22-25a	Portage road	50-plus years
TRL-096	22-24a, 22-25a	Nondalton to Nikabuna Lakes route	50-plus years
TRL-097	22-25a	Lower Tazimina Lake trail from Pickerel Lakes	50-plus years
TRL-098	22-25a	Lower Tazimina to Upper Tazimina Lake camp	50-plus years
TRL-099	22-25a	Tazimina River trail	50-plus years
TRL-100	22-25a	Tanalian to Hedlunds route	50-plus years
TRL-101	22-25a	Kontrashibuna Lake via Takoka Creek	50-plus years
TRL-102	22-24a, 22-25a	Nondalton to Nikabuna Lakes	50-plus years
TRL-103	22-24a	Fish camp to Upper Talarik-Frying Pan Lake-Koktuli	50-plus years
TRL-104	22-24a, 22-25a	Upper Talarik route	50-plus years
TRL-105		Chokotonk route to Tyonek	50-plus years
TRL-106	22-24a	Talarik to Koktuli to Nikabuna loop	50-plus years
TRL-107	22-24a, 22-25a	Overland from Talarik to Newhalen	50-plus years
TRL-108	22-24a, 22-25a	Offshore route from Talarik to Newhalen	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRL-109	22-25a	Winter Trail	50-plus years
TRL-110	22-25a	Around Roadhouse Mountain route	50-plus years
TRL-111	22-25a	Hedlunds to Pedro Bay along beach	50-plus years
TRL-112		Tyonek trail via Tlikakila River	50-plus years
TRL-113	22-25a	Nondalton to Lime Village via Dutna Lake	50-plus years
TRL-114	22-24a, 22-25a	Koktuli River route	50-plus years
TRL-115	22-24a	Koktuli River-Lower Talarik Creek	Unknown
TRL-116	22-25a	Horse trail around Roadhouse Mountain	50-plus years
TRL-117	22-25a	Old Iliamna to Severson's, beach route	50-plus years
TRL-118	22-25a	Old Iliamna to Severson's, water route	50-plus years
TRL-119	22-25a	Portage route to Iliamna	50-plus years
TRL-120	22-25a	Winter trail	50-plus years
TRL-121	22-24a, 22-25a	Squirrel trap areas trail	50-plus years
TRL-122	22-24a, 22-25a	Nondalton to Nikabuna trail	50-plus years
TRL-123	22-25a	Nondalton to Tanalian Point, land route	50-plus years
TRL-124	22-25a	Tazimina Lakes trail	50-plus years
TRL-125	22-25a	Nondalton to Hedlunds winter route	50-plus years
TRL-126	22-25a, 50-5	Williamsport to Pile Bay portage	50-plus years
TRL-127	22-25a, 50-5	Williamsport to Pile Bay road	50-plus years
TRL-128	22-25a	Arrowheads and Pits along trail	Old
TRL-129	22-25a	Portage trail to Iliamna	50-plus years
TRL-130	22-25a	Jack Dawson Creek hunting route	Unknown
TRL-131		Kijik to Telaquana trail, east side of Miller's Creek	50-plus years
TRL-132		Kijik to Telaquana trail, west side of Miller's Creek	50-plus years
TRL-133	22-24a, 22-25a	Route from Nondalton to Koktuli via Groundhog Mountain and Upper Talarik Creek	50-plus years
TRL-134		Old Trail to Amakdedori	50-plus years
TRL-135	22-25a	Old Dogsled Trail	50-plus years
TRL-136	22-24a, 22-25a	Fish Village around Boy's Mountain route	Multigenerational
TRL-137	22-24a	Talarik-Koktuli Divide route	Multigenerational
TRL-138		Igiugig to Bristol Bay route	Multigenerational
TRL-139	22-24a	Winter Lower Talarik Creek route	Multigenerational
TRL-140		Along river from Levelock to New Stuyahok	Unknown
TRL-141		Old dog team trail	Unknown
TRL-142	22-24a, 22-25a	Old dog team trail	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRL-143	22-24a, 22-25a	Old dog team trail	Unknown
TRL-144	22-25a	Kijik to Old Iliamna	50-plus years
TRL-145	22-25a	Foot and dog team trail from Chekok Bay to Pickerel Lakes	Multigenerational
TRL-146	22-24a, 22-25a	From Nondalton to the mouth of the Chulitna River	Multigenerational
TRL-147		Trail to old gold camp up Portage Creek	Unknown
TRL-148		Trail by Keyes Point	Unknown
TRL-149		Telaquana Trail	Unknown
TRV-001	22-25a	Airplane route Port Alsworth to Pedro Bay via pass	Unknown
TRV-002	22-25a	Airplane Port Alsworth to Nondalton and Iliamna	Unknown
TRV-003	22-24a	Airplane Nushagak route	Unknown
TRV-004		Tlikakila River	Unknown
TRV-006		Chokotonk River route	Unknown
TRV-007	22-24a, 22-25a	Spring duck-hunting route	Multigenerational
TRV-008	22-24a, 22-25a	Beach route to Pete Andrews Creek and Upper Talarik Creek	Multigenerational
TRV-009		Lookout Mountain loop	Unknown
TRV-010		Chulitna River	Unknown
TRV-011	22-25a	Winter route up the Chulitna River	Unknown
TRV-012	22-25a	Nondalton to Portage Creek via Kijik	Unknown
TRV-013		Hunting route to hills	Unknown
TRV-014	22-25a	Creek route to black bear-hunting area.	Unknown
TRV-015	22-25a	Hunting trail	Multigenerational
TRV-016	22-24a	Upper Talarik Creek route	Multigenerational
TRV-017		Kokhanok Hills route	Multigenerational
TRV-018	22-24a, 22-25a	Hemmer's Cache to Mulchatna River via Dutna and Long lakes	Unknown
TRV-019	22-24a, 22-25a	High Country loop	Unknown
TRV-020	22-25a	Pickerel Lakes trail	Unknown
TRV-021	22-25a	Pickerel Lakes to Lower Tazimina	Unknown
TRV-022	22-25a	Lower Tazimina outlet lakes	Unknown
TRV-023	22-24a, 22-25a	Foot trail to bird camp and a place where caribou are sometimes hiding	Unknown
TRV-024	22-25a	Portage trail	Unknown
TRV-025	22-25a	Iliamna to Pedro Bay by barge	Unknown
TRV-026	22-25a	High country bear-hunting trail	Unknown
TRV-027	22-25a	Sheep hunt route 1	Unknown
TRV-028	22-25a	Stream with cabins	Unknown
TRV-029	22-25a	Lake Clark to Chulitna Bay water route	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRV-030	22-25a	Trail to Skiffdulbena (sp) Lake	Unknown
TRV-031	22-25a	High line or race track loop trail	Unknown
TRV-032	22-25a	Nondalton to Kijik trail	50-plus years
TRV-033	22-24a, 22-25a	Nondalton to Groundhog Mountain via Boys' and Women's mountain trail	Unknown
TRV-034	22-24a, 22-25a	Fish Village to Groundhog Mountain route	Unknown
TRV-035		Lookout Mountain loop	Multigenerational
TRV-036	22-25a	Ridge Trails	Unknown
TRV-037		Overland route to Igiugig	Multigenerational
TRV-038		Kokhanok to Naknek route for commercial fishing	Multigenerational
TRV-040	22-25a	Portage Route Severson's Store to Nondalton.	Unknown
TRV-041	22-25a	Hedlunds to Nondalton via Roadhouse Mountain	Unknown
TRV-042	22-25a	Fish camp to Fish Village via Pickerel Lakes	Unknown
TRV-043		Mulchatna River trapping route	Unknown
TRV-044	22-25a	Chi Point to Nondalton	Unknown
TRV-046	22-24a	Chulitna River to Nikabuna Lakes route	Unknown
TRV-047		Sheep trail 3	Unknown
TRV-048		Sheep trail 2	Unknown
TRV-049		Sheep trail	Unknown
TRV-050	22-25a	Tanalian to Hedlunds via Tazimina Lakes	Unknown
TRV-051	22-25a	Tanalian-Hedlunds trail to Fish Camp	Unknown
TRV-052	22-24a	Long Lake to Nikabuna Lakes	Unknown
TRV-053	22-25a	Tanalian-Hedlunds trail to Upper Tazimina Lake	Unknown
TRV-055	22-24a, 22-25a	Horseshoe Bend to Nikabuna Lakes via Upper Talarik/North Fork Koktuli	Unknown
TRV-056	22-24a, 22-25a	Nondalton to Long Lake	Unknown
TRV-057	22-24a	Upper Talarik Plateau to Newhalen	Unknown
TRV-058	22-24a, 22-25a	West side of Newhalen River trail	Unknown
TRV-059	22-25a	Fish Village to Lower Tazimina Lake route	Unknown
TRV-061	22-25a	Chulitna River to Hemmer's Cache	Unknown
TRV-062		Kijik to Chulitna River via beach	Unknown
TRV-063		Foot path from Kijik Lake to Koksetna headwaters to Chulitna River	Unknown
TRV-064	22-24a, 22-25a	Telaquana to Bonanza Hills	Unknown
TRV-065		Koksetna River to Ptarmigan Creek	Unknown
TRV-066		Bonanza Hills to Turquoise Lake	Unknown
TRV-067		Keefer Creek to Chilichitna Creek	Unknown
TRV-068	22-24a	Upper to Lower Talarik Creek Inland route	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRV-069	22-24a, 22-25a	Route from Newhalen to the Talarik creeks	Unknown
TRV-070	22-24a, 22-25a	Skiffibuna Lake to Long Lake to Nikabuna trail	Unknown
TRV-071		Nondalton to Dutna Lake to Mulchatna trail	Unknown
TRV-072	22-25a	Pedro Bay to Hedlunds via Knudsen Bay beach or ice	Unknown
TRV-073		Around Kontrashibuna Lake route	Unknown
TRV-074	22-25a	High route Tanalian to Fish Village	Unknown
TRV-075	22-25a	Beach route Tanalian to Fish Village	Unknown
TRV-076		Chulitna Bay Portage	Unknown
TRV-077	22-24a	Groundhog Mountain to Nikabuna Lakes via Albert Creek	Unknown
TRV-078	22-24a	Groundhog Mountain to Upper Talarik/Koktuli North Fork Divide	Unknown
TRV-079	22-24a	Women's Mountain to Long Lake via unnamed creek	Unknown
TRV-080	22-24a	South face traverse of Groundhog Mountain	Unknown
TRV-081	22-24a	Route from Koktuli to Mulchatna via Swan River	Unknown
TRV-082	22-24a	Koktuli to Kaskanak area trail	Unknown
TRV-083	22-24a	Talarik Creeks portage	Unknown
TRV-084	22-24a	High flats portage	Unknown
TRV-085	22-24a	Chulitna River to Long and Nikabuna lakes	Unknown
TRV-086	22-25a	Hillside trail to Long Lake	Unknown
TRV-087	22-25a	Lake Clark to Chulitna Bay route	Unknown
TRV-088	22-24a, 22-25a	Chulitna River route to Long and Nikabuna lakes	Unknown
TRV-089	22-24a, 22-25a	Upper Talarik and Koktuli River route	Unknown
TRV-090	22-24a	Upper Talarik Creek	Unknown
TRV-091	22-24a, 22-25a	Nondalton to Long Lake high trail	Unknown
TRV-092	22-24a	Lower Talarik Creek	Unknown
TRV-093	22-24a, 22-25a	Talarik uplands trail	Unknown
TRV-094	22-24a, 22-25a	Upper Talarik to Frying Pan Lake route	Unknown
TRV-095		Sheep-hunting route above Current Creek	Unknown
TRV-097		Twin Lakes trail	Unknown
TRV-098	22-24a	Chulitna River to Long and Nikabuna Lakes	Unknown
TRV-099	22-24a, 22-25a	Nondalton to Albert Creek over Groundhog Mountain	Unknown
TRV-100	22-24a	Nikabuna Lakes to Iliamna Lake via Upper Talarik Creek	Unknown
TRV-101	22-24a, 22-25a	Nondalton to mid-Upper Talarik Creek	Unknown
TRV-102	22-24a	Chulitna River water route to Long Lake camp	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRV-103	22-25a	Kijik from Nondalton, water route	Unknown
TRV-104	22-25a	Allotments along route to Kijik	Unknown
TRV-105	22-24a	Chulitna River	Unknown
TRV-106	22-25a	High trail, Nondalton to Indian Point	Unknown
TRV-107	22-24a, 22-25a	Nondalton to Boy's and Women's mountains	Unknown
TRV-108	22-25a	Middle route, Nondalton to Hemmer's Cache	Unknown
TRV-109	22-25a	Shoreline route	Unknown
TRV-110	22-25a	Fish Camp to Melvin Trefon's camp, Lower Tazimina Lake	Unknown
TRV-111	22-25a	Chekok Creek route to Nondalton	Unknown
TRV-112	22-25a	Chekok to Pickerel Lakes via the north side of Roadhouse Mountain	Unknown
TRV-113	22-25a	Portage road	Unknown
TRV-114	22-25a	Pedro Bay to Iliamna/Newhalen	Unknown
TRV-115	22-25a	Pedro Bay to Naknek via Kvichak	Unknown
TRV-116	22-25a	Pedro Mountain circumnavigation	Unknown
TRV-117	22-25a	Pile River to Pedro Bay	Unknown
TRV-118	22-25a	Iliamna River tributary trail	Unknown
TRV-119	22-25a	Pedro Bay to Chekok	Unknown
TRV-120	22-24a, 22-25a	Newhalen to Lower Talarik	Unknown
TRV-121		Chulitna River route	Unknown
TRV-122	22-24a, 22-25a	Nondalton to Cottonwood Patch via Groundhog Mountain	Unknown
TRV-123		September Creek to Halfway Mountain	Unknown
TRV-124	22-24a, 22-25a	Horseshoe Bend to the High country	Unknown
TRV-125	22-24a, 22-25a	Nondalton to Nikabuna via Groundhog Mountain	Unknown
TRV-126	22-24a	Circle around Groundhog Mountain	Unknown
TRV-127		Long Lake to Dutna Lake via upper Swan River flats	Unknown
TRV-128	22-24a	Nondalton to Lake September via Dutna Lake	Unknown
TRV-129	22-25a	Nondalton to Chulitna River overland trail	Unknown
TRV-130		Lake Clark to Chulitna Bay boat route	Unknown
TRV-131		Sheep and Moose Route 2	Unknown
TRV-132	22-24a	Chulitna River to Nikabuna Lakes via Long Lake	Unknown
TRV-133	22-25a	Nondalton to Little Lake Clark	Unknown
TRV-134		Tlikakila River route	Unknown
TRV-135		Hunting trail above Tlikakila River route	Unknown
TRV-136		Miller Creek mouth to Fishtrap Lake	Unknown
TRV-137		Miller Creek to Miller Lake	Unknown
TRV-138		Back way to Kijik Lake	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
TRV-139	22-25a	Nondalton to Kijik Lake on shore	Unknown
TRV-140	22-25a	Trail to bear-hunting area	Unknown
VIL-001		Village site near Gibraltar Lake	Old
VIL-002		Old village on Twin Lakes	50-plus years
VIL-003		Kijik	50-plus years
VIL-004		Tanalian Point cabins	50-plus years
VIL-005		Kaskanak Village	50-plus years
VIL-006	22-25b	Squirrel Point Village	50-plus years
VIL-007		Old Kvichak Village	50-plus years
VIL-008	22-25b	Bear Creek mouth village	50-plus years
VIL-009	22-25b	Pile Bay Village	50-plus years
VIL-010		Graveyard Point/Koggiung, Old village sites	50-plus years
VIL-011		Miller's Creek	50-plus years
VIL-012		Kaskanak Village	50-plus years
VIL-013	22-24b	Lower Talarik village and camp	50-plus years
VIL-014		Old Newhalen Village	50-plus years
VIL-015	22-25b	Fish Village	50-plus years
VIL-016		Kijik	50-plus years
VIL-017		Kijik Lake fish camp	50-plus years
VIL-018		Old Kijik Village site	50-plus years
VIL-019	22-25b	Old Newhalen	50-plus years
VIL-020	22-25b	Old Newhalen	50-plus years
VIL-021		Gibraltar Lake area village	50-plus years
VIL-022		Old Kokhanok Church	50-plus years
VIL-023		Old Tanalian Village	50-plus years
VIL-024		Old Mulchatna Villages-Mosquito Creek	50-plus years
VIL-025	22-25b	Fish Village	50-plus years
VIL-026		Old Kijik Village	50-plus years
VIL-027		Tanalian Point village	50-plus years
VIL-028		Tanalian Point	50-plus years
VIL-029	22-25b	Squirrel Point village site	50-plus years
VIL-030	22-25b	Village of Old Iliamna	50-plus years
VIL-031		Kijik site with three recent cabins	50-plus years
VIL-032		Igiugig area villages	50-plus years
VIL-033		Big Mountain Creek village	Old
VIL-034		Old Kokhanok	Multigenerational
VIL-035		Old Kokhanok	50-plus years
VIL-036		Old village at Reindeer Bay	Old
VIL-037		Old villages across from Igiugig	Old
VIL-038		Old villages across from Igiugig	Old
VIL-039		Kijik	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
VIL-040		Kijik site	50-plus years
VIL-041		Telaquana	50-plus years
VIL-042		Whitefish Lake Village	50-plus years
VIL-043		Telaquana Village	50-plus years
VIL-044	22-25b	Old Nondalton	50-plus years
VIL-045	22-25b	Old Iliamna	50-plus years
VIL-046	22-25b	Squirrel Point Village	Old
VIL-047		Twin Lakes village	50-plus years
VIL-048		Turquoise Lake village	50-plus years
VIL-049		Kijik	50-plus years
VIL-050		Old Whitefish Lake Village Site	50-plus years
VIL-051	22-25b	Hedlunds	50-plus years
VIL-052	22-25b	Old Nondalton	50-plus years
VIL-053		Kijik	50-plus years
VIL-054	22-25b	Old Iliamna	50-plus years
VIL-055		Kijik	50-plus years
VIL-056		Tanalian Point	50-plus years
VIL-057		Kijik site	50-plus years
VIL-058		Respondent's allotment and Kijik Lake village site	50-plus years
VIL-059	22-25b	Old Nondalton	50-plus years
VIL-060		Old Telaquana Village site	50-plus years
VIL-061	22-25b	Old Nondalton church and graveyard	50-plus years
VIL-062		Old Fish Camp Village	50-plus years
VIL-063		Church and cemetery	50-plus years
VIL-064		Old Kokhanok	Old
VIL-065		Old Settlement and fish camp	Old
VIL-066		Old Kijik Village Site	50-plus years
VIL-067	22-25b	Fish Village	50-plus years
VIL-068		Old Telaquana Village	50-plus years
VIL-069		Old Mulchatna Villages-Keefer Creek	50-plus years
VIL-070		Kijik area	50-plus years
VIL-071		Behind Kijik	50-plus years
VIL-072		Kijik Lake village	50-plus years
VIL-073	22-25b	Fish Village	50-plus years
VIL-074	22-25b	Old Nondalton	50-plus years
VIL-075	22-25b	Village site at mouth of Pile River [different site than the one marked on base map]	50-plus years
VIL-076		Interviewee's dad's village	50-plus years
VIL-077	22-25b	Old Iliamna	Old
VIL-078		Old Alagnak Village	Unknown
VIL-079		Old Alagnak Village	Unknown

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
VIL-080		Old village site at Peck's Creek	Unknown
VIL-081		Old village site north side of Kaskanak	Unknown
VIL-082		Old village site	Unknown
VIL-083		Old village site	Unknown
VIL-084		Old village site	Unknown
VIL-085		Old village site	Unknown
VIL-086		Old village site	Unknown
VIL-087		Old village	50-plus years
VIL-088		Second Old Koliganek	50-plus years
VIL-089		First Old Koliganek	50-plus years
VIL-090		Second Old Koliganek	50-plus years
VIL-091		Old village site	50-plus years
VIL-092		Old Branch River village site	Unknown
VIL-093		Old Branch River village site	Unknown
VIL-094		Old Alagnak village	Multigenerational
VIL-095		Old Alagnak village	Unknown
VIL-096		First village site below fork of Alagnak River	Unknown
VIL-097		Old village	Unknown
VIL-098		Old village	Unknown
VIL-099		Old village	Unknown
VIL-100		Old village	Unknown
VIL-101	22-25b	Old Nondalton	Unknown
VIL-102		Old village	Unknown
VIL-103	22-25b	Old village	Unknown
VIL-104		Old Alagnak village	Unknown
VIL-105		Near Gibraltar River	Unknown
VIL-106		Old Kokhanok	Unknown
VIL-107	22-25b	Old Newhalen	50-plus years
VIL-108		Old Newhalen	50-plus years
VIL-110		Nunachuak	Unknown
VIL-111		Old Stuyahok	50-plus years
VIL-112		Old Stuyahok	50-plus years
VIL-113		Old village at mouth of Swan River	50-plus years
VIL-114		Old village	Unknown
VIL-115		Old village	Unknown
VIL-116		Old village	Unknown
VIL-117		Old village	Unknown
VIL-118		Old village at Tikchik Lake	Unknown
VIL-119		Old Koliganek	50-plus years
VIL-120		Old Koliganek	50-plus years
VIL-121		Old Koliganek	50-plus years

Feature Number	Figure That Shows Feature	Feature Name/ Description	Time Period
VIL-122		Old Koliganek	50-plus years
VIL-128	22-25b	Old Nondalton	50-plus years
VIL-129		Kijik	50-plus years
VIL-130		Kijik	50-plus years
VIL-131	22-25b	Old Village	Unknown
VIL-132		Kijik	50-plus years
VIL-133	22-25b	Old Village	50-plus years
VIL-134		Old village, below Telaquana Lake	Unknown
VIL-135		Old Nondalton	50-plus years
VIL-136	22-25b	Old village	Unknown
VIL-137		Old Kijik	50-plus years
VIL-138		Old Kijik	50-plus years
VIL-139		Old Kijik	50-plus years
VIL-140	22-25b	Old village site	Unknown
VIL-141		Kijik	50-plus years
VIL-143		Old Stuyahok	50-plus years
VIL-144		Nunachuak	Unknown
VIL-145	22-25b	Old Iliamna	50-plus years
VIL-146	22-25b	Old Iliamna	Unknown
VIL-147	22-25b	Squirrel Village	Unknown
VIL-148	22-25b	Fish Village	Unknown
VIL-149	22-25b	Old village near Lonesome Bay	Unknown
VIL-150	22-25b	Old village near Lonesome Bay	Unknown
VIL-151	22-25b	Old Iliamna	50-plus years
VIL-152	22-25b	Old Iliamna	50-plus years
VIL-155	22-25b	Old Village	Unknown
VIL-156		Kijik	50-plus years
VIL-157		Old Kijik	50-plus years
VIL-158		Kijik	50-plus years
VIL-159		Old village	Unknown
VIL-160		Old village	Unknown
VIL-161		Old village at mouth of Swan River	Unknown

BTL = Battle Site
BUR = Burial
CAB = Cabin
CCH = Cache
CMP = Camp
MAT = Material Source
OBS = Observation/sighting (extraordinary)
OTR = Other
PLA = Place name
RDR = Reindeer Station
SIT = Site
TDP = Trading Post
TPL = Trapline
TRL = Trail/Route
TRV = Travel Route
VIL = Village