

MINERAL INVESTIGATIONS IN THE CHUGACH NATIONAL FOREST,
ALASKA (PENINSULA STUDY AREA)

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***** In-House Report

UNITED STATES DEPARTMENT OF THE INTERIOR

Donald P. Hodel, Secretary

BUREAU OF MINES

Robert C. Horton, Director

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

av	average
d	day
ft	feet
h	hour
hp	horsepower
in.	inch(es)
lb(s)	pound(s)
mi	mile(s)
oz	ounce(s)
pct	percent
ppm	parts per million
yd	yard
yd ³	cubic yards
yd ³ /d	cubic yards per day
yr	year

MINERAL ABBREVIATIONS USED IN THIS REPORT

apy	arsenopyrite
az	azurite
cpy	chalcopyrite
gal	galena
mal	malachite
moly	molybdenite
py	pyrite
pyrr	pyrrhotite
sphal	sphalerite
stib	stibnite
tetr	tetrahedrite

MINERAL INVESTIGATIONS IN THE CHUGACH NATIONAL FOREST, ALASKA
(Peninsula Study Area)

by Robert B. Hoekzema 1/ and Gary E. Sherman 2/

ABSTRACT

The Bureau of Mines and U.S. Geological Survey conducted a four year (1979 to 1982) mineral assessment study of the Chugach National Forest, Alaska. To facilitate the study, the Bureau divided the forest into three areas. This is a report on Bureau work in the western part of the forest, the PENINSULA study area, where 239 lode deposits and placer gold occurrences in 66 drainages were investigated.

Placer and lode mine production is estimated to total 204,000 ounces of gold and 34,200 ounces of silver. Recently (1979-1982) production has ranged from 900 to 2,650 ounces of gold/year from 20 to 25 small placer operations. Other metallic resources include antimony, chromium, copper, and molybdenum but these have not been found in commercial quantities. Sand, gravel, rock and building stone are widely available and are produced along transportation corridors.

The area has a high potential for the development of small lode gold mines, and small to medium-sized gold placer operations. In the near future most production will be from mechanized gold placer mines on Resurrection, Bear, Sixmile, Mills, Quartz, and Crescent Creeks and from recreational placer mining on Resurrection Creek, Sixmile Creek, East Fork and its tributaries, and Crow Creek.

INTRODUCTION

A mineral resource investigation of the Chugach National Forest (CNF) was conducted by an interagency team made up of members of the U.S. Geological Survey (USGS) and the Bureau of Mines (Bureau). This investigation, initiated under the RARE II program, started in 1979 and was completed in 1983. The USGS compiled and evaluated data on the regional geology, geochemistry, and geophysics. The Bureau compiled and evaluated data on mines, prospects, mineral occurrences, and areas of mineralization, which are summarized in MLA 5-84 (80)3/. A joint USGS/Bureau summary report, published by the USGS as MF-1645A (126), describes the geology, geophysics, geochemistry, and the overall mineral resource potential of the study area. To facilitate the appraisal of this large area, the Bureau divided the CNF into three study areas: PENINSULA, ISLANDS, and SOUND. This report presents the results of the Bureau's sampling, and prospect examinations, and evaluates the mineral development potential of all mineral deposits identified in the PENINSULA study area (PSA). This and similar reports for the ISLANDS and SOUND study areas contain the detailed often previously unpublished information used to evaluate the mineral development potential of the CNF.

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3/Underlined numbers in parentheses refer to items listed in references at the end of this report.

SIZE, LOCATION, AND ACCESS

The PSA includes approximately 2,000,000 acres of land located in southcentral Alaska (fig. 1). Approximately 1,562,350 acres were designated for "Further Study" by the 1979 RARE II Final Environmental Impact Statement prepared by the U.S. Forest Service and 375,558 acres were added to the PSA with the passage of the Alaska National Interest Lands Conservation Act (ANILCA) in 1980. The PSA is located west of the Contact fault and includes the northeastern portion of the Kenai Peninsula, the Girdwood area, and northwest Prince William Sound (fig. 2). Adjacent areas in the CNF, Chugach State Park, Kenai Fjords National Monument, and Kenai National Moose Range were examined briefly where the information obtained would benefit the overall evaluation of the PSA region.

Portions of the Kenai Peninsula are accessible by highway, railroad, or trail but the majority is most efficiently reached by helicopter.

In Prince William Sound, much of the shoreline is accessible by boat or float plane but the interior portions can best be reached by helicopter since maintained trails or roads currently do not exist. Field studies are hampered by the presence of dense vegetation below 1,400 ft and the extremely steep terrain.

PHYSIOGRAPHIC SETTING

The northeastern quadrant of the Kenai Peninsula, including the Girdwood area, is characterized by glaciated, mountainous terrain typically with a relief of 3,000 ft or more (fig. 3). Alpine glaciers and rock glaciers are common above 3,000 ft and locally extend to sea level on the Prince William Sound side of the Kenai Peninsula. Vegetation is relatively sparse above 1,400 ft allowing much of the area to be easily traversed on foot. Stream drainages are moderately developed and characterized by relatively steep gradients, cascades, and numerous bedrock canyons.

Northwestern Prince William Sound is characterized by high relief, steep rocky cliffs, and numerous large alpine glaciers, several of which reach tidewater (fig. 4). Stream drainages are generally poorly developed, steep and contain numerous falls and canyons.

PREVIOUS WORK

The earliest reports concerning the mineral potential of the PSA were published by the USGS (Becker, 16; Mendenhall, 115). Moffit (119) gave the first detailed description of the placer gold deposits in the Hope-Sunrise area. Johnson (85) was the first to discuss the lode deposits of the northern Kenai Peninsula. Later USGS reports, concerned with geology and mining on the Kenai Peninsula and nearby areas, include Martin and others (108), Tuck (182), and Park (130). The Port Wells lode-gold area, in northwest Prince William Sound, was first described by Grant and Higgins (67), in greater detail by Johnson (86, 87), and is mentioned briefly in later USGS Mineral Resources of Alaska Reports. McKeveatt (112, 113) published tables describing the metalliferous deposits of southern Alaska which include those occurring in the PSA. Mitchell (117, 118), while working for

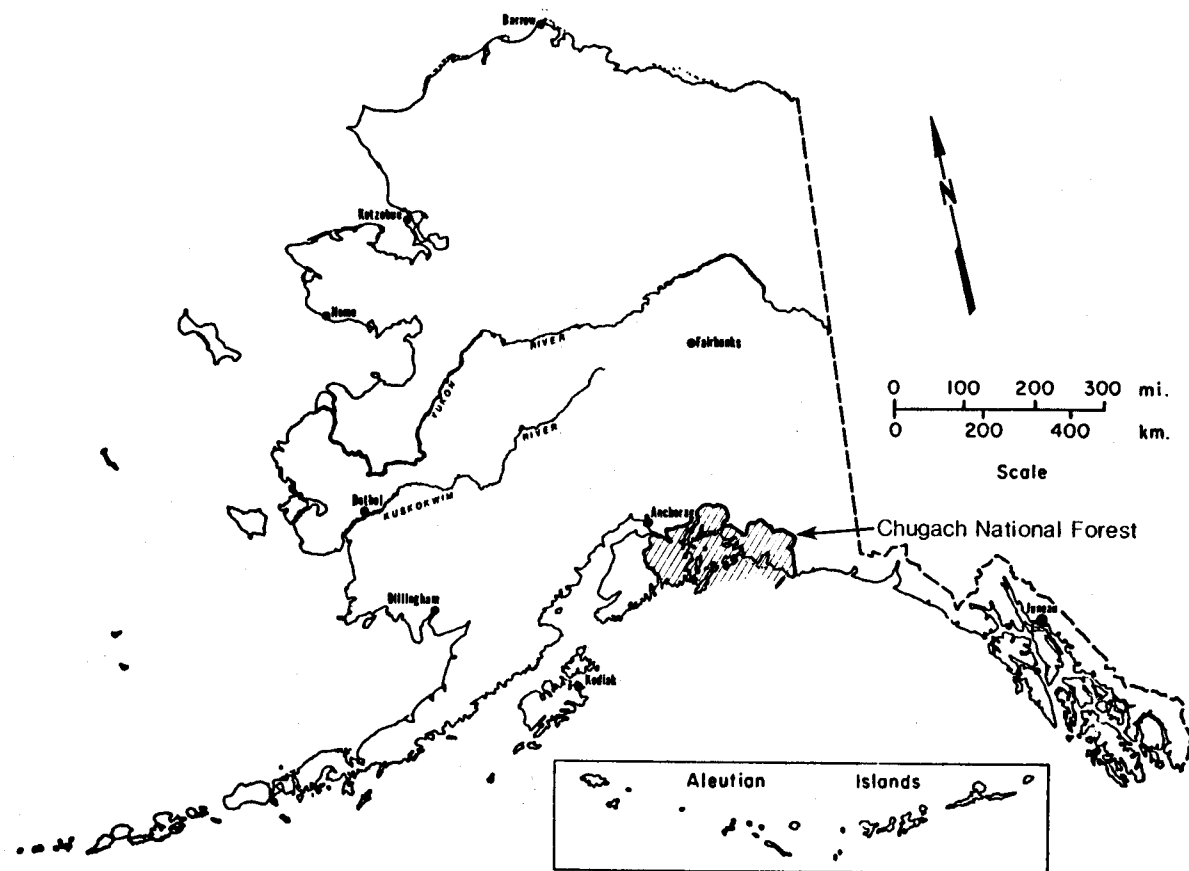


FIGURE 1. - Index map of Alaska showing Chugach National Forest

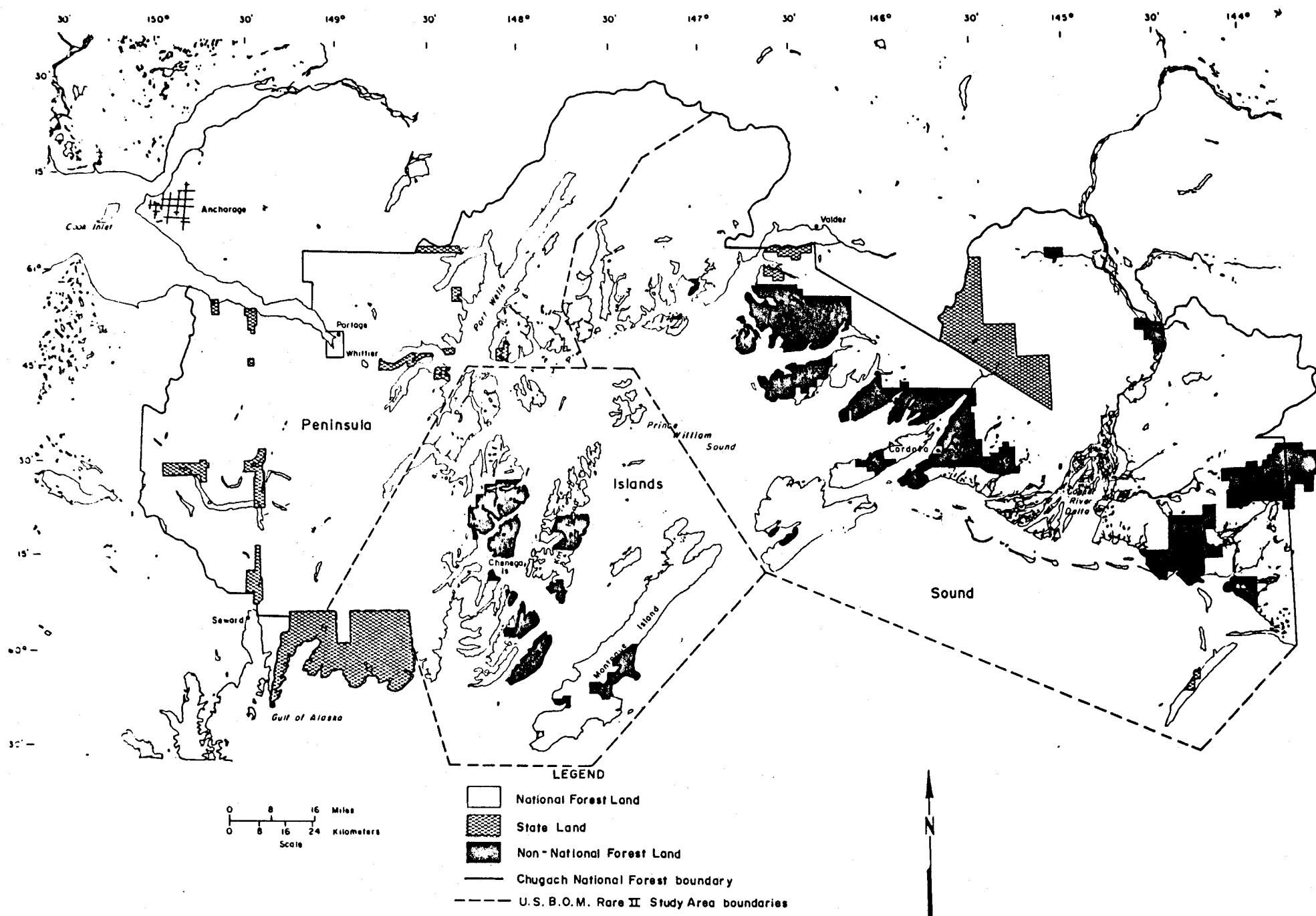


FIGURE 2. - Map showing study area boundaries and land status for the Chugach National Forest, Alaska



FIGURE 3. - Photograph of the Coopers Landing area, Chugach National Forest, Alaska



FIGURE 4. - Photograph of Port Wells from Esther Island,
Chugach National Forest, Alaska

the USGS, wrote a Masters dissertation dealing with the geology and mining of the Hope-Sunrise mining district and the genesis of gold vein mineralization in the Hope area. Lode and placer deposits on the Seward and Blying Sound quadrangles are discussed by Tysdal (184, 185). Hoekzema (76) discussed placer deposits on the Kenai Peninsula and Hoekzema and Sherman (77) reported on a molybdenum occurrence near Whittier, Alaska. Jansons (79) published analytical results for Bureau samples collected in 1979.

To date only reconnaissance level geologic mapping, generally at a scale of 1:250,000, has been completed in the study area (188). The McHugh Complex exposed in the western part of the PSA has been discussed by Clark (43) and Tysdal and Case (187). Characteristics of the Valdez and Orca Group metasediments have been summarized by Moffit (121), and in greater detail by Tysdal and Case (188). Intrusive rocks are discussed by Grant and Higgins (66), Lanphere (101), Lanphere and Plafker (102), and Tysdal and Case (188). Results of regional aeromagnetic and gravity surveys in the Seward and Blying Sound Quadrangles were published by the USGS (Case and others, 38, 39). LeCompte (103) compiled maps displaying linear and arcuate features interpreted from Landsat Imagery for the same quadrangles. Quaternary geology of the western portion of the PSA has been described by Karlstrom (97) and Kachadoorian and others (94). Recent interpretations of the regional tectonic framework of the Kenai Peninsula and Prince William Sound have been published by Plafker and others (131, 132), Budnik (31), and Tysdal and Case (188).

ACKNOWLEDGMENTS

The authors would like to thank Dr. Miles Silberman, geologist with the USGS, who assisted Bureau personnel in collecting samples and data and in understanding the genesis of mineral deposits within the PSA. We also appreciate the help of Philip Burna, Habitat Biologist with the State of Alaska Department of Fish and Game, and Peter Panarese, Chief of Operations, Alaska Division of Parks and Recreation, who supplied the state permits needed for sampling within the CNF and adjacent areas. Numerous miners, in the PSA cooperated with Bureau efforts during the study. The authors would like to especially thank the following for their contributions of data, time, and resources which greatly enhanced the study: Edward Ellis, Crescent Creek miner; George and Lillian Zimmer, Milo Flothe, and Robert Kelly, Quartz Creek miners; Al Johnson, Hope Mining Company; Marty Marht, Falls Creek miner; Patrick Bogan, East Point Mine Owner; Marvin Self, Mills Creek miner; Donald Goodman, Colorado Creek miner; Doug Keating, Cooper Creek miner; Barney and Cynthia Toohey, Crow Creek Mine operators; and Gary McCarthy, David Cavanaugh, and Gene Backus, Crow Creek miners.

LAND STATUS

On December 5, 1978, the majority of the PSA was withdrawn from mineral entry by the Secretary of the Interior at the request of the Secretary of Agriculture. The lands have subsequently been reopened to mineral entry since the signing into law of ANILCA (Public Law 96-487).

Over the years several small areas have been withdrawn from mineral entry for recreational or other purposes at the request of the U.S. Forest Service (USFS). Several patented inholdings and state and native selections closed to mineral entry are also present. Therefore, land status is complex and should be checked with the USFS and/or Bureau of Land Management (BLM) prior to locating mining claims.

The BLM mining claim report dated October 19, 1984 (194) indicates that there are approximately 2,400 unpatented placer and 600 unpatented lode, and 5 patented claims located within the PSA.

MINING HISTORY

The earliest recorded attempts to identify mineral resources in the PSA were made by Russian explorers in the mid-1800's. Peter Doroshin, a mining engineer sent by the Russian American Company, reported finding widespread auriferous gravels along the Kenai River system in 1848 but was apparently unsuccessful in locating commercial quantities of gold (15). Gold placers were discovered on Resurrection, Mills, Canyon, and other creeks on the Kenai Peninsula in the 1880's and 1890's and many prospectors originally destined for the Klondike gold fields were attracted to the area. Lode gold deposits were first reported on Sawmill and Bear Creeks in 1904 (119). Other lode deposits in the Summit Lake, Moose Pass, and Girdwood areas were discovered soon after. Evidence of past mining history such as wingdams, hydraulic pipes, mills, and workings abound throughout the CNF (figs. 5 and 6). Many early prospectors explored nearby Prince William Sound and discovered significant gold and copper deposits which were brought into production during the 1900's.

The PSA is included in portions of the Kenai Peninsula, Cook Inlet-Susitna, and Copper River mining regions as defined by Ransome and Kearns (133).

Historically, several mining district names have been used to refer to various, somewhat nebulous, and commonly overlapping areas within the PSA. These include the Hope-Sunrise, Moose Pass, Turnagain Arm, Girdwood, Port Wells and Golden mining districts. Because of their ill-defined boundaries, no attempt has been made to discuss them individually. Kenai Peninsula miners have recently reestablished a mining district which includes most of the northern portion of the Kenai Peninsula. References containing excellent historical mining data for the PSA include Barry (15), Johnson (85, 86), Martin and others (108), Mitchell (117), Moffit (119, 120), Park (130), and Tuck (182).

Approximately 35 gold placer operations were intermittently active during the 1980 to 1982 mining seasons. These ranged from 4- to 8-in. suction dredges and hand placer operations capable of processing 10-15 yd³/d to backhoe-dozers-washing plant operations which could process up to 2,000 yd³/d (figs. 7 and 8). Numerous recreational miners also worked along the goldbearing streams of the Kenai Peninsula but their aggregate production did not likely exceed 100 oz of gold/yr. Several lode gold mines have been actively investigated during the same time period but none have produced.

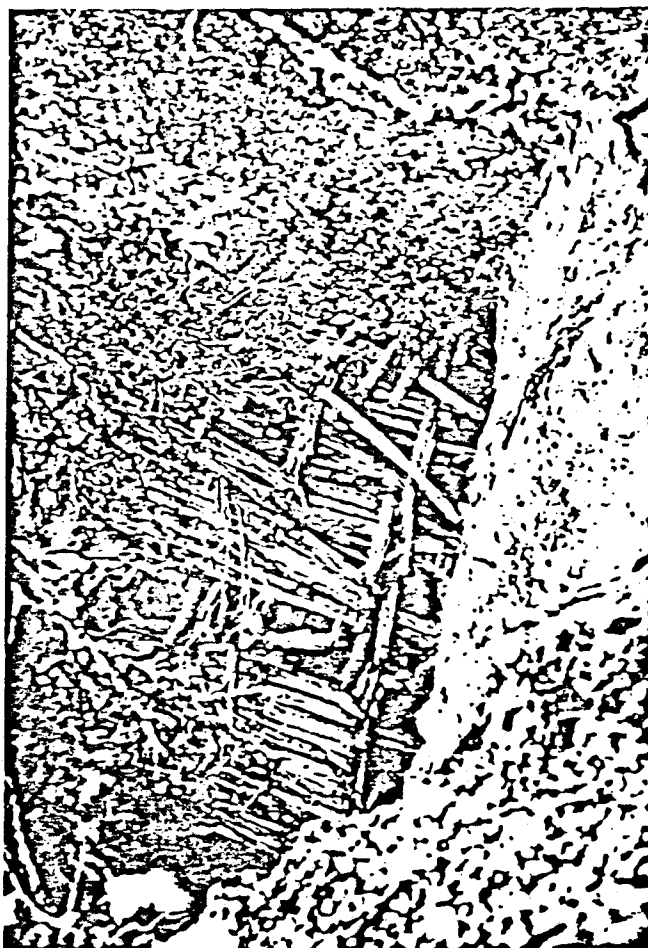


FIGURE 5. - Photograph of wingdam on Canyon Creek,
Chugach National Forest, Alaska



FIGURE 6. - Photograph of the Falls Creek Mill near Moose Pass,
Chugach National Forest, Alaska

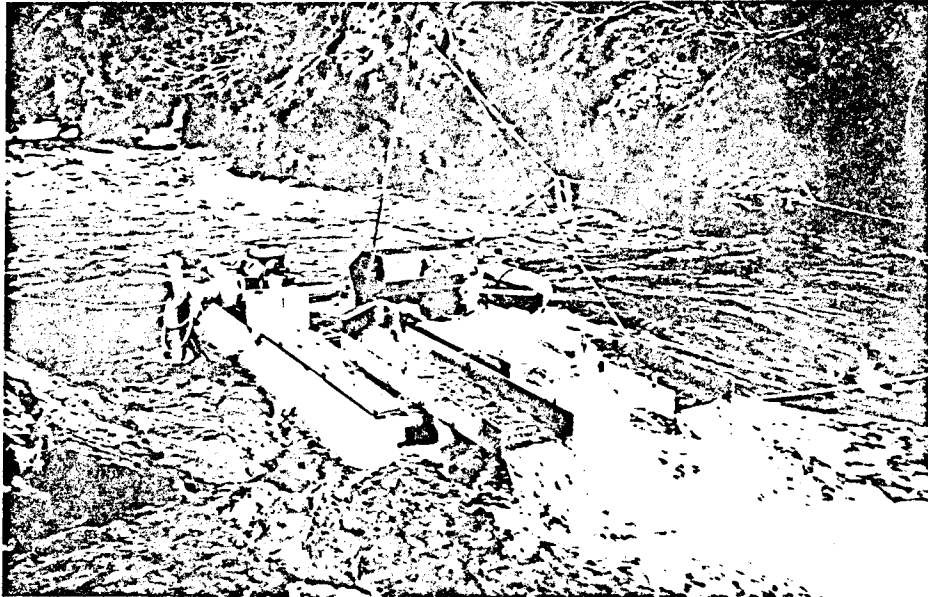


FIGURE 7. - Photograph of an 8-in. suction dredge processing gravels on the Kenai Peninsula, Chugach National Forest, Alaska

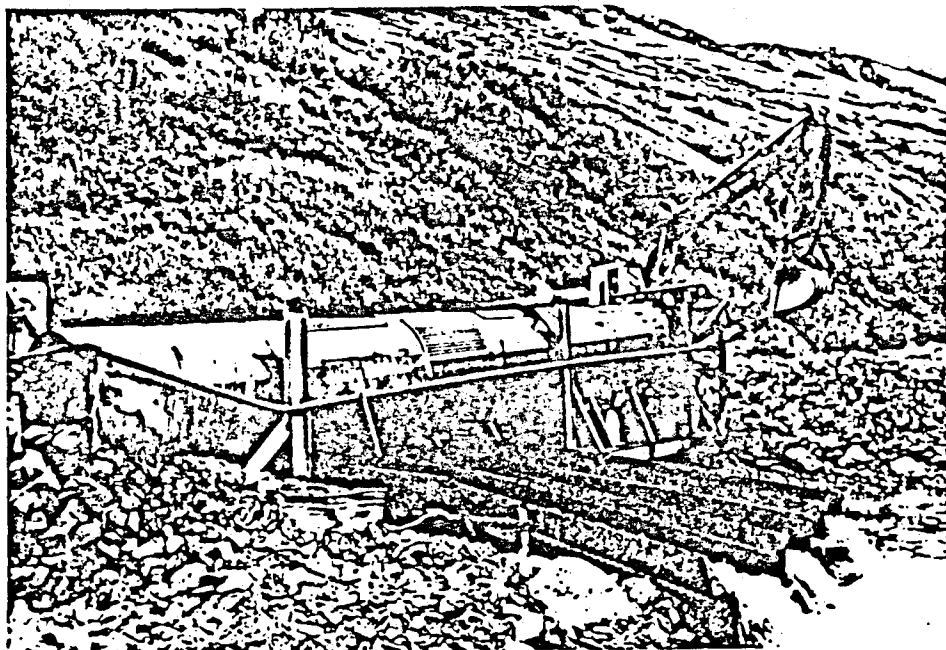


FIGURE 8. - Photograph of a backhoe-trommel placer operation on Mills Creek,
Chugach National Forest, Alaska

GENERAL GEOLOGIC SETTING

The PSA is underlain by the metasedimentary Cretaceous Chugach terrane which is locally intruded by small Tertiary granitic stocks and felsic sills and dikes (fig. 9). Structurally, the rocks are complexly folded and faulted.

CHUGACH TERRANE

The Cretaceous Chugach Terrane (91) consists predominantly of a northerly striking, steeply dipping marine metaclastic (flysch) sequence composed of oceanic metavolcanic rocks mixed with metasediments (fig. 10). Two lithologically distinct units comprise the Chugach Terrane. The older McHugh Complex occurs along the western margin of the PSA and is in thrust contact with Valdez Group metasediments which underlay the rest of the PSA. Valdez Group rocks host most of the known placer and lode gold deposits in the CNF. Tysdal and Case (188) speculate that these rocks accreted to the southern Alaska mainland during the late Cretaceous and early Tertiary time. The Chugach Terrane is part of a large regional subduction complex which extends northeast from Kodiak Island through the study area and continues east across the Canadian Border. The Chugach Terrane is bordered to the east-southeast by the Tertiary Orca Group.

INTRUSIVES

Intrusive rocks of two types, medium-grained granitic plutons and fine-grained felsic dikes, occur in various parts of the PSA. Two relatively large granitic plutons occur in the northwest portion of the PSA: the Esther Island Batholith, which makes up most of Esther Island and the Passage Canal pluton, which is exposed on the north side of Passage Canal, northeast of Poe Bay (fig. 9). Smaller granodioritic to granitic stocks crop out in the vicinity of Crow Pass, near the toe of Billings Glacier, along the west side of Port Wells at the Mineral King Mine on Bettles Bay, at the Granite Mine on Harrison Lagoon, and in the vicinity of Yale Glacier. The remainder of the PSA lacks plutons of significant size; however, numerous felsic dikes and sills, ranging from one to 20 ft in thickness are exposed throughout the region. Concentrations of felsic dikes and sills occur in several subparallel north to northeast trending belts. The majority of these tabular intrusives strike north to northeast and cut bedding and/or foliation at a low angle.

STRUCTURE

The Valdez Group metasediments are complexly folded and faulted. At least two stages of deformation are recognized.

Faults

The PSA contains at least two prominent sets of faults. Regionally the most apparent occur as relatively widely spaced (several miles) north-northeast striking steeply west-dipping longitudinal faults having reverse vertical and right lateral horizontal components of movement (diagonal-slip faults). The east side of each fault has

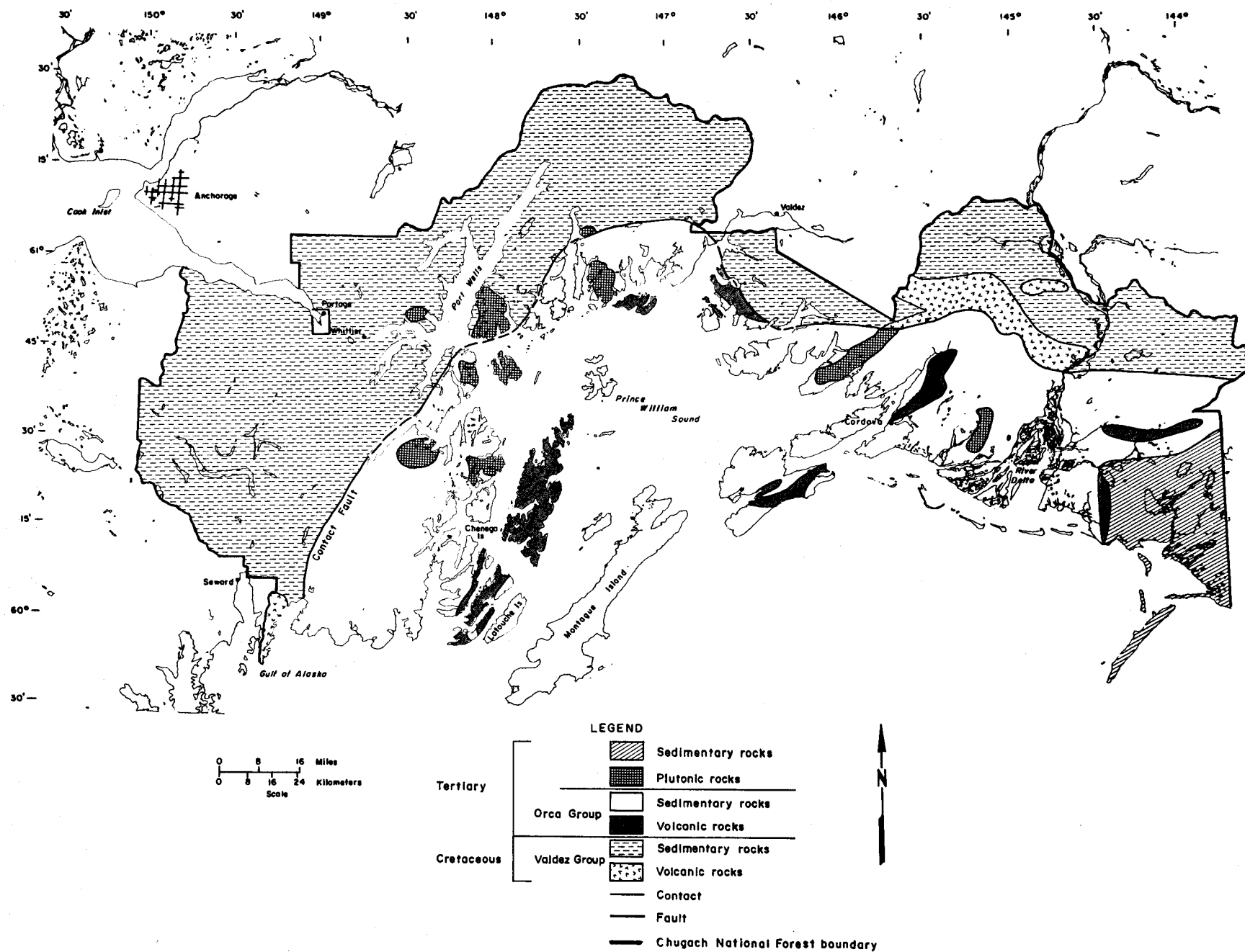
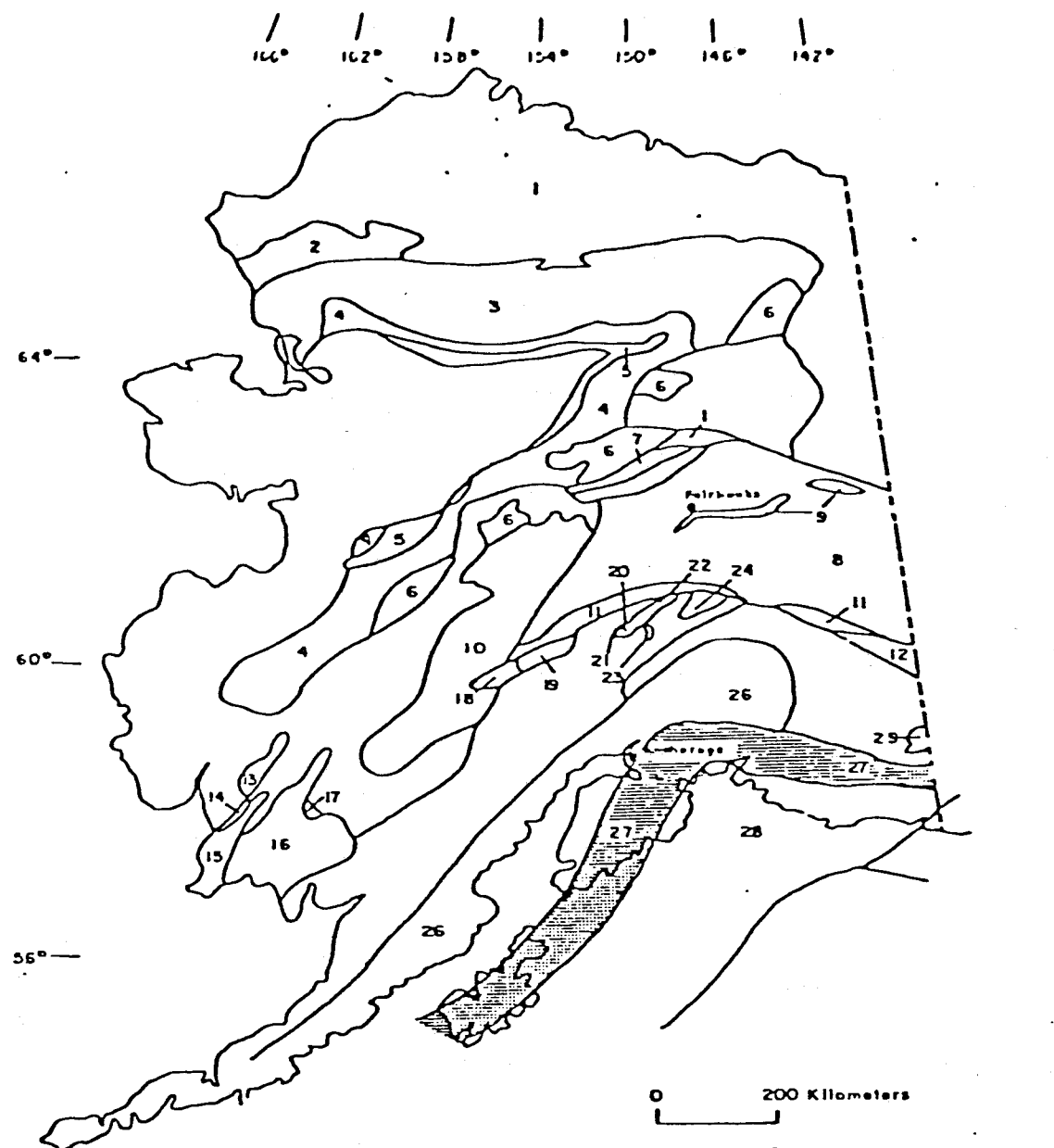


FIGURE 9. - Geologic map of Chugach National Forest, Alaska



Tectonostratigraphic terranes (exclusive of the Seward Peninsula and S.E. Alaska)

- | | | |
|-----------------|---------------------------------|-------------------|
| 1 North America | 11 Pingston-McKinley, undivided | 21 West fork |
| 2 Koguk | 12 Mantasia | 22 Brood Pass |
| 3 Endicott | 13 Nyack | 23 Sustine |
| 4 Ruby | 14 Kilbuck | 24 McLaren |
| 5 Angoyuchom | 15 Goodnews | 25 Wrangellia |
| 6 Innoko | 16 Togiak | 26 Peninsular |
| 7 Livengood | 17 Tikchik | 27 Chugach |
| 8 Yukon-Tanana | 18 Dillinger | 28 Prince William |
| 9 70° mile | 19 Mystic | 29 Alexander |
| 10 Nixon fork | 20 Chulitna | |

FIGURE 10. - Tectonostratigraphic terranes of Alaska (91).

apparently moved down and south relative to the west side. Examples include the Contact, Port Wells, and Placer River faults. Smaller closely spaced (hundreds of feet) parallel faults (shear zones) are recognized throughout the PSA. Locally, older faults occur as relatively closely spaced (50 to 500 ft) west to northwest striking steeply dipping transverse faults. These typically have left-lateral horizontal displacements of a few feet and vertical displacements of similar magnitude. Tectonically-related joint sets occur throughout most of the PSA. Quartz veins develop along one or both of these fault directions in most areas. Most ore has been emplaced along the older transverse fractures which are typically offset by the northeast striking set of diagonal-slip faults.

Folds

At least two generations of folding have been documented within the Valdez Group flysch deposits. One set (type 1) consists of regional scale (isoclinal ?) folding with axial planes striking north to northeast and dipping steeply west and axes plunging moderately to the north (fig. 11). The second set (type 2) of folds has axial planes similar in attitude to those of the larger (type 1) folds but plunge steeply and are often spacially related to the large regional reverse diagonal-slip faults. Mineralized quartz veins locally show evidence of occupying the crests of relatively large folds. Mitchell (117) discusses folding in the Hope area in some detail.

PRESENT INVESTIGATIONS

This Bureau investigation of the mineral potential of the PSA has included literature research, and a 4-year field program. Field studies included the collection and evaluation of nearly 1,800 samples, mine and prospect mapping, an evaluation of the geologic controls and environments of deposition, and the identification of zones having potential for mineralization.

LITERATURE RESEARCH

A literature search and compilation of bibliographies has been made using the following sources: USGS (including a review of historical files in Menlo Park), Bureau (including Minerals Availability System (MAS) files and mine production data), USFS, State of Alaska, U.S. Mint, and mining companies who have been active in the PSA. Claim records have been obtained and updated using the BLM (194) and State of Alaska MinFile (6) recording systems. Additional information has been obtained from Interviews with and correspondence received from miners and other individuals knowledgeable about the geology, mining history, and mineral development of the area. Much of the above information, together with new data obtained by the Bureau and USGS, has been placed in files established for all known mines, prospects, and occurrences in the PSA. These files are available at the Alaska Field Operations Center in Anchorage, Alaska. Known mines, prospects, and mineral occurrences are shown at a scale of 1:250,000 on figure 14.

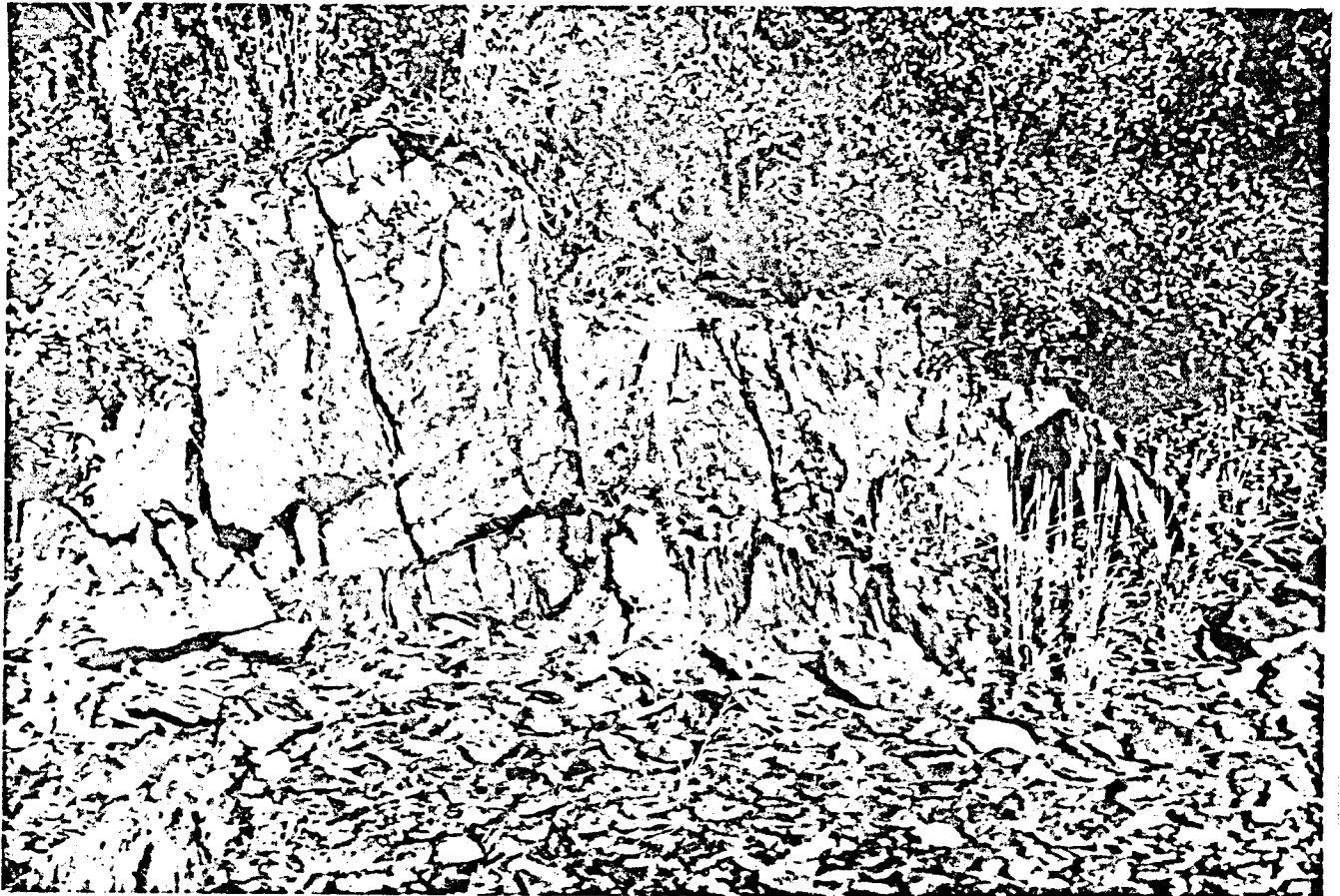


FIGURE 11. - Photograph of Type 1 folding located on Turnagain Arm, Chugach National Forest, Alaska. Axial plane is near vertical and axis plunges north.

FIELD PROGRAMS

Field investigations of the PSA commenced in 1979 and continued during the 1980, 1981, and 1982 field seasons. Work included collecting stream sediment, placer, rock, and mineral samples; mapping and sampling of underground and surface mine workings; and traversing potentially mineralized terrains in search of previously unreported deposits.

Table 1 summarizes the numbers and types of samples collected in the PSA. Placer samples were taken from the majority of the streams located in the PSA. Closely spaced stream sediment samples were collected from the central Kenai Peninsula area and western Prince William Sound in 1979. Subsequently, stream sediment samples were collected near known sites of mineralization. Rock and mineral samples have been collected from most of the known mines and prospects and from newly discovered occurrences. Rock samples were of four types: 1) chip sample - collected in a continuous line for a measured distance across an exposure; 2) random chip sample - collected at random points from an apparently homogeneous mineralized exposure; 3) select grab sample - collected from the highest or lowest grade portion of a mineralized zone or mine dump to determine the presence or absence of minerals of economic importance; and 4) grab sample - random sampling of dump, outcrop or float material to determine the presence or absence of minerals of economic importance.

Geologic mapping by the Bureau focused on locating boundaries of potential mineral belts and positions and attitudes of significant structures not indicated on existing geologic maps and mapping of mineral deposits. Mine maps completed during this study accompany the lode deposit descriptions in appendices A, B, and C.

SAMPLE COLLECTING AND PROCESSING PROCEDURE

In 1979, stream sediment samples were taken from drainages within the Summit Lake and Hope areas at quarter-mile intervals and from streams in the Port Wells area at wider spaced intervals to search for potential source areas of gold and other elements in the PSA. Each sample consisted of 8 to 10 oz of sediment collected from within the active stream channel. These samples were sent to the Rainbow Resource Laboratory in Anchorage, Alaska for sizing and quantitative analyses for copper, gold, lead, nickel, silver, zinc, and, occasionally mercury and molybdenum. Splits of the samples were sent to Skyline Labs Inc., in Wheat Ridge, Colorado for 31 element semi-quantitative emission spectrographic analysis. Stream sediment sampling in 1980, 1981, and 1982 was used primarily to identify the geochemical expression of and search for extensions of known mineral deposits such as the antimony prospect on Kenai Lake and the molybdenum-copper occurrence at Billings Glacier.

Bulk placer sampling techniques were used in 1980, 1981, and 1982 to acquire information useful for evaluating the various types of placer deposits within each drainage. The sampling procedure consisted of digging a pit or trench (fig. 12), processing 0.1 yd³ increments of gravel through a portable sluice box or hydraulic concentrator (fig. 13) and panning the recovered concentrate to retain only the gold and

TABLE 1. - Number of samples collected in the PENINSULA study area,
Chugach National Forest, Alaska

Area	Kenai Peninsula			Northwest Prince William Sound		
	Placer	Rock and Mineral	Stream Sed	Placer	Rock and Mineral	Stream Sed
1979 <u>1/</u>	0	38	281	0	215	240
1980 <u>2/</u>	152	151	68	31	87	10
1981 <u>3/</u>	154	115	14	60	144	9
1982 <u>3/</u>	114	114	0	2	19	0
Total	420	418	363	93	465	259

1/ Samples collected in 1979 were sent to Rainbow Resource Labs in Anchorage, Alaska for preparation and Atomic Absorption and wet chemical analyses and to Skyline Labs, Inc. in Wheat Ridge, Colorado for 31 element emission spectrographic analyses.

2/ Samples collected in 1980 were sent to the Bureau of Mines Lab in Juneau, Alaska for preparation and fire assay and the TSL Laboratories, LTD in Spokane, Washington for 42 element emission spectrographic analysis and all other analyses. Appendix I lists the elements analyzed for and the detection limits used by each of the labs.

3/ Samples collected in 1981 and 1982 were sent to Rainbow Resource Labs in Anchorage, Alaska for preparation. They were then sent for quantitative AA and fire assay and 42 element emission spectrographic analysis to TSL Laboratories LTD in Spokane, Washington. Splits of many of these samples were given to the U.S. Geological Survey Elmendorf Laboratory and the Bureau of Mines Juneau Laboratory for duplicate analyses.



FIGURE 12. - Photograph of a trench dug for sampling of auriferous gravels on the Kenai Peninsula, Chugach National Forest, Alaska



FIGURE 13. - Photograph showing a 0.1 yd³ placer sample being processed using a hydraulic concentrator, Chugach National Forest, Alaska

heavy minerals. Wherever possible channel samples were taken of gravels from the surface down to bedrock. Bedrock was sampled if possible. A 3-in. suction dredge was used to sample gravels within active stream channels. Dredging is used most successfully during periods of low water and was of limited use in 1980 and most of 1981 due to flood conditions which persisted during much of both field seasons. Therefore, during 1982, an effort was made to use the suction dredge to sample as many drainages as possible during May prior to development of high run-off conditions. Using these sampling techniques, the efficiency of gold recovery varied depending upon size and shape of the gold, clay content of the gravels, and processing parameters, but is generally believed to exceed 80 pct, based upon testing of the tailings. Placer concentrates were retained in Anchorage in order to separate and weigh the visible gold, recover fine gold by amalgamation, and examine the heavy mineral concentrate with a microscope and under an ultraviolet light. Only gold coarser than approximately 0.01 in. was physically separated under a microscope and weighed. Amalgamation was then used to recover the fine gold remaining in the concentrate. Upon completion of these studies, samples were sent to the Bureau's analytical lab located in Juneau, Alaska for multi-element X-ray spectrographic and/or fire assay to identify gold to silver ratios and analyze for trace elements which may be present in the gold (antimony, arsenic, barium, bismuth, cadmium, copper, iron, lead, mercury, molybdenum, silver, sulfur, tellurium, titanium, and zinc).

Rock and mineral samples were collected for chemical analysis and the preparation of thin and polished sections. Most samples were quantitatively analyzed by TSL Laboratories, Ltd., in Spokane, Washington and/or by Rainbow Resource Labs in Anchorage, Alaska for arsenic, copper, gold, lead, silver, and zinc and some also for antimony, mercury, molybdenum, tellurium, and tungsten using atomic absorption (AA) or wet chemical techniques. Samples containing visible gold and/or silver were fire assayed by the Bureau's Juneau lab and/or TSL in order to compare and verify results with those obtained using AA. Some samples were analyzed semiquantitatively by TSL using optical-emission spectrograph. Check analyses were done by the Bureau's laboratories in Reno and Juneau. Table 2 gives the lower detection limits of elements analysed for by atomic absorption and fire assay.

CRITERIA USED FOR RESOURCE ASSESSMENT

Qualitative criteria were developed to help more consistently evaluate the mineral development potential of mines, prospects, and mineralized occurrences in the PSA. Table 3 lists grade and reserve criteria used for establishing high, medium, low, and unknown mineral development potential for each deposit identified, general recommendations for further study of deposits believed to have development potential, and definitions of mine size and grade used in this report. Grade and tonnage values indicated should be used with caution for evaluating the feasibility of mining any given prospect as additional factors must be considered. Mine feasibility studies should include analyses of mining costs, metal prices, market conditions, location and access, taxes and desired rates of return on investment. The feasibility of economic gold mining in the CNF is the subject of a report by Sherman and Jansons (149).

TABLE 2. - Lower detection limits for elements using fire assay and atomic absorption

Atomic Absorption Analysis		Fire Assay	
Element	Detection Limit (ppm)	Element	Detection Limit (ppm)
Ag.....	0.1	Au.....	0.005
Au.....	0.03	Ag.....	0.2
Ba.....	1		
Co.....	1		
Cr.....	1		
Cu.....	1		
Mn.....	1		
Mo.....	1		
Ni.....	1		
Pb.....	1		
Sb.....	1		
Zn.....	1		
U.....	10		
U ₃ O ₈	1		
Th.....	20		
W.....	5		
Hg.....	0.1		

Appendices A, B, and C summarize data and mineral development potential of each lode deposit. Identified resources were calculated for deposits having adequate data available. Appendix D summarizes the characteristics and placer resource development potential of drainages examined. Figure 14 shows the locations of all mines, prospects, and occurrences described in this report.

DEPOSIT TYPES

Small high-grade lode gold deposits, occurring as epigenetic-hydrothermal veins formed along well-defined fractures, and placers derived from them are the most common types of mineral deposits in the PSA. Other deposit types include: silver deposits on Bear, Gulch, and Daves Creeks on the Kenai Peninsula; copper prospects located on Lynx Creek and the Resurrection Peninsula south of Seward; molybdenum-copper vein mineralization near Crow Pass; molybdenum associated with the Billings Glacier stock; antimony prospects located near Kenai Lake and Barry Arm; and chromium occurrences on the Resurrection Peninsula. Construction materials capable of being utilized for a variety of purposes are distributed throughout the PSA.

TABLE 3. - Criteria used for qualitative assessment of the mineral development potential of lode mines, prospects, occurrences, and placer deposits.

Development Potential	Grade	Reserve Base	Study Recommendations
High	Several samples or past production indicate minable grades ^{1/} are present:	Established reserve base or sampling indicates geologic conditions offer a good possibility of establishing enough reserves to supply a mine of a given size. ^{1/}	Site specific evaluation including drilling strongly recommended.
Moderate	A single sample indicates minable grades are present or several samples contain highly anomalous ² values.	Minor reserves established. Geologic conditions are conducive for establishing enough reserves to supply a mine of a given size.	Additional reconnaissance and/or site specific evaluation recommended.
Low	No highly anomalous samples obtained. Slightly anomalous values or none detected.	No reserves established. Geologic conditions are poorly suited for establishing reserves to supply a mine of a given size.	Additional reconnaissance may be needed, but in most cases believed to have little possibility of success.
Unknown	Previously reported mineralization not sampled by the Bureau		

^{1/} Mine size/grade characteristics used for assessment of mineral development potential

Size of Mine	Vein Lode Gold	Placer Gold
Small	<50-tons/d (grade >.7 oz/ton)	<500 yds ³ /d (grade >0.015 oz/yd ³)
Medium	50-200 tons/d (grade >.4 oz/ton)	500-2,000 yds ³ /d (>0.01 oz/yd ³)
Large	200-1,000 tons/d (grade >.3 oz/ton)	2,000-10,000 yds ³ /d (>0.008 oz/yd ³)

^{2/} ie. Vein Lode Gold: >0.1 oz/ton
Placer Gold: >0.002 oz/yd³

LODE DEPOSITS

Types

Five categories of lode deposits have been identified in the PSA: (1) gold-silver quartz vein deposits; (2) copper (base metal) deposits; (3) molybdenum deposits; (4) antimony deposits; and (5) chromium deposits. Table 4 lists each deposit type and subtype, summarizes their characteristics, and gives examples of each. Locations are shown on figure 14.

Gold/Silver - Quartz Vein Deposits

Gold/silver vein deposits in the PSA have been subdivided into six categories based upon their spacial relationship with intrusives, and the amount of sulfide present (table 4, deposit type 1, a-f). All of these deposits occur as epigenetic quartz carbonate veins. Individual deposit descriptions, included in appendices A and C, should be referred to for more specific details.

The origin of gold/silver-quartz vein deposits is a controversial subject among geologists working in the PSA and similar graywacke-slate terranes. Numerous investigators have attempted to relate such deposits to orogenic related magmatic events, others argue that they can be related to metamorphic processes. Boyle (20, p. 116) summarizes the controversy and concludes the following:

"It is sufficient to state here that some gold-quartz veins and other auriferous deposits exhibit a spatial relationship to intrusive granitic bodies in orogenic zones throughout the world; other gold-quartz veins and gold-bearing deposits show no such relationship. Nearly all types of epigenetic gold deposits, however, are restricted to rocks that exhibit a low to moderate degree of metamorphism (greenschist to amphibolite facies). One does not find epigenetic gold deposits in rocks that do not show the effects of considerable recrystallization and alteration such as regional propylitization. From this fact the logical conclusion seems to follow that epigenetic gold deposits in the vicinity of intrusive granitic rocks is not fortuitous. The reason for this, however, may not be that the granitic bodies provided the gold, but that these bodies are simply one in a series of products of intense metamorphism. These bodies also include the gold deposits, the gold being derived from piles of sedimentary and volcanic rocks and concentrated as a result of granitization and later metamorphic processes that continued long after the emplacement, crystallization, and consolidation of batholiths, stocks and dykes of granite, granodiorite, etc."

Mitchell, Silberman, and O'Neill (118) have studied fluid inclusions from gold quartz veins in the Hope area. They suggest that silica, carbon, sulfur, and metals contained in unstable volcanic detrital grains within Valdez Group sediments were dissolved by circulating meteoric water and subsequently deposited in auriferous lodes located along open, predominantly west-northwest oriented structures. These deposits are not spatially associated with granitic plutons and it remains undetermined whether veins located elsewhere in the PSA, near

Table 4. - Lode deposit types in the PENINSULA study area

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.) <u>4/</u>
1. Gold-silver quartz vein deposits								
a. Quartz car- bonate veins hosted by fractured felsic dikes. gold/silver= 3.2 (Summit Lake-Hope)	Dikes dip near verti- cally and strike sub- parallel to regional structure.	Large width: 2 to 18 ft av. 3 to 4 ft length: 1,000 ft to several miles. depth: unknown, likely con- siderable. Av. probable reserves; 150,000 tons Maximum probable reserves 8,000,000 tons.	Low 10.1 oz gold/ton. Quartz veins may be locally high grade.	Sulfides make up to 3 pct of the quartz and include apy, py, cpy, gal, sphal, and locally stib, and pyrr. Apy occurs in the dike rock.	Valdez Group metaclastics composed of interbedded slate and metasilt- stone.	Gold is associated with quartz containing gal and sphal.	Gilpatrick only producer 3,404 oz gold, 1,049 oz silver.	Gilpatrick (S-253) Teddy Bear (S-290) Kenai Star (S-296)

4/Numbers in parentheses, not underlined, refer to deposit number and 1:250,000 quadrangle on which it is located used in Appendices to this report. A - Anchorage, S - Seward, and BS - Blying Sound quadrangles. Deposit locations are shown on figure 14.

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
1. Continued								
b. Quartz-carbonate veins spacially associated but not in contact with felsic dikes. gold/silver= 1.6 (Summit Lake-Hope, Golden areas)	Veins cross-cut regional structure at 30-60° and have steep dips. Occur in fissures and along joint surfaces. Consistently cut off by faults and often sheared.	Small: width: 1/3 in. to 4 ft av. 8 to 10 in. length: 50 to 600 ft av. 150 to 200 ft. depth: 50 to 300 ft? Av. probable reserves: 500 to 1,500 tons. Maximum probable reserves 15,000 tons.	High: 0.7 to 0.9 oz gold/ton reported production grades. Sampled vein averages of 1-2 oz/ton common. Note: Veins sampled in the Golden area are lower in grade 10.3 oz gold/ton.	Sulfide content ranges from 1 pct to 2 pct and includes apy, gal, sphal, py, and cpy.	Interbedded Valdez Group metaclastics. Usually slate and metasilstone. Veins widen in coarse-grained rocks and narrow in finer grained rocks.	Gold occurs in carbonaceous ribbons adjacent to or surrounded by gal., smeared along fracture surfaces and in vugs. Gold is reported to be +60 mesh in producing mines, but is seldom coarser than 0.02 in.	Production in excess of 8100 oz gold and 5000 oz silver from Summit Lake-Hope area. Only minor production reported from Golden area.	Hirshy Lucky Strike (S-289) Hirshy Carlson (S-292) Nearhouse (S-299) Oracle (S-255) Ronan & James (S-256) Also possibly: Mountain (S-133) Nugget (S-136) Sweepstake (S-140) North Star (S-141)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
1. Continued								
c. Quartz veins associated with small-medium sized granitic stocks. gold/silver= 8 (Port Wells) (Crow Pass) (Passage Canal)	Veins cross-cut regional structure at variable angles and are peripheral to and locally crosscutting the granite. Generally moderately to steeply dipping and occur along shear zones and in fissures.	Small to Medium: width: 6 to 48-in. av. length: 200 to 600 ft or more av. 300 to 400 ft. depth: 150 to 500 ft?, Av. probable reserves 5,000 to 10,000 tons. Maximum probable reserves 50,000 tons.	Medium to High: Production grades reported to be 0.5 to 0.9 oz gold/ton. Av. value of Jewel vein samples 1.07 oz gold/ton.	Sulfides make up very large portion of some veins, locally 25 to 30 pct. Others less (1 to 2 pct). Sulfides include apy, gal, sphal, py, pyrr, cpy, and locally moly or stib.	Contact metamorphosed Valdez Group (hornfels) and granite. Veins tend to pinch out in the intrusives.	Gold is fine-grained (0.01 in), apparently in sulfides and is associated with high lead content.	Production in excess of 33,000 oz gold. Mostly from Granite (24,940 oz) Monarch-Jewel (4,927 oz) and Mineral King (2,783 oz). 4,000 oz of silver were also produced mostly from Granite Mine (2,500 oz). Monarch-Jewel (1,000 oz), and Mineral King (626 oz).	Monarch (A-38) Bahrenberg (A-41) Jewel (A-37) Brenner (A-40) Granite (S-147) Mineral King (S-156) Portage Mine (S-168) Alaska Homestake (A-30)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
1. Continued								
d. Quartz veins not spacially associated with dikes or stocks and with low sulfide content. Gold/silver= 4.3 (Moose Pass Area)	Veins usually crosscut regional structure at 50° to 90°. Dips are at 45° to vertical. Tend to occur along shear zones which are offset by faults.	Small: width: 6 to 48-in. av. 14 to 18-in. length: 100 to 450 ft av. 250 to 300 ft. depth: 50 to 250 ft. Av. probable reserves 3,000 to 5,000 tons. Maximum probable reserves 14,000 tons.	High: Production grades of 0.4 to 4.92 oz gold/ton reported. Veins sampled averaged from 0.4 to 1.6 oz gold/ton.	Low sulfide content, usually 11 pct and includes apy, gal, cpy, py, and sphal.	Interbedded Valdez Group metaseds. Generally with complex structure.	The gold appears to be disseminated along the contact portions of the veins and often is smeared along fractures. The gold is mostly very fine with particles 0.01 in rare.	Several properties had significant production totaling about 7,500 oz gold and 1,750 oz silver. The Crown Point was the largest producer with 3,125 oz gold and 634 oz silver.	Crown Point (S-227) East Point (S-226) Skeen-Lechner (S-225) Falls Creek (S-224) Grant Lake (S-231)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
1. Continued								
e. Quartz veins not spacially associated with dikes or stocks and with a high sulfide content. Gold/silver= 4.8 (Lost Creek) (Porcupine Creek)	Veins generally parallel regional structure and have steep dips. Occur along well-defined shear zones. Mineralization occurs in pods which pinch out and swell along strike.	Small width: 3 to 36-in., av. 12 to 14-in. length: 25 to 250 ft av. 100 to 150 ft. depth: up to 150 ft. Note: Usually more than one vein occurs together. Av. probable reserves: 1/50 to 1,050 tons/vein. Maximum probable reserves 7,000 tons.	High: Production grades of Primrose reported to be about 5 oz gold/ton. Samples collected from veins in the Lost Creek area. Contained 0.1 to 0.5 oz gold/ton. Samples from veins in the Porcupine Creek area contained from a trace to 3 oz gold/ton.	High sulfide content. Locally up to 15 pct including apy, gal, sphal, py, cpy, and pyrr.	Valdez meta-seds. Mineralization occurs mostly in a highly fractured carbonaceous slate.	Ribbon structure locally well-defined. Gold is fine and appears to occur in the carbonaceous bands.	Only the Primrose has recorded production (659 oz gold, 138 oz silver) though others may have had minor production.	Primrose (S-214) Brewer Alaska (S-205) Mizpah Ledge (S-209)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
1. Continued								
f. Quartz and/or quartz-carbonate veins containing high silver values with little gold. gold/silver= 10.1	Veins tend to be both subparallel to and crosscutting regional structure. Occur along shear zones with gouge commonly developed along one or both walls.	Small: Veins are small but may occur at closely spaced intervals. width: 2 to 12-in. av. 3 to 4-in. length: at least 150 ft av. unde-terminated. Depth unde-terminated. Av. probable reserves: 1,250 to 3,000 tons. Maximum probable reserves: Undetermined	Low to Medium: Samples collected contained up to 24.21 oz silver/ton. A select grab sample from the Gilpatrick property also contained 0.48 oz gold/ton.	Sulfides locally make up to 25 pct of the vein and include gal, stib, sphal, cpy, apy, and pyrr.	Veins occur in Valdez Group slate and meta-siltstones some are associated with felsic dikes.	The silver apparently occurs in sulfides especially gal. No discrete silver minerals have been identified though the mineralogy needs additional work.	No producing properties.	Gulch Creek (S-281) Gilpatrick (S-275)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
2. Copper (base metal) deposits								
a. Sedimentary hosted deposit. (Lynx Creek)	Massive sulfide lenses and pods occur along a shear zone subparallel to regional structure.	Small: width: 1 to 4 ft, av. 2 ft. length: 110 ft. depth: 1150 ft. Indicated reserves: 6,000 tons.	Medium: The average grade from 8 samples collected from the vein are: copper 2.5 pct, zinc 0.1 pct, gold 0.01 oz/ton and silver 0.3 oz/ton.	Sulfides include cpy, apy, py, pyrr, and minor gal.	The host rock is a sheared carbonaceous phyllite interbedded with meta- siltstone and spac- ially associated with a sulfide- bearing pebble conglom- erate.	The primary copper mineral is chalcopryrite. Some enrich- ment in the form of chal- cocite and malachite has occurred near the surface.	No production.	Ready Bullion (S-2/2)
b. Volcanic hosted deposits (Resurrection Peninsula)	Massive sul- fide lenses and pods and/or diss- minated sulfides re- cementing fractures in breccia or in well- defined shear zones.	Small: width: 2 to 10 ft. length: 450 to 600 ft. depth: unknown.	Low to Medium: Reported grades typi- cally av. 1 pct copper	Sulfides include cpy py, pyrr and sphal.	The host rocks are reported to consist of pillow basalts and tuffaceous breccias.	The primary copper min- eral is cpy. Some enrich- ment in the form of mal and az has occurred locally.	No production.	Prospect #69 (S-195) Copper Chief (S-190) Iron Mask (BS-12)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
3. Molybdenum		Medium to Large	Low					
a. Porphyry molybdenum mineralization associated with a biotite granite stock of probable mid-Tertiary age.	Stock is discordant with sharp contacts and a well- developed contact aureole.	The Billings Glacier stock is exposed over an area measuring 2,000 x 2,500 ft and 1/50 ft ver- tically.	Two samples contained 2,000 and 1,450 ppm molybdenum. Others con- tained only trace amounts.	Minor quan- tities of cpy and/or py occur in the stock. Peripheral quartz veins con- tained py, pyrr, cpy, gal, and possible tetr.	The stock intrudes typical Valdez Group metasedi- ments which have a horn- felsic texture near the contact.	Molybdenite occurs as disseminated grains and crystalline clusters up to 1.5-in. across and along frac- tures mostly in the mar- ginal port- tions of the pluton.	No production.	Billings Glacier (S-169)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
3. (cont.)								
b. Molybdenite and chalcopyrite bearing veins spatially associated with plutons of probable mid-Tertiary age.	Veins usually crosscut regional structure at a high angle. These veins appear to be older than associated gold producing veins in the Crow Pass area.	Small: width: 3 to 8 in. aver. length: 50 to 500 ft. Av. 200 to 300 ft. depth: unknown. Probable maximum reserves: 7,000 tons.	Low Samples contain up to 600 ppm molybdenum 2,000 ppm copper, 0.07 oz gold/ton and 0.3 oz silver/ton.	Sulfides include cpy, py, gal, sphal, and moly.	The veins occur in hornfelsed Valdez Group metasediments spatially associated with a granitic pluton.	Molybdenite and chalcopyrite occur as disseminated grains with associated sulfides and in lenticular masses in quartz veins.	No production.	Passage Canal (S-165) Crow Pass (A-38, A-39)

Table 4. - Lode deposit types in the PENINSULA study area -- Continued

Deposit Type (Location)	Structure	Size	Grade	Assoc. Sulfides	Host Rocks	Metal Assoc.	Production History	Examples (Map No.)
4. Antimony								
a. Stibnite-bearing veins.	Veins crosscut regional structure and occupy well-defined shear zones.	Small width: up to 2 ft. length: unknown. depth: unknown.	Unknown.	Unknown.	Valdez Group metasilstone and black slate.	Unknown.	1,000 pounds of antimony ore reportedly mined at the Barry Arm prospect circa 1913.	Barry Arm (A-2/)
35. b. Stibnite-bearing quartz veins filling fractures in felsic dikes.	Veins recent fractured felsic dikes oriented subparallel to regional structure.	Moderate width: 2 to 9 ft. length: 500 to 1,500 ft. depth: unknown. Maximum probable reserves 350,000 tons	Low Select samples contain up to 4 pct antimony but average grade over the full width of the K & T deposit is less than 1 pct.	Pyrite.	Valdez Group slate and metasilstone.	Stibnite occurs as isolated grains and massive stringers in the quartz.	No production.	K & T Antimony (S-236) Black Devil (S-238)
5. Chromite	Reported to occur in the marginal phases of gabbroic plutons and in shear zones in gabbro and serpentinized dunite.	Unknown.	Low: Samples containing up to 5000 ppm reported by USGS (186).	Lesser quantities of nickel in unknown form present.	Serpentinized dunite and gabbro.	Disseminated.	No production.	(S-186) (S-187) (S-188) (S-189)

and in granitic intrusives, such as those at the Granite Mine (S-147), can be similarly explained. Mineralized veins at the Granite Mine and elsewhere fill fractures in the granite indicating that they postdate the intrusions, but additional work will be needed to fully understand their genesis.

Copper (base metal) Deposits

Copper deposits of two types occur in the PSA (table 4 - 2a and 2b). A single sedimentary-hosted massive sulfide vein deposit occurs near Lynx Creek in the north central Kenai Peninsula (S-272) and several volcanic-hosted massive/disseminated sulfide deposits occur on the Resurrection Peninsula southeast of Seward, Alaska (S-190, S-195, BS-12). Additional work is needed before suggesting an origin for these deposits. Detailed descriptions of the copper prospects are given in appendices B and C.

Molybdenum Deposits

Two types of molybdenum deposits have been identified in the PSA (table 4, - 3a and 3b). Disseminated and fracture controlled molybdenum mineralization is associated with the Billings Glacier stock (S-169) and molybdenite-chalcopyrite-bearing veins occur in the Crow Pass area (A-38 and 39). Detailed descriptions of these occurrences are given in appendices A and C.

Antimony Deposits

Stibnite occurs as an accessory mineral in several gold/silver quartz veins within the study area (S-147, S-152, S-281), as the primary sulfide in quartz veins recementing felsic dikes in the Kenai Lake area (S-236, S-238) (table 4 - 4b) and in quartz veins and fractures in a well-defined shear zone on Barry Arm (A-27) (table 4 - 4a). These deposits are discussed in more detail in appendices A and C.

Chromium Deposits

Geochemically anomalous values of chromium (up to 5,000 ppm) have been reported from several locations on the Resurrection Peninsula by Tysdal and Case (184) (table 4 - 5). The chrome is believed to occur as disseminated chromite in altered gabbro and dunite bodies (see Appendix B for details).

Production and Reserves

Lode mineral production has been restricted to gold and by-product silver from several small mines. Gold production figures for the PSA have been compiled from records maintained by the Bureau, USGS reports, smelter returns, and company data. In some cases order of magnitude estimates of production have been made based upon grades indicated from sampling and the extent of mine workings. Reported production figures are believed to be less than the actual production

for several of the mines examined since the amount of workings indicate considerably more tonnage was mined. Records are totally lacking for some old mines which are believed to have had minor production.

Table 5 summarizes the estimated lode gold/silver production by regions within the PSA.

TABLE 5. - Estimated lode gold and silver production from the PENINSULA study area (1899-1983)

District	Northeastern Kenai Peninsula		Girdwood		Port Wells	
	Gold	Silver	Gold	Silver	Gold	Silver
Estimated Lode Production (oz)	25,000	10,000	5,000	1,200	40,000	4,000
Documented Lode Production (oz)	[21,243]	[8,440]	[4,991]	[1,017]	[28,655]	[3,245]

A summary of recorded gold/silver production for individual lode mines is compiled on table 6. Total estimated lode production from the PSA is 70,000 oz gold and 15,200 oz silver.

The Granite Mine (S-147) was the largest lode gold producer in the PSA and accounts for nearly 50 pct of the total recorded lode gold production.

Identified resources are listed on table 6 for mines and deposits classified as having moderate to high mineral development potential along with their production data. The resources have been calculated using the half square technique and the weighted average grade of samples collected at each deposit. Identified resources have been determined only for those deposits having adequate sample data. Identified resources for these deposits total 111,410 tons. The Crown Point (S-227), Skeen-Lechner (S-228), East Point (S-226), Summit (S-254), and Monarch-Jewel (A-38, A-37) have the largest resources and highest grades.

Mineral Development Potential

Lode Gold-Silver Deposits

Portions of the PSA have moderate and/or high mineral development potential for small high grade quartz vein deposits and possibly for low grade large tonnage deposits associated with felsic dikes. Several high-grade deposits in the PSA may be of sufficient size to collectively supply a small milling operation (less than 50 tons/day). Areas rated as having moderate to high potential for containing mineralization capable of supporting a small lode gold mine are listed on table 7. Additional areas which merit further prospecting include the Kings River, Gulch Creek-Seattle Creek, Groundhog Creek-Mills Creek-Lynx Creek drainage basins and the region north and east of Coghill Lake and Unakwik Peak.

Gold quartz veins spacially associated with granitic intrusives (1c) and felsic dikes (1a & b) tend to have the greatest past production and potential for identified resources. Two properties in the Port Wells area have some mill tailings potentially suitable for cyanide leaching (Granite Mine, S-147 and Mineral King Mine, S-156).

TABLE 6. - Recorded gold and silver production and identified resources for lode mines and prospects located in the PENINSULA study area.

Mine (Loc. #)	Area	Recorded Production (oz)		Years of Production	Identified Resources (tons)	Grade	
		Au	Ag			oz/t Au	oz/t Ag
Granite Mine (S-147)	Port Wells	24,440	2,492	1914-18, 1921-24, 1930, 1934-37, 1940-46, 1963-64	1,900	0.78	
Hirshy Lucky Strike (S-289)	Kenai Penin.	6,094	4,699	1914-26, 1928-33, 1935-39	2,000	1.25	0.65
Monarch-Jewel (A-38, A-37)	Girdwood	4,933	996	1909, 1926, 1928, 1933-42, 1945, 1947	3,100	2	1
Gilpatrick S-253)	Kenai Penin.	3,545	1,099	1914, 1916, 1919, 1937-41, 1944-48	2,000	0.89	0.65
Crown Point (S-227)	Kenai Penin.	3,425	634	1911-16, 1935-40	30,000	0.37	0.1
Mineral King (S-156)	Port Wells	2,783	626	1913, 1928-39	500	0.012	1/ ND
Skeen Lechner (S-225)	Kenai Penin.	1,786	507	1912-15, 1937, 1942-43, 1946-50	10,000	0.82	0.3
East Point (S-226)	Kenai Penin.	1,725	479	1928, 1940-41, 1945, 1954-56	3,700	2.35	0.5
Heaston Oracle (S-255)	Kenai Penin.	2/ 1,274	256	1921, 1930-33, 1937-40	ND	ND	ND
Case Solars (Grant Lake) (S-231)	Kenai Penin.	792	123	1914-16, 1924, 1933-40, 1949	270	0.78	0.2
Primrose (S-214)	Kenai Penin.	2/ 659	138	1912-19, 1929, 1932, 1935	1,300	1.42	0.6
Ronan & James (S-256)	Kenai Penin.	557	137	1916-18, 1931, 1938-40	ND	ND	ND
Portage Mine (S-168)	Port Wells	490	60	1935-40	10,000	0.6	ND

TABLE 6. - Recorded gold and silver production and identified resources for lode mines and prospects located in the PENINSULA study area -- Continued

Mine (Loc. #)	Area	Recorded Production (oz)		Years of Production	Identified Resources (tons)	Grade	
		Au	Ag			oz/t Au	oz/t Ag
Hirshy & Carlson (S-292)	Kenai Penin.	408	24	1911 various to 1940	500	0.5	0.3
Sunshine Mine (S-293)	Kenai Penin.	347	5	1922-33	350	0.1	ND
Tomboy Ledge (S-162)	Port Wells	219	9	1912-14, 1930-41	300	0.3	0.06
Downing Mine (S-297)	Kenai Penin.	150			ND	ND	ND
Indian Creek (S-315)	Kenai Penin.	124	295	1915, 1921-22	ND	ND	ND
Nearhouse & Smith (S-299)	Kenai Penin.	102	3	1925, 1937-40	6,400	0.2	0.3
Swetmann-New Hope (S-242)	Kenai Penin.	94	24	1936-40	500	ND	ND
Alaska Homestake A-30)	Harri- man Fiord	83	33	1917	ND	ND	ND
Lansing Mine (S-163)	Port Wells	81	24	1913, 1938-39	500	0.1	0.02
Falls Creek Mine 3/ (S-224)	Kenai Penin.	65	13	1911-15, 1946-49, 1955	ND	ND	ND
Seward Bonanza (S-221)	Kenai Penin.	65		1929	7,400	0.023	0.225
Bahrenberg (A-40)	Gird- wood	54	21	1928-29, 1941	340	1.53	2.2
Golden Eagle (S-129)	Port Wells	28	1	1911, 1948	21,000	0.1	ND
Kenai Lu (S-312)	Kenai Penin.	25		Pre 1915	ND	ND	ND
Kenai Star (S-296)	Kenai Penin.	24		1922	ND	ND	ND

TABLE 6. - Recorded gold and silver production and identified resources for lode mines and prospects located in the PENINSULA study area -- Continued

Mine (Loc. #)	Area	Recorded Production (oz)		Years of Production	Identified Resources (tons)	Grade	
		Au	Ag			oz/t Au	oz/t Ag
Morning Star (S-142)	Port Wells	20		1914	ND	ND	ND
Independence (S-264)	Kenai Penin.	8	4	1931, 1934-35	ND	ND	ND
Sweepstake (S-152)	Port Wells	6		1912, 1937, 1945	ND	ND	ND
Brewster (S-271)	Port Wells	5		Pre 1930	ND	ND	ND
Bird Point (S-316)	Gird-wood	5		1912-17	ND	ND	ND
Johnson & Skeen (S-262)	Kenai Penin.	4		1914	ND	ND	ND
Mountain (S-133)	Port Wells	---	---	---	500 tons	0.7	ND
Nugget (S-136)	Port Wells	---	---	---	900 tons	0.3	LO.1
Sweepstake (S-140)	Port Wells	---	---	---	500 tons	0.3	0.3
Singletary- O'Neill (S-153)	Port	---	---	---	1,250 tons	0.1	0.1
George and McFarland (S-157)	Port	---	---	---	500 tons	0.3	0.24
Mizpah Ledge (S-209)	Kenai Penin.	---	---	---	10 tons	1.0	0.5
Brewer-Alaska (S-205)	Kenai Penin.	---	---	---	1100 tons	0.3	0.3
Andy Simons (S-222)	Kenai Penin.	---	---	---	50 tons	0.076	0.2
McMillan Mine (S-249)	Kenai Penin.	---	---	---	250 tons	0.54	0.34

TABLE 6. - Recorded gold and silver production and identified resources for lode mines and prospects located in the PENINSULA study area -- Continued

Mine (Loc. #)	Area	Recorded Production (oz)		Years of Production	Identified Resources (tons)	Grade	
		Au	Ag			oz/t Au	oz/t Ag
Summit Vein (S-254)	Kenai Penin.	---	---	----	3400 tons	1.3	0.8
Shell Mine (S-266)	Kenai Penin.	---	---	----	420 tons	0.4	0.3
Gulch Creek #1 (S-281)	Kenai Penin.	---	---	----	200 tons	0.1	20
TOTAL		54,152	12,702		110,810		

1/ ND - not determined

2/ Higher production likely

3/ Reported production for 1911 only, production believed to be partially included with Skeen-Lechner Mine.

TABLE 7. - Lode mineral development potential, PENINSULA study area
Chugach National Forest, Alaska

Area	Approximate Location	Comments	Examples of Known Mines and Prospects
Crow Pass	T11N, R2E	High potential for developing known deposits into small mines. Some potential for locating new deposits.	Jewel (A-37) Monarch (A-38) Bahrenberg (A-40)
Hope-Summit Lake	T6N-9N, R1-2W	High potential for developing known properties into small mines. Some potential for locating new deposits.	Gilpatrick (S-253) Summit (S-254) Oracle (S-255) Hirshey (S-289) Nearhouse (S-299)
Moose Pass	T3-5N, R1E	High potential for developing known deposits into small mines. Some potential for locating new deposits.	Falls Creek (S-224) Skeen Lechner (S-225) East Point (S-226) Crown Point (S-227) Case (S-231)
Primrose-Lost Lake	T2-3N, R1W	Possibly high potential for developing the Primrose Mine (S-214) into a small mine. High potential for finding new deposits.	Brewer AK (S-205) Primrose (S-214)
Port Wells	T9-10W, R5-7E	High potential for cyanide leaching of old tailings at the Granite Mine (S-147) and possibly the Mineral King Mine (S-156). High potential for developing known deposits into small mines and some for finding new ones.	Granite (S-147) Mineral King (S-156) Portage (S-168)
Dartmouth Glacier	T12-13N, R10E	High potential for finding additional precious metal deposits.	Unnamed (A-16)
Golden	T10-11N, R8-9N	Moderate potential for developing known deposits and finding new ones.	Golden Eagle (S-129) Mountain (S-133) Nugget (S-136) Sweepstake (S-140)
Harriman Fiord	T11-12N, R6-7E	Moderate potential for developing known deposits and finding new ones.	Alaska Homestake (A-31)

TABLE 7. - Lode mineral development potential, PENINSULA study area
Chugach National Forest, Alaska -- Continued

Area	Approximate Location	Comments	Examples of Known Mines and Prospects
Gulch Creek	T8-9N, R1E	Moderate potential for identifying additional silver and gold deposits.	Gulch Creek (S-280)
Passage Canal	T9N, R5-6E	High potential for developing known deposit of specimen grade quartz crystals. Moderate potential for developing known precious metal lodes and finding new ones. Low potential for developing molybdenum deposit.	Portage Mine (S-168) Billings Glacier (S-169, 170)

Other Metallic Mineral Deposits

The potential for identifying economically recoverable deposits of other metals within the PSA is thought to be relatively low. However, the presence of molybdenum occurrences associated with intrusives near Crow Pass and Billings Glacier suggest the need for reevaluating the mineral development potential of intrusives in the region. Also, some mineral development potential exists for copper mineralization in the Lynx Creek area, copper and chromium on the Resurrection Peninsula, tungsten at Billings Glacier, and antimony in the Barry Arm and Kenai Lake areas.

PLACER GOLD DEPOSITS

Types

Placer gold deposits within the PSA have been classified into four categories: (1) alluvial placers; (2) bench placers; (3) eluvial placers; and (4) glacial placers. Table 8 summarizes their general characteristics and production history and lists examples of each type. More detailed descriptions of the major producing drainages and brief descriptions of other streams having placer potential are given in appendix D. Placer drainages are located on figure 14.

Placer gold appears to have been derived from glacial erosion and fluvial concentration of gold from numerous small high-grade epigenetic lode gold deposits located in the PSA. Bedrock in the region has been extensively eroded by glaciers at least five times during the Pleistocene (94). Gold placers were likely developed during preglacial and interglacial stages as well as since the last glacial advance. Preservation of preglacial and interglacial placers is largely dependent upon their location relative to later glacial scour. Preserved placers recognized by their relative high degree of compaction and cementation, have been identified along Crow (P-93), Mills (P-79) and possibly Quartz Creeks (P-81). The time elapsed since the last glacial stage and minor postglacial advances has been insufficient to allow the development of large high-grade placer deposits such as those found in interior Alaska. The existing deposits occur as small, occasionally rich, placers in current stream valleys.

Placer gold found in the PSA is generally fine grained (less than 0.08 in.) and flaky. However, coarser gold, including nuggets weighing up to several ounces, has been recovered from Crow (P-93), Gulch (P-73) and Bear (P-91) Creeks. Placer gold fineness ranges from 770 to 850 in most drainages though that in Bear (P-91), Crow (P-93), and Winner (P-94) Creeks is only about 700 fine. Gold to silver ratios determined for gold recovered from several placer samples are listed along with their respective gold, silver, and base metal contents on table 9. Examination of the data shows that gold samples collected from several drainages including Cooper (P-86) and Quartz (P-81) Creeks have variable gold contents (572 to 820 fine) and gold:silver ratios (3.7:1 to 18.3:1). Many placer samples examined under the microscope appear to contain more than one type gold as distinguished on the basis of color and shape. These data suggest that gold is provided from multiple source areas in these drainages or that the gold has been provided by multiple erosional/transport cycles.

TABLE 8. - Summary of placer deposit types in the PENINSULA Study area

Deposit Type	General Characteristics	2/ Size	3/ Grade	Gold Character- istics	Production History	Development Potential
1. Alluvial Placers	Gravel deposits resulting from the depositional and sorting processes of existing streams. Include gravel bars, channel deposits, flood plain deposits, and alluvial fans.					
a. Gravel Bars	Relatively loose sandy moderately sorted gravel. Pay streaks often discontinuous and confined to near surface accumulations of flood gold. ^{1/}	Small. Typical bars may contain up to 10,000 yd ³ .	Low to High. Up to 0.14 oz gold/yd ³ recovered from samples collected. Production grades of 0.01 to 0.02 oz gold/yd ³ reported. Low grades (0.003 oz gold/yd ³) have been identified on the Kings (P-46), Snow (P-50), and Trail (P-58) rivers	Gold is typically fine-grained (0.04 in diameter) and flaky (readily floats on water).	Gravel bars have been mined using small mechanized equipment on Sixmile (P-72), Canyon (P-76), Mills (P-79), Crescent (P-83), and Resurrection (P-90) creeks.	Additional deposits have been identified on most streams having previous production history and also on the Kings (P-46), Snow (P-50), Trail (P-58), and Kenai (P-8/) rivers. Large suction dredges (68 in.) might have success mining these deposits. However, highly efficient gold recovery techniques will be needed to adequately recover the gold due to its size and shape.
b. Channel Deposits	Stratified gravels consisting of relatively loose sandy actively migrating gravels resting upon moderately consolidated clay-bearing gravels with angular bedrock fragments and boulders on bedrock.	Very small. Deposits are small and discontinuous. High-grade pockets typically contain 100 yd ³ .	High. Production grades for suction dredges of 0.05 to 0.5 oz gold/yd ³ are not unusual.	Gold is fine grained near the surface with increasing size and weight on bedrock. Coarse flakes and small nuggets up to 1/2 oz or more may be recovered within the clayey consolidated layer and in bedrock fractures.	Suction dredges have been successfully used to mine these deposits on Mills (P-79), Canyon (P-76), Resurrection (P-90), Gulch (P-73), Sixmile (P-72), Crow (P-93), Cooper (P-86), Bertha (P-64) and several other drainages on the Kenai Peninsula. Recovery of 1/4 to several oz per day have been reported depending upon dredge size, water conditions and ore concentrations.	Suction dredging will continue on previously mined drainages. Additional areas could include the Kings (P-46), Placer (P-59), Trail (P-58), Avery (P-36), Crescent (P-83), Falls (P-55), Seattle (P-70), and Ship (P-54) creeks.

^{1/}Flood gold consists of small (0.01 in.) very thin flakes readily transported by streams during flood condition. The gold is commonly deposited near the surface and at the head of gravel bars. Values commonly do not persist at depth.

TABLE 8. - Summary of placer deposit types in the PENINSULA Study area -- Continued

Deposit Type	General Characteristics	2/ Size	3/ Grade	Gold Character- istics	Production History	Development Potential
c. Flood Plain Deposits	Deposits tend to consist of poorly sorted moderately-consolidated, stratified gravels containing a significant clay-silt matrix resting directly on bedrock or, as at portions of Resurrection Creek (P-90), upon clay hard pan.	Small to large. (depending upon drainage). Greater than one million yd ³ of gravel occur along the Kings (P-46), Trail (P-58), Kenai (P-8), and Snow (P-50) rivers and on Resurrection (P-90), Sixmile (P-72), and Upper Crow (P-93) creeks.	Medium. These deposits have variable grades with highest grades occurring in previous channels. Production grades of 0.008 to 0.02 oz gold/yd ³ have been reported.	Gold is mostly fine grained and flaky with some coarsening to be expected on bedrock. Nuggets up to 1 1/2 oz or more have been recovered from a few streams.	A significant portion (50 pct +) of the total placer gold production from the Kenai Peninsula has come from this type of deposit. Mined on Resurrection (P-90), Bear (P-91), Crow (P-93), Mills (P-79), Canyon (P-76), Sixmile (P-72), Crescent (P-83) and other creeks. Historically these deposits were first mined by pick and shovel, followed by hydraulic techniques and most recently by mechanized methods.	Continued placer mining can be anticipated on the historically mined drainages. New and/or additional operations involving flood plain deposits could develop upon the Kings (P-46), Trail (P-58), Placer (P-59), and Avery (P-36) rivers and on Billings (P-41), and Seattle (P-70) creeks should gold prices rise significantly. Mining will require using mechanized equipment with refined recovery techniques capable of efficiently recovering L60 mesh ^{2/} gold.
d. Alluvial Fan Deposits	Alluvial fans develop where streams having relatively steep gradients develop more gradual gradients. Such deposits on the Kenai Peninsula consist of poorly sorted, unconsolidated gravels with a moderate to high clay content occurring in fan-like patterns.	Small to Medium. Typical alluvial fans consist of 250,000 yd ³ or less. Larger fans containing one deposit in excess of but Bureau 11 million yd ³ occur at the mouth of Lynx (P-61), Silvertip (P-75), and Bear (P-91) creeks.	Low to Medium. Production grades of 0.01 to 0.02 oz gold/yd ³ have been reported from one deposit in excess of but Bureau sampling indicates grades are generally 0.005 oz gold/yd ³ .	Gold is generally fine-grained and flaky with particles 60.08-in. rare. The gold occurs in distributary channels and is commonly present from surface to bedrock.	Limited amounts of gold have been produced from this type of deposit. Production has occurred from alluvial fans formed by western tributaries to Sixmile Creek (P-72), at Bertha Creek (P-64) and more recently from Hargood Creek (P-82). Portions of the bench deposits on Lower Crow Creek (P-93) must appear to be alluvial fan deposits but they have been classified as bench deposits.	Alluvial fans previously mined may be mined in the future. Fans needing further evaluation occur on Lynx (P-61), Silvertip (P-75), Ship (P-54), Bear (P-91) and possibly several other drainages on the Kenai Peninsula. The tendency for gold to occur in channels within the fan deposits must be considered for proper evaluation.

^{2/}mesh: refers to the number of openings per square inch of screen

TABLE 8. - Summary of placer deposit types in the PENINSULA Study area -- Continued

Deposit Type	General Characteristics	2/ Size	3/ Grade	Gold Character- istics	Production History	Development Potential
2. Bench Deposits	Deposited by streams at higher elevations within present valleys prior to formation of the more deeply eroded active stream channels of today. Some of these deposits which include abandoned channels were apparently deposited during interglacial periods prior to the most recent advance. Gravels tend to be poorly to moderately well-stratified, poorly sorted, and moderately well-consolidated. Benches occur at levels of a few feet to more than 150 ft above current streams. Bench gravels are often covered by avalanche debris.	Small to Large. Benches containing in excess of 1 million yd ³ identified on several drainages including: Resurrection (P-90), Sixmile (P-72), and Canyon (P-76) creeks. Significant (G200,000) yd ³ volumes of bench gravels also occur on the deposits Crow (P-93), Mills (P-79), Quartz (P-81) and possibly on Lynx (P-61), Hargood (P-82), Stetson (P-85), Seattle (P-70) and Winner (P-94)	Low to Medium. Bench gravels tend to be lower in grade but have been conducive to mining using relatively high volume, low cost hydraulic methods. Production grades of 0.005 to 0.04 oz gold have been reported. Lower grades are likely for the bulk of the deposits identified. Samples collected from Canyon Creek and East Fork Creek benches range from 0.004 to 0.016 oz gold.	Gold is generally less than 0.1 in. in diameter and flaky with local exceptions such as on Crow Creek where nuggets up to 1 oz have been recovered.	Bench deposits have supplied a significant portion (up to 50 pct) of the total placer gold production from the Kenai Peninsula. The majority came from 2 drainages: Crow Creek (P-93) and the junction area of Canyon and Mills Creek (P-76). Additional production has come from Resurrection (P-90), Sixmile (P-72), East Fork and Gulch (P-73), Quartz (P-81), Cooper (P-86), Stetson (P-85), and Lynx (P-61) creeks.	Future mining of bench deposits may occur on historically mined drainages. Hydraulic mining will likely be replaced by mechanized methods for larger deposits. Small high grade deposits may be mined using pumps to supply water.
3. Eluvial Deposits	Concentration of heavy minerals due to the winnowing action of gravity and downhill creep. Occur as irregular sheets of angular rock fragments and soil mantling hillside slopes below gold-bearing quartz veins.	No data.	Low. Economic concentrations have not yet been located.	Gold is reported to be rough, nuggety and fine grained. Coarse gold (0.1 in) has not been identified.	None. The Grant Lake Development Co. sampled for eluvial placer potential below the Case Mine (S-231) but could not identify economic concentrations.	Exploration activity, possibly followed by mining if warranted, might be anticipated on slopes below exposed gold-bearing quartz veins such as those occurring on the north side of Falls Creek (P-55), on the steep slopes between Summit and Slate Creeks, the Crow Pass area near Girdwood, and along Palmer Creek near Hope.

TABLE 8. - Summary of placer deposit types in the PENINSULA Study area -- Continued

Deposit Type	General Characteristics	<u>2/</u> Size	<u>3/</u> Grade	Gold Character- istics	Production History	Development Potential
4. Glacial Deposits	Consist mostly of till or very poorly washed largely unstratified gravels containing abundant clay and angular rock fragments. These deposits often form steep cut banks up to 200 ft high where eroded by subsequent stream action as at the mouths of Juneau (P-77) and Palmer (P-90) creeks.	Small to Large.	Low. Economic con- centrations were not identified.	Gold is dissemi- nated throughout these depo- sits and is best descri- bed as being very fine grained and thin (flour gold).	Minor production may have come from what are believed to be mostly till deposits near the mouth of Juneau Creek (P-77). Alluvial placers produced from the erosion of large recessional moraines such as at Palmer- Resurrection Creek and Mills- Canyon Creek junctions have been previously discussed.	Some potential for exploration or mining of glacial placers may exist along portions of Crow (P-93), lower Juneau (P-77), and Palmer (P-90) creeks. However these deposits may be a source of gold which can become concentra- ted into alluvial placers.

2/Size

Small L 100,000 yd³.
Medium 100,000 - 1,000,000 yd³.
Large G 1,000,000 yd³.

3/Grade

Low L 0.05 oz gold/yd³.
Medium 0.05 - 0.02 oz gold/yd³.
High G 0.02 oz gold/yd³.

TABLE 9. - Composition and Gold to Silver Ratios of Placer Gold
Collected from the PENINSULA study area

Stream Name	Location No.	Sample # ^{2/}	Composition			Gold/Silver Ratio
			Gold	Silver	Base	
Avery River	P36	5453	822	73	105	11.3
Bear Creek	P91	5872	697	267	36	2.6
Bertha Creek	P64	4912	773	215	12	3.6
Bertha Creek	P64	5519	777	100	123	7.8
Billings Creek		7222	664	157	179	4.2
Canyon Creek	P76	4752	840	96	64	8.8
Canyon Creek	P76	4753	855	93	52	9.2
Coghill River	P38	5439	799	83	118	9.6
Colorado Creek	P80	5667	680	278	42	2.4
Cooper Creek	P86	4805	572	156	272	3.7
Cooper Creek	P86	4841	820	136	44	6
Cooper Creek	P86	5256	770	42	188	18.3
Crescent Creek	P83	5260	770	82	147	9.4
Crescent Creek	P83	5261	770	124	106	6.2
Crescent Creek	P83	5262	818	64	118	12.8
Crescent Creek	P83	5356	773	111	116	7
Crow Creek	P93	4736	711	154	135	4.6
Crow Creek	P93	4737	744	206	50	3.6
Crow Creek	P93	4739	719	209	72	3.4
Crow Creek	P93	4740	706	248	46	2.8
Crow Creek	P93	4743	729	246	25	3
Crow Creek	P93	4744	715	206	79	3.5
Cub Creek	P72	5877	745	62	193	12
East Fork Creek	P73	4921	800	106	94	7.5
East Fork Creek	P73	4926	789	107	104	7.4
East Fork Creek	P73	4927	788	108	103	7.3
East Fork Creek	P73	4928	810	85	105	9.5
East Fork Creek	P73	4929	797	154	49	5.2
East Fork Creek	P73	5511	802	130	68	6.2
East Fork Creek	P73	5512	802	118	80	6.8
Falls Creek (C8)1/	P88	4848	808	23	169	35.1
Falls Creek (B7)T/	P55	4858	776	127	97	6.1
Falls Creek (B7)T/	P55	5305	803			
Granite Creek	P74	2481	803	96	101	8.4
Granite Creek	P74	2486	785	89	126	8.8

TABLE 9. - Composition and Gold to Silver Ratios of Placer Gold
Collected from the PENINSULA study area

Stream Name	Location No.	Sample # ^{2/}	Composition			Gold/Silver Ratio
			Gold	Silver	Base	
Grant Lake Headwaters	P56	7160	779	37	182	21
Gulch Creek	P73	2487	786	47	167	16.7
Gulch Creek	P73	2488	810	53	137	15.3
Gulch Creek	P73	2489	810	86	104	9.4
Gulch Creek	P73	5868	761	110	129	6.9
Hargood Creek	P82	5835	804	186	10	4.3
Hargood Creek	P82	5836	731	215	54	3.4
Hargood Creek	P82	5837	764	211	25	3.6
Ingram Creek	P69	2483	756	86	158	8.8
Kenai River	P87	4733	814	106	80	7.7
Kenai River	P87	4915	860	80	60	10.8
Kenai River	P87	4916	826	111	63	7.4
Kings River Trib.	P47	5316	742	94	168	7.9
Kings River	P46	5373	812	100	88	8.1
Kings River	P46	5379	827	104	69	8
Lynx Creek	P61	2480B	829	75	96	11.1
Lynx Creek	P61	2480D	807	104	89	7.8
Lynx Creek	P61	5604	770	227	3	3.4
Lynx Creek	P61	5605	846	131	23	6.5
Lyon Creek	P66	2485	771	100	129	7.7
Martin Creek	P53	5744A	807	174	19	4.6
Martin Creek	P53	5744B	829	67	104	12.4
Martin Creek	P53	7128	808			----
Martin Creek	P53	7129	806	36	158	22.4
Martin Creek	P53	7130	819	61	120	13.4
Mills Creek	P79	5879	834	98	68	8.5
Mills Creek	P79	7111B	840	69	91	12.2
Mills Creek	P79	7113	854	19	127	45
Mills Creek	P79	7115	828	72	100	11.5
Mills Creek	P79	7200	831	43	126	19.3
Placer River	P59	5580	752	225	22	3.3
Quartz Creek	P81	4820	747	144	109	5.2
Quartz Creek	P81	5522	795	122	83	6.5
Quartz Creek	P81	5523	817	97	86	8.4
Resurrection Creek	P90	4911	837	117	46	7.2

TABLE 9. - Composition and Gold to Silver Ratios of Placer Gold
Collected from the PENINSULA study area

Stream Name	Location No.	Sample # ^{2/}	Composition			Gold/Silver Ratio
			Gold	Silver	Base	
Seattle Creek	P70	5530	735	96	169	7.7
Ship Creek	P54	2494	759	76	165	10
Ship Creek	P54	5745A	824	57	119	14.5
Silvertip Creek	P75	4918	780	156	64	5
Sixmile Creek	P72	4923	814	119	67	6.8
Sixmile Creek	P72	4925	784	100	116	7.8
Sixmile Creek	P72	5878	874	36	90	24.3
Stetson Creek	P85	5340	835	53	112	15.8
Taylor Glacier	P44	5730	677	238	85	2.8
Tincan Creek	P67	2484	768	136	96	5.6
Twentymile River	P97	5766	871	58	71	15
Twentymile River	P97	7223	839	24	137	35
Twentymile River	P97	7224	805			
Twentymile River	P97	7231	810			
Victor Creek	P51	4860	745	111	144	6.7
Walker Creek	P72	2491	828	16	156	51.8
Winner Creek	P94	4746	716	213	72	3.4
Winner Creek	P94	4748	709	229	63	3.1
Wolverine Creek	P68	2482B	748	68	184	11

1/ Refers to the Seward 1:63,360 USGS quadrangle map which creek is located on.

2/ Sample numbers refer to locations plotted on figure 14.

TABLE 10. - Estimated placer gold production and reserves for the PENINSULA study area by decade and drainage

Drainage	Loc. #	Pre 1910	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79	1980-82	TOTAL	Identified Resources (yd ³)
Crow Creek	P93	23,000+	5,000+	8,000+	5,000+	500+	500+	100+	100+	250-450	42,500+	1,000,000+
Canyon-Mills Creek	P76,79	25,000	10,000	3,000	2,000	100	500	L100	200-500	850-1150	41,700+	2,000,000+
Resurrection-Palmer Creek	P90	8,000+	3,000+	1,000	8,000+	1,000+	1,000+	1,000+	2,000+	1800-2600	26,800+	2,000,000+
Lynx Creek	P61	5,000+	500+	L500	500+	L500	1,000+	L500	500+	L50	7,500+	1,000,000+
Bear Creek	P91	2,000+		1,000	1,000				500+	500+	5,000+	1,000,000+
Gulch - East Fork Creek	P73	1,500+	500+						100+	50-100	2,150+	Undetermined
Sixmile Creek	P72	1,000+	500+		100+				100+	50-100	1,750+	3,000,000+
Cooper-Stetson Creek	P85, P86	300+	1,000+						L100	50-100	1,350+	Undetermined
Quartz Creek	P81	300+	100+						100+	300-400	800+	750,000
Bertha Creek	P64	500+	200+						Some	L50	700+	Undetermined
Silvertip Creek	P75	250+	100+				100+		100+	100-150	650+	1,000,000+
Crescent Creek	P83	Some	Some							350-500	350+	Undetermined
Other drainages		500	500	50	50				50	550-650	1,750	Undetermined
TOTAL		67,450+	21,500+	13,000+	16,600+	1,600+	3,100+	1,100+	3,800+	4950-6800	*133,000+	11,750,000+

* Rounded to nearest 1000 ounces.

Additional work is needed to relate placer gold deposits more specifically to source area(s) and to determine whether gold to silver ratios can be related to distance from source.

Production and Reserves

Placer gold production in the PSA came mostly from streams located in the northern portion of the Kenai Peninsula and Girdwood areas. The total estimated placer gold production is summarized on table 10 by drainage and decade. Placer gold production for 1980 to 1982 is estimated to have ranged from 900 to 2650 oz/yr (table 11).

Order of magnitude resource estimates for placer gold bearing gravels remaining on past producing drainages have been attempted for purposes of indicating the size and distribution of placer deposits. These estimates were made by multiplying the length of the stream section being evaluated by the average width of the flood plain as identified from available maps and information obtained during field traverses, times the average estimated depth. Depths used are based on field observation as much as possible. The identified resources remaining on past producing drainages exceeds 11,750,000 yd³. The largest resources occur on Sixmile (P-72), Canyon (P-76), Mills (P-79), and Resurrection-Palmer (P-90) Creeks. Identified resources for several additional nonproducing drainages are given in appendix C.

Mineral Development Potential

Many drainages in the PSA are moderately to highly favorable for development of placer gold deposits. The best have been and/or

TABLE 11. - Estimated placer gold production for the PENINSULA study area during 1980, 1981, and 1982.

Stream Names	Estimated Production (Troy oz)		
	1980	1981	1982
Resurrection Creek, Bear Creek	1,000 - 1,300	900 - 1,200	400 - 600
Canyon Creek, Mills Creek	300 - 400	350 - 450	200 - 300
Quartz Creek, Crescent Creek Hargood Creek	150 - 200	400 - 500	100 - 200
Crow Creek	50 - 100	100 - 150	100 - 200
Miscellaneous (East Fork and Sixmile, Falls, Stetson and Copper, Lynx, Gulch Silvertip Creeks)	150 - 250	250 - 350	100 - 200
TOTAL (oz)	1,650 - 2,250	2,000 - 2,650	900 - 1,500

are currently being mined commercially (defined in this report as capable of sustained production at a rate exceeding 50 yd³/d).

These include Falls (P-55), Lynx (P-61), Sixmile (P-72), Gulch-East Fork (P-73), Silvertip (P-75), Canyon (P-76), Mills (P-79), Quartz (P-81), Hargood (P-82), Crescent (P-83), Cooper (P-86), Resurrection (P-90), Bear (P-91), Crow (P-93), and Winner (P-94) Creeks and the Kenai River (P-87). Additional streams having moderate or high mineral development potential for placer gold include the Avery (P-36), Northwest Fork Coghill (P-38), Kings (P-46), and Placer (P-59) rivers and Siwash Bay (P-34), Martin (P-53), Ship (P-54), Lyon (P-66), Tincan (P-67), and Seattle (P-70) Creeks.

The discovery of significant quantities of new high grade (greater than 0.02 oz gold/yd³) placer deposits is not anticipated to occur in the PSA. However, if gold prices increase (to levels of approximately \$800-1,000/oz or more), large volumes of currently subeconomic-marginal grade placers (0.003-0.01 oz gold/yd³) such as the benches on Sixmile (P-72), Canyon (P-76), Mills (P-79), Resurrection (P-90), and Crow (P-93) Creeks could be developed. Some possibility exists for the discovery of locally high grade abandoned channels within the bench deposits.

CONSTRUCTION MATERIALS

Types

Construction materials include bedrock suitable for a variety of uses and sand and gravel used primarily as fill. Deposit locations referred to in the text are shown on figure 14.

Bedrock Deposits

Metasandstone has been quarried for use as riprap, fireplace facing stone, foundation stone and the construction of rock panels. Several currently or recently active sources are described in appendix C (S-278, S-309, S-317, and S-322).

Several igneous dikes have recently been located as sources of building stone. These are also described in appendix C (S-305, S-306, and S-308).

Slate has been quarried near Kenai Lake for use in the construction of rock panels and has been located upon for use as haydite (expandable aggregate) near Moose Pass (see appendix C S-322, S-232).

A limestone deposit suitable for use as a source of agricultural lime and possibly as a building stone is currently being developed in the vicinity of Russian River (S-237). A similar but smaller deposit occurs near Seward (see appendix C, S-202).

The Bureau has located rock potentially suitable for a variety of construction uses throughout the PSA. However, most locations are too inaccessible to be considered as viable sources at the present time. An unusual and relatively accessible occurrence of interbedded red and green slate on Mills Creek (S-321), is described in more detail in appendix C. The Bureau identified specimen grade quartz crystals (S-170) in association with the Billings Glacier stock near Whittier, Alaska.

Sand and Gravel Deposits

Sand and gravel deposits occur along the current highway and railroad corridors in association with nearly all of the historic and potential placer gold producing drainages. Especially large volumes of gravel are associated with the Placer, Trail, Snow, Kenai, and Resurrection Rivers. Most deposits occur as flood plain and/or bench gravels, though alluvial fans, associated with Bertha, Spokane, and Silvertip Creeks, among others, have been exploited as local gravel sources for construction and maintenance of the highway system.

Production and Reserves

Small quantities of common variety mineral deposits have been produced from the PSA and include rock used as building stone, facing stone, and riprap, and sand and gravel used primarily for fill. Larger but undetermined quantities of rock and sand and gravel have been produced from State or private sources within or adjacent to the CNF primarily in the Seward area.

Large reserves of rock suitable for riprap and construction purposes and sand and gravel deposits occur throughout the PSA. Use will be determined largely by need and project locations. Table 12 summarizes reserve estimates for a few of the rock sources identified within the study area. No attempt has been made to calculate reserves for sand and gravel deposits.

TABLE 12. - Identified resource estimates for bedrock industrial mineral deposits within the PENINSULA study area.

Location	Use	Amount Tons	Source
Rec 3-9 (S-232)	Haydite (expandable aggregate)	5 million+	(55)
Goodluck (S-237)	Agricultural Lime	96,000	(71)
Hope Road Quarry (S-309)	Fireplace Facing Stone	200	(68)
Silvertip Quarry (S-278)	Riprap	10,000	+ This report
Peterson Creek Quarry (S-317)	Fill, septic rock	10,000	+ This report
RS and S Quarry (S-322)	Rock panels, facing stone	73,000	(68)

Mineral Development Potential

Large resources of construction quality materials occur in the PSA. Present quarries and pits will continue production and new sources will be developed as the need arises in areas of high population and along the transportation corridors.

SUMMARY

This assessment of the PSA indicates that the area has high mineral development potential for placer gold and small lode gold deposits. New occurrences of precious metals, antimony, and molybdenum were identified.

PLACER DEPOSITS

Bulk placer sampling methods were highly effective in identifying medium to high grade (greater than 0.005 oz gold/yd³) placer deposits on historically producing streams. Samples containing gold concentrations ranging from 0.002 oz gold/yd³ or less to over 1 oz gold/yd³ were collected. Bulk samples collected from several drainages not previously known to have placer gold potential such as the Kings River, Cotterell, Taylor, and Claremont Glacier drainages located in the east central portion of the Kenai Peninsula, the Avery River, NW Fork Coghill River, Lafayette Glacier, and Crescent Glacier drainages located on the east side of Port Wells and an unnamed glacial drainage on the west side of Unakwik Inlet contained concentrations ranging from 0.002 to 0.01 oz gold/yd³.

LODE DEPOSITS

Sampling and evaluation of prospects and mines identified several which have high development potential as small lode gold mines (S-214, S-226, S-227, S-254, and S-289). Several of these small high-grade deposits may provide opportunities for small-scale mining and shipment of the ore to a central mill.

Bulk placer sampling suggests the presence of two potentially mineralized, north-northeast striking belts of metasediments in the PSA. These belts are composed of limonite stained Valdez Group metasediments cut by numerous felsic dikes and sills and sulfide-bearing quartz veins. One belt extends northeast from the toe of Wolverine Glacier along both sides of the Kings River to Blackstone Glacier. The second was traced twelve miles northeast from Davis Lake to the headwaters of Unakwik Inlet. The Dartmouth Glacier occurrence (A-16) and Kings River occurrence (S-183) are examples of two new lode deposits located by following up on anomalous placer data.

Traversing of potentially mineralized terrane, examination and sampling of color anomalies, and following up on stream sediment samples resulted in the discovery of several additional mineral occurrences including S-169 (molybdenum), S-170 (quartz crystals), S-222 (gold), S-234 (antimony), S-281 (silver), and S-283 (gold).

REFERENCES

1. Alaska Department of Mines. Report of the Commissioner of Mines for 1946.
2. ----- Report of the Commissioner of Mines for 1948.
3. ----- Report of the Commissioner of Mines for the Biennium ended December 31, 1950, 1950.
4. ----- Report of the Commissioner of Mines for 1952.
5. ----- Report of the Commissioner of Mines for 1954.
6. Alaska, Department of Natural Resources, Minfile Reference System, Anchorage, Seward, and Blying Sound Quadrangles, 1982.
7. Alyeska Chronicle. Girdwood Historical Times, v. 1, 1981.
8. Austin, A. E. Kenai River Dredging Propositions. Unpublished Letter to General Manager, Yukon Gold Co., 1913, available at U.S. Bureau of Mines, Anchorage Field Office.
9. Banta, H. E., and H. W. Jones. Carl M. Clark Claims Resurrection Creek - Seward Quadrangle. U.S. Forest Service Report of Mineral Examination, 1959.
10. ----- H. Deac Goodpaster Claims, Sixmile River. U.S. Forest Service Report of Mineral Examination, 1961.
11. Banta, H. E. Neva Placer Claim. U.S. Forest Service Report of Mineral Investigation, 1959.
12. ----- Wildhorse Placer Claims, Resurrection Creek. U.S. Forest Service Report of Mineral Examination, 1959.
13. ----- Little Rainy #1 and #2 Placer Claims, Quartz Creek U.S. Forest Service Report of Mineral Examination, 1960.
14. Barnes, F. F. Geology of the Portage Pass Area, Alaska. U.S. Geol. Surv. Bull., 926-A, 1943, pp. 211-236.
15. Barry, M. J. A History of Mining on the Kenai Peninsula, Alaska, Northwest Publishing Co., 1973, 214 pp.
16. Becker, G. F. Reconnaissance of the Gold Fields of Southern Alaska, with some Notes on General Geology. U.S. Geological Survey 18th Annual Report, pt. 3, 1898, pp. 1-86.
17. Beikman, H. M. Preliminary Map of the Southeast Quadrant of Alaska. U.S. Geol. Surv. Map MF-612, 1974.
18. Berg, H. C., and Cobb, E. H. Metalliferous Lode Deposits of Alaska. U.S. Geol. Surv. Bull. 1246, 1967, 254 pp.
19. Berger, B. R. Comparative Models of Epithermal Silver-Gold Deposits. Society of Mining Engineers AIME Preprint 82-13, 1981, 25 pp.
20. Boyle, R. W. The Geochemistry of Gold and its Deposits. Geol. Surv. of Canada Bull. 280, 1979, 584 pp.
21. Bradley, R. J. H. Report on the Property of the Crow Creek Alaska Hydraulic Gold Mining Company. Unpublished company report, 1910, available at U.S. Bureau of Mines, Anchorage Field Office.
22. Brooks, A. H. Report on Progress of Investigations of Mineral Resources in Alaska in 1904. U.S. Geol. Surv. Bull. 259, 1905, 196 pp.
23. ----- Report on Progress of Investigations of Mineral Resources in Alaska in 1906. U.S. Geol. Surv. Bull. 314, 1907, 235 pp.

24. Brooks, A. H. The Mining Industry in 1910. U.S. Geol. Surv. Bull. 480, 1911, p. 29-32.
25. -----. The Mining Industry in 1912, U.S. Geol. Surv. Bull. 542, 1913, pp. 36-38.
26. -----. The Alaskan Mining Industry in 1915. U.S. Geol. Surv. Bull. 642, 1916, pp. 16-71.
27. -----. Antimony Deposits of Alaska. U.S. Geol. Surv. Bull. 649, 1916, 67 pp.
28. -----. The Alaskan Mining Industry in 1920. U.S. Geol. Surv. Bull. 722-A, 1922, pp. 39-41.
29. -----. Mineral Resources of Alaska in 1921. U.S. Geol. Surv. Bull. 739, 1923, 24 pp.
30. Brooks, A. H., and S. R. Capps. The Alaska Mining Industry in 1922. U.S. Geol. Surv. Bull. 755-A, 1924, 56 pp.
31. Budnik, R. T. The Geologic History of the Valdez Group, Kenai Peninsula, Alaska: Deposition and Deformation of a Late Cretaceous Consumptive Plate Margin. Los Angeles, University of California Ph.D. dissertation, 1979, 139 pp.
32. Burnette, J. G. Report of the Primrose Mine. Unpublished company report, Kenai Metal Corporation, 1931, available at U.S. Bureau of Mines, Anchorage Field Office.
33. Byram, H. F. Report of the Primrose Mine. Unpublished company report, 1932, available at U.S. Bureau of Mines, Anchorage Field Office.
34. Capps, S. R. The Turnagain-Knik Region. U.S. Geol. Surv. Bull. 642, 1916, pp. 147-194.
35. -----. Geology and Mineral Resources of the Region Traversed by the Alaska Railroad. U.S. Geol. Surv. Bull. 755, 1924, pp. 73-150.
36. -----. Geology of the Alaska Railroad Region. U.S. Geol. Surv. Bull. 907, 1940, 201 pp.
37. Case, J. E., D. F. Barnes, G. Plafker, and S. L. Robbins. The Alaska Earthquake, March 27, 1964, Regional Effects, Chap. C., Gravity Survey and Regional Geology of the Prince William Sound Epicentral Area, Alaska. U.S. Geol. Surv. Prof. Paper 543-C, pp. C1-C12.
38. Case, J. E., R. Sikora, R. G. Tysdal, D. F. Barnes, and R. Morin. Geologic Interpretation of Gravity Anomaly Map of the Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-880C, 1979.
39. Case, J. E., R. G. Tysdal, J. W. Hillhouse, and C. S. Gromme. Aeromagnetic Map and Geologic Interpretation of Aeromagnetic Map of the Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-880D, 1979.
40. Clark, K. F. Stockwork Molybdenum Deposits in the Western Cordillera of North America. Econ. Geol., v. 67, 1972, pp. 731-758.
41. Clark, S. H. B. Reconnaissance Bedrock Geologic Map of the Chugach Mountains near Anchorage, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-350, 1972.
42. -----. Reconnaissance Geologic Map and Geochemical Analyses of Stream Sediments and Rock Samples of the Anchorage A-6 Quadrangle, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-351, 1972.
43. -----. The McHugh Complex of South-central Alaska. U.S. Geol. Surv. Bull. 1372-D, 1973, 11 pp.

44. Clifton, H. E., R. E. Hunter, J. F. Swanson, and R. L. Phillips. Sample Size and Meaningful Gold Analyses. U.S. Geol. Surv. Prof. Paper 625-C, 1969.
45. Cobb, E. H. Metallic Mineral Resources of the Anchorage Quadrangle, Alaska. U.S. Geol. Surv. Misc. Field Studies Map, MF-409, 1972.
46. -----. Metallic Mineral Resources Map of the Blying Sound Quadrangle, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-440, 1972, 1 sheet, scale 1:250,000.
47. -----. Metallic Mineral Resources Map of the Seward Quadrangle, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-466, 1972, 2 sheets, scale 1:250,000.
48. -----. Summary of References to Mineral Occurrences (Other than Mineral Fuels and Construction Materials) in the Anchorage Quadrangle, Alaska. U.S. Geol. Surv. OFR 79-1095, 1979.
49. -----. Occurrences of Copper Minerals in Alaska. U.S. Geol. Surv. OFR 82-1029, 1982.
50. Condon, W. H., and J. T. Cass. Map of a Part of the Prince William Sound Area, Alaska, Showing Linear Geologic Features as Shown on Aerial Photographs. U.S. Geol. Surv. Misc. Geol. Invest. Map I-273, 1958, 1 sheet, scale 1:125,000.
51. Cook, D. J., and P. D. Rao. Distribution, Analysis, and Recovery of Fine Gold from Alluvial Deposits. MIREL Report No. 32, 1973, 102 pp.
52. Cooper, W. Sketch Map of the Kenai River Dredging Lands, Kenai Peninsula, Alaska. Unpublished map, 1910, available at U.S. Bureau of Mines, Anchorage Field Office.
53. Cowan, D. S., and R. F. Boss. Tectonic Framework of the Southwestern Kenai Peninsula, Alaska. Geol. Society of America Bull., v. 89, 1978, pp. 155-158.
54. Dadisman, S. V. Radiometric Ages of Rocks in South Central Alaska and Western Yukon Territory. U.S. Geol. Surv. OFR 80-183, 1980, 80 pp.
55. Eckhart, R. A., and G. Plafker. Haydite Raw Material in the Kings River, Sutton and Lawing Areas, Alaska. U.S. Geol. Surv. Bull. 1039C, 1959.
56. Fechner, Steven A., and Mark P. Meyer. Placer Sampling and Related Bureau of Mines Activities in the SOUND Study Area of the Chugach National Forest, Alaska. U.S. BuMines OFR 62-82, 1982, 24 pp.
57. Fiedler, H. L. Unpublished Letter to B. D. Stewart Reporting upon Visit to Sweepstake Tunnel, Harriman Fiord, 1945, available at U.S. Bureau of Mines, Anchorage Field Office.
58. Flothe, M. E. A Study of the History and Precious Metal Potential of Quartz Creek Valley. Unpublished Company Report, 1973, available at U.S. Bureau of Mines, Anchorage Field Office.
59. Garrett, C. R. Arago, Patricia and Johnie Placer Claims, Canyon Creek. U.S. Forest Service Report of Mineral Examination, 1969.
60. -----. Dick O'Vaugh Placer Claims. U.S. Forest Service Report of Mineral Examination, 1971.
61. -----. Sixmile River Claim, Sixmile Creek. U.S. Forest Service Report of Mineral Examination, 1971.
62. -----. Swetman Lucky Strike Mine. Report of Mineral Examination, U.S. Forest Service, 1971.

63. Garrett, C. R. Grant Lake Development Co. Report of Mineral Examination, U.S. Forest Service, 1972, 19 pp.
64. Grant, U.S., and D. F. Higgins. Notes on Geology and Mineral Prospects in the Vicinity of Seward, Kenai Peninsula. U.S. Geol. Surv. Bull. 379, 1909, pp. 98-107.
65. -----. Preliminary Report on the Mineral Resources of the Southern Part of the Kenai Peninsula. U.S. Geol. Surv. Bull. 442, 1909, pp. 166-178.
66. -----. Reconnaissance of the Geology and Mineral Resources of Prince William Sound, Alaska. U.S. Geol. Surv. Bull. 443, 1910, 89 pp.
67. -----. The Port Wells Gold-Lode District. U.S. Geol. Surv. Bull. 592, 1910, pp. 195-236.
68. Halloran, J. R. S. and S. Building Stone Placer Claim. U.S. Forest Service Revised Report of Mineral Examination, 1980.
69. -----. Grant Lake Development Claims. Report for Patent Examination, U.S. Forest Service, 1981, 20 pp.
70. Herreid, G. A Geologic and Geochemical Traverse along the Nellie Juan River. State of Alaska, Dept. of Natural Resources, Div. of Mines and Minerals. Geol. Report No. 9, 1964.
71. -----. Property Examination Report on Russian River Limestones. State of Alaska, Department of Natural Resources, Div. of Mines and Minerals Report, 1967.
72. Hillhouse, J. W., and C. S. Gromme. Paleomagnetic Poles from Sheeted Dikes and Pillow Basalt of the Valdez (?) and Orca Groups, southern Alaska [abs.]. EOS (American Geophysical Union Transactions), v. 58, 1977, pp. 1127.
73. Hoekzema, R. B. Jo Jan Nugget Claim, East Fork Creek. U.S. Forest Service Report of Mineral Examination, 1979.
74. -----. Report of Mineral Examination, 1979.
75. -----. Roy #1 Claim, Canyon Creek. U.S. Forest Service Report of Mineral Examination, 1979.
76. -----. Placer Sampling and Related Bureau of Mines Activities on the Kenai Peninsula, Alaska. BuMines OFR 138-81, 1981.
77. Hoekzema, R. B., and G. E. Sherman. Billings Glacier Molybdenum-Copper Occurrence, Whittier, Alaska. BuMines OFR 141-81, 1981.
78. Hudson, T. Calc-alkaline Plutonism along the Pacific Rim of Southern Alaska. U.S. Geol. Surv. OFR 79-953, 1979, 31 pp.
79. Jansons, U. 1979 Bureau of Mines Sampling Sites and Analytical Results for Samples Collected in the Chugach National Forest, Alaska. BuMines OFR 83-81, 1981.
80. Jansons, U., R. B. Hoekzema, J. M. Kurtak, and S. F. Fechner. Mining History and Mineral Occurrences in the Chugach National Forest, Southcentral Alaska. U.S. BuMines MLA 5-84.
81. Jasper, M. W. H and T Mining Company Last Chance Mine. Unpublished Terr. of Alaska, Dept. of Mines Report, 1957.
82. -----. William Johnson Gold Quartz Prospect Mile 54 Seward-Anchorage Highway, Seward Quadrangle, Alaska. Terr. of Alaska, Dept. of Mines Report, 1957.
83. -----. Preliminary Property Examination Report, Falls Creek Mining Company Gold Quartz Property, Seward Precinct, Seward Quadrangle, Kenai Peninsula, Alaska. Terr. of Alaska, Dept. of Mines Report, 1958.

84. Jasper, M. W. Geochemical Investigations, Willow Creek Southerly to Kenai Lake Region, South Central Alaska. Alaska Div. of Mines and Minerals Geochemical Report 14, 1967, 47 pp.
85. Johnson, B. L. Gold Deposits of the Seward-Sunrise Region, Kenai Peninsula. U.S. Geol. Surv. Bull. 520, 1912, pp. 131-173.
86. ----- The Port Wells Gold-lode District. U.S. Geol. Surv. Bull. 592, 1914, pp. 195-236.
87. ----- Mining on Prince William Sound. U.S. Geol. Surv. Bull. 622, 1915, pp. 131-139.
88. ----- Mining on Prince William Sound. U.S. Geol. Surv. Bull. 642, 1916, pp. 137-145.
89. ----- Mining on Prince William Sound. U.S. Geol. Surv. Bull. 662, 1918, pp. 183-192.
90. ----- Mining on Prince William Sound. U.S. Geol. Surv. Bull. 692, 1919, pp. 143-172.
91. Jones, D. L., and N. S. Silberling. Mesozoic Stratigraphy, The Key to Tectonic Analysis of Southern and Central Alaska. U.S. Geol. Surv. OFR 79-1200, 1979, 41 pp.
92. Jones, H. A. H. Deac Goodpaster Placer Claims, Sixmile Creek. U.S. Forest Service Report of Mineral Examination, 1970.
93. ----- Mitchell Mining Claims, Kenai River. U.S. Forest Service Report of Mineral Examination, 1970.
94. Kachadoorian, R., A. T. Ovenshine, and S. Bartsch-Winkler. Late Wisconsin History of the Shore of Turnagain Arm, Alaska, in The United States Geological Survey in Alaska: Accomplishments during 1976. U.S. Geol. Surv. Cir. 751-B, 1977, pp. 49-50.
95. Kardex. Alaska Mineral Property Reference file, District 5, Quadrangle 85. Alaska Div. Geol. and Geophys. Survs., 12/06/82.
96. ----- Alaska Mineral Property Reference file, District 5, Quadrangle 95. Alaska Div. Geol. and Geophys. Survs., 12/06/82.
97. Karlstrom, T. N. V. Quaternary Geology of the Kenai Lowland and Glacial History of the Cook Inlet Region, Alaska. U.S. Geol. Surv. Prof. Paper 443, 1964, 69 pp.
98. Kirschner, C. E., and C. A. Lyon. Stratigraphic and Tectonic Development of the Cook Inlet Petroleum Province, in Arctic Geology: American Association of Petroleum Geologists Memoir 19, 1971, pp. 396-407.
99. Kurtak, Joseph M. A Manganese Occurrence on Chenega Island, Prince William Sound, Alaska. U.S. BuMines MLA 124-82, 1982, 9 pp.
100. Landes, K. K. Geology of the Knik-Matanuska District. U.S. Geol. Surv. Bull. 792, 1925, pp. 52-72.
101. Lanphere, M. A. Potassium-Argon Ages in Tertiary Plutons in Prince William Sound Region, Alaska, in Geological Survey Research 1966. U.S. Geol. Surv. Prof. Paper 550-D, 1966, pp. 195-198.
102. Lanphere, M. A., and George Plafker. Radiometrically Dated Plutons Cutting the Orca Group, in U.S. Geological Survey Alaska Program, 1974. U.S. Geol. Surv. Cir. 700, 1974, pp. 53.
103. LeCompte, James R. Map Showing Interpretation of Landsat Imagery of the Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. OFR 78-737, 1979.
104. Mack, T. W. Preliminary Report Crow Creek, Turnagain Arm Region, Alaska. Unpublished company report, 1914, available at U.S. Bureau of Mines, Anchorage Field Office.

105. Mack, T. W. Preliminary Report of Glacier Creek and Tributaries Turnagain Arm Region, Alaska. Unpublished company report, 1914, available at U.S. Bureau of Mines, Anchorage Field Office.

~~106.~~ ----- Preliminary Report on Sampling of Kenai River Gravels. Unpublished company report, 1914, available at U.S. Bureau of Mines, Anchorage Field Office.

107. ----- Preliminary Report on Quartz Creek, Kenai Peninsula, Alaska Unpublished company report, 1914, available at U.S. Bureau of Mines, Anchorage Field Office.

108. Martin, G. C., B. L. Johnson, and U.S. Grant. Geology and Mineral Resources of Kenai Peninsula, Alaska. U.S. Geol. Surv. Bull. 587, 1915, 243 pp.

109. Martin, G. C. The Alaskan Mining Industry in 1917. U.S. Geol. Surv. Bull. 692, 1919, pp. 11-42.

110. Martin, G. C., and Others. Mineral Resources of Alaska, 1918. U.S. Geol. Surv. Bull. 712, 1920, pp. 32-34.

111. McCormick, Clinton P. Mining on Prince William Sound, Alaska. The Mining World, 9/18/1909, pp. 1199-1202.

112. McKeveitt, E. M., and C. D. Holloway. Table Describing Metalliferous and Selected Nonmetalliferous Mineral Deposits of Eastern Southern Alaska. U.S. Geol. Surv. OFR 77-169-A, 1977.

113. McKeveitt, E. M. Metalliferous Mineral Resource Data for Eastern Southern Alaska. U.S. Geol. Surv. OFR 78-1-E, 1978.

114. McKinstry, H. E., and E. L. Ohle, Jr. Ribbon Structure in Gold-Quartz Veins. Econ. Geol. v. XLIV, 1949, pp. 87-109.

115. Mendenhall, W. C. A Reconnaissance from Resurrection Bay to the Tanana River, Alaska, in 1898. U.S. Geol. Surv. 20th Annual Report, pt. 7, 1900, pp. 265-340.

116. Mihelich, M. Carl M. Clark Claims, Resurrection Creek-Seward Quadrangle. Unpublished State of Alaska, Div. of Mines and Minerals Report, 1960.

117. Mitchell, Peter A. Geology of the Hope-Sunrise (Gold) Mining District, North-Central Kenai Peninsula, Alaska. M. A. Thesis, Stanford Univ., Stanford, Calif., 1979, 123 pp.

118. Mitchell, Peter A., M. L. Silberman, and J. R. O'Neil. Genesis of Gold Vein Mineralization. Hope-Sunrise District, Southeastern Alaska. U.S. Geol. Surv. OFR 81-103, 1981, 18 pp.

119. Moffit, F. H. Gold Placers of Turnagain Arm, Cook Inlet. U.S. Geol. Surv. Bull. 259, 1905, pp. 90-99.

120. ----- Gold Fields of the Turnagain Arm Region. U.S. Geol. Surv. Bull. 277, 1907, 80 pp.

121. ----- Geology of the Prince William Sound Region, Alaska. U.S. Geol. Surv. Bull. 989-E, 1954, pp. 225-310.

122. Moffit, F. H., and R. E. Fellows. Copper Deposits of the Prince William Sound District, Alaska. U.S. Geol. Surv. Bull. 963B, 1950, 80 pp.

123. Moulton, W. G. Nelson D. Garrett and Sixmile River Placer Claims. U.S. Forest Service Report of Mineral Examination, 1972.

124. ----- Goodrock Group, Canyon Creek. U.S. Forest Service Report of Mineral Examination, 1974.

125. Nelson, G. E. Report on Alaska Oracle Corporation Property, Gilpatrick Group, Gladiator Group, Lucky Strike Property, Swetmann Prospect on Kenai Peninsula, Alaska. Unpublished company report, 1931, available at U.S. Bureau of Mines, Anchorage Field Office.

126. Nelson, Steven W., David F. Barnes, J. A. Dumoulin, R. J. Goldfarb, R. A. Koski, Marti L. Miller, C. G. Mull, W. J. Pickthorn, Uldis Jansons, Robert B. Hoekzema, Joseph M. Kurtak, and Steven A. Fechner. Mineral Resource Potential of the Chugach National Forest, South-central Alaska. U.S. Geol. Surv. MF-1645A, 1984, 24 pp, 1 map sheet.
127. Newson, J. F. Preliminary Report on Dredging Possibilities of the Kenai River, Alaska. Unpublished company report, 1914, available at U.S. Bureau of Mines, Anchorage Field Office.
128. O'Neill, W. A. Reconnaissance Examination East Point Mine, Falls Creek-Moose Pass District, Seward, Alaska. Unpublished report, 1960, 5 pp, available at U.S. Bureau of Mines, Anchorage Field Office.
129. Paige, Sidney and A. Knopf. Reconnaissance of Matanuska and Talkeetna Basins, with Notes on the Placers of the Adjacent Regions. U.S. Geol. Surv. Bull. 314, 1907, pp. 104-125.
130. Park, C. F., Jr. The Girdwood District, Alaska. U.S. Geol. Surv. Bull. 849-G, 1933, pp. 381-424.
131. Plafker, George, D. L. Jones, and E. A. Pessagno, Jr. A Cretaceous Accretionary Flysch and Melange Terrane Along the Gulf of Alaska Margin, in The United States Geological Survey in Alaska: Accomplishments during 1976. U.S. Geol. Surv. Cir. 751-B, 1977, pp. 41-43.
132. Plafker, George, R. Bruns, and G. Winkler. Plate Tectonics in the Evolution of Southern Alaska Continental Margin [abs.]: Am. Assoc. Petroleum Geologists Bull., v. 62, no. 7, 1978, pp. 1231-1232.
133. Ransome, Alfred L., and William H. Kerns. Names and Definitions of Regions, Districts, and Sub-districts in Alaska: U.S. Bureau of Mines Information Circular 7679, 1954, 91 pp.
134. Richelson, W. A. Notes on the Merrill Prospect, Portage Mine and Granite Mine. Unpublished company data, 1935-1939, available at U.S. Bureau of Mines, Anchorage Field Office.
135. Richter, D. H. Geology and Lode-gold Deposits of the Nuka Bay Area, Kenai Peninsula, Alaska. U.S. Geol. Surv. Prof. Paper 625-B, 1970, 16 pp.
136. Roehm, J. C. Terr. of Alaska, Dept. of Mines Itinerary Report, 1936-1942.
137. -----. Preliminary Report of El Primero Mining and Milling Company (Granite Mine) Port Wells, Valdez Glacier Mining District. Terr. of Alaska, Dept. of Mines Report, 1936.
138. -----. Preliminary Report of Portage Gold Mines, Ltd., Poe Bay, Prince William Sound District, Valdez Precinct, Port Wells Area. Terr. of Alaska, Dept. of Mines Report, 1936 and 1938.
139. -----. Preliminary Report of the Gold Mint Group (Nearhouse Mine), Palmer Creek, Hope Mining District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937.
140. -----. Preliminary Report of the Hirshey Mine, Moose Pass-Hope District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937.
141. -----. Preliminary Report of Mining Activities on Crow Creek, Girdwood District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937 (1946 supplement), 6 pp., 2 maps.
142. -----. Preliminary Report of New Hope Mine (Swetmann Property) Palmer Creek, Hope Mining District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937.

143. Roehm, J. C. Preliminary Report of Oracle Mine, Summit Creek, Moose Pass-Hope District, Kenai Peninsula, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937.
144. -----. Preliminary Report of Sunshine Group, Palmer Creek, Hope Mining District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1937.
145. -----. Preliminary Report of Blue Fox Group (Superior Mines Inc.), Pigot Bay, Port Wells District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1938.
146. -----. Preliminary Report of Esther Group, Esther Island, Port Wells District, Alaska. Terr. of Alaska, Dept. of Mines Report, 1938.
147. -----. Summary Report of Mining Investigations in the Kenai Precinct July 9-15, 1941. Terr. of Alaska, Dept. of Mines Report, 1941.
148. Shepard, J. G. Merrill Property, Bettles Bay-Valdez Mining District. Unpublished U.S. Geol. Surv. Report, 1926, available at U.S. Bureau of Mines, Anchorage Field Office.
149. Sherman, Gary E., and Uldis Jansons. Feasibility of Economic Gold and Copper Mining in the Chugach National Forest, Alaska. U.S. BuMines OFR 125-84, 1984.
150. Shirley, R. F. The Pathfinder, Weaver and 3C's Placer Claims, Crow Creek. U.S. Forest Service Report of Mineral Examination, 1966, 7 pp.
151. -----. Bonnie Lou and Patricia Placer Mining Claims. U.S. Forest Service Report of Mineral Examination, 1968.
152. -----. Leaping Salmon, Nestors Folly #2 and Sixmile River Island Placer Mining Claims, Sixmile Creek. U.S. Forest Service Report of Mineral Examination, 1968.
153. -----. One Shot Placer Claim, Hargood Creek. U.S. Forest Service Report of Mineral Examination, 1968.
154. Silberman, M. L., et al. Metallogenic and Tectonic Significance of Oxygen Isotope Data and Whole-Rock Potassium-Argon Ages of the Nikolai Greenstone, McCarthy Quad, Alaska. U.S. Geol. Surv. OFR 80-2019, 1980, 29 pp.
155. Smith, P. S. Mineral Industry of Alaska in 1924. U.S. Geol. Surv. Bull. 783, 1926, pp. 1-30.
156. -----. Mineral Industry of Alaska in 1926. U.S. Geol. Surv. Bull. 797A, 1928, 66 pp.
157. -----. Mineral Resources of Alaska, 1927. U.S. Geol. Surv. Bull. 810, 1930, p. 17.
158. -----. Mineral Resources of Alaska, 1928. U.S. Geol. Surv. Bull. 813, 1930, p. 18.
159. -----. Mineral Resources of Alaska, Report on Investigations in 1930. U.S. Geol. Surv. Bull. 836A, 1933, 83 pp.
160. -----. Mineral Resources of Alaska, 1931. U.S. Geol. Surv. Bull. 844A, 1933.
161. -----. Mineral Resources of Alaska, 1932. U.S. Geol. Surv. Bull. 857A, 1934.
162. -----. Mineral Resources of Alaska, 1933. U.S. Geol. Surv. Bull. 864A, 1934.
163. -----. Mineral Industry of Alaska in 1934. U.S. Geol. Surv. Bull. 868A, 1936, 91 pp.

164. Smith, P. S. Mineral Industry of Alaska in 1935. U.S. Geol. Surv. Bull. 880A, 1937, 95 pp.
165. ----- Mineral Industry of Alaska in 1936. U.S. Geol. Surv. Bull. 897A, 1938, 107 pp.
166. ----- Mineral Industry of Alaska in 1937. U.S. Geol. Surv. Bull. 910A, 1939, 113 pp.
167. ----- Mineral Industry of Alaska in 1938. U.S. Geol. Surv. Bull. 917A, 1939, 107 pp.
168. ----- Mineral Industry of Alaska in 1939. U.S. Geol. Surv. Bull. 926A, 1942, 106 pp.
169. ----- Occurrences of Molybdenum Minerals in Alaska. U.S. Geol. Surv. Bull. 926-C, 1942, pp. 185-188.
170. ----- Mineral Industry of Alaska in 1940. U.S. Geol. Surv. Bull. 933A, 1942, 102 pp.
171. Smith, S. S. The Mining Industry in the Territory of Alaska during the Calendar Year 1916. BuMines Bull. 153, 1917, 89 pp.
172. ----- Hirshey Lucky Strike Mine. Unpublished letter, 1923, available at U.S. Bureau of Mines, Anchorage Field Office.
173. Smitheringale, W. V. Report of the Portage Mine, Poe Bay, Alaska. Unpublished company report, 1935, available at U.S. Bureau of Mines, Anchorage Field Office.
174. Steiner, R. The Portage Mine, Poe Bay, Whittier, Alaska. Unpublished report for Brigitte Mining and Consulting Company Limited, 1965, 12 pp, available at U.S. Bureau of Mines, Anchorage Field Office.
175. Stewart, B. D. Territorial Mines Report on Cooperative Mining Investigations, 1931, pp. 55-57.
176. ----- Territorial Mines Report on Cooperative Mining Investigations, 1933, pp. 56-58.
177. Tarr, R. S., and L. Martin. Alaskan Mineral Studies. The National Geographic Society, Washington D. C., 1914, pp. 323.
178. Territory of Alaska. Annual Report of Mine Inspector, 1922, pp. 32.
179. ----- Dept. of Mines Report. Homestake Mine, 1931.
180. Thurmond, F. L. Report on the Monarch Mining Company. Terr. of Alaska, Dept. of Mines Report, 1929, 8 pp.
181. Tripp, R. B., W. D. Crimm, E. F. Cooley, and G. W. Day. Geochemical Map Showing the Distribution and Abundance of Gold in Heavy Mineral Concentrates in the Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. Misc. Field Studies Map MF-880F, sheet 2 of 3, 1978.
182. Tuck, R. The Moose Pass-Hope District, Kenai Peninsula, Alaska. U.S. Geol. Surv. Bull. 849-I, 1933, pp. 469-530.
183. ----- Origin of the Bedrock Values of Placer Deposits. Econ. Geology, v. 63, 1968, pp. 191-193.
184. Tysdal, R. G. Mines, Prospects, and Occurrences, Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. MF-880A, 1978.
185. ----- Placer Deposits of Seward and Blying Sound Quadrangle, Alaska. U.S. Geol. Surv. MF 880-B, 1978.
186. Tysdal, R. G., and J. E. Case. Placer River Fault, Seward and Blying Sound Quadrangles, in The U.S. Geological Survey in Alaska: Accomplishments during 1976. U.S. Geol. Surv. Cir. 751-B, 1277a, pp. 47-48.

187. ----- The McHugh Complex in the Seward Quadrangle, South-central Alaska, in The U.S. Geological Survey in Alaska: Accomplishments during 1976. U.S. Geol. Surv. Cir. 751-B, 1977b, pp. 48-49.
188. ----- Geologic Map of the Seward and Blying Sound Quadrangles, Alaska. U.S. Geol. Surv. Misc. Invest. Series Map I-1150, 1979.
189. Tysdal, R. G., J. E. Case, G. R. Winkler, and S. H. B. Clark. Sheeted Dikes, Gabbro, and Pillow Basalt in Flysch of Coastal Southern Alaska. *Geology*, v. 5, 1977, pp. 377-383.
190. Tysdal, R. G., and George Plafker. Age and Continuity of the Valdez Group, Southern Alaska, in Sohl, N. F., and Wright, W. B., Compilers, Changes in Stratigraphic Nomenclature by the U.S. Geol. Surv., 1977. U.S. Geol. Surv. Bull. 1457-A, 1978, pp. A120-A124.
191. U.S. Bureau of Mines. Anchorage, Seward, and Blying Sound Quadrangles, OFR 20-73, revised 1980.
192. ----- Minerals Availability System, Anchorage, Seward, and Blying Sound Quadrangles, 1982.
193. ----- Unpublished Mine Production Data, available at U.S. Bureau of Mines, Anchorage Field Office.
194. U.S. Department of the Interior, Bureau of Land Management. Mining Claim Report, Window 340, Chugach National Forest, 10/19/84.
195. U.S. Forest Service. Unpublished Mineral Lease/sale Information 1977-82, available at U.S. Bureau of Mines, Anchorage Field Office.
196. ----- Supplement to the Draft Environmental Impact Statement and Forest Plan, 1983.
197. Wells, John H. Placer Examination Principles and Practice. U.S. Department of the Interior, BLM Technical Bull. 4, 1969, 209 pp.
198. Westra, G., and S. B. Keith. Classification and Genesis of Stockwork Molybdenum Deposits, in *Economic Geology*, v. 76, 1981, pp. 844-873.
199. White, M. G., and Others. Preliminary Summary of Reconnaissance for Uranium in Alaska. U.S. Geol. Surv. Cir. 196, 1952, 17 pp.
200. Williams, J. A. Examination of the K and T Antimony Prospect of Kenai Lake, Moose Pass-Hope District. Terr. of Alaska, Dept. of Mines Report, 1952.
201. Wimmeler, N. L. Placer Mining in Alaska, Kenai Peninsula Region. Terr. of Alaska, Dept. of Mines SL Report, 1922.
202. ----- Brewster Quartz Property. Terr. of Alaska, Dept. of Mines Report, 1926.
203. Zuffa, G. G., T. H. Nilsen, and G. R. Winkler. Rock-Fragment Petrography of the Upper Cretaceous Chugach Terrane, Southern Alaska. U.S. Geol. Surv. OFR 80-713, 28 pp.

EXPLANATION OF HEADINGS AND ABBREVIATIONS USED FOR APPENDICES A, B, and C

LOCATION: Refer to Figure 14 for location of the property identified by the "Map No."

QUADRANGLE: Refers to USGS quadrangle, scale 1:63,360.

REFERENCE

NUMBERS: Several different reference numbers are used due to the fact that not all properties are catalogued under any single system. These are all referenced in the bibliography except Map No.

MAP NO.: U.S. Bureau of Mines RARE II project number designation (255) for the property location on Figure 14.

KX NO.: State of Alaska. MinFile. Automated System for Alaska (91) Mining Claim Information.

TYSDAL NO.: U.S. Geological Survey Miscellaneous Field Studies Map (51) MF-880-A.

MAS NO.: U.S. Bureau of Mines Minerals Availability System. (191)

BLM NO.: U.S. Bureau of Land Management. Mining Claim Report, (AA000147) Chugach National Forest.

MS NO.: U.S. Bureau of Land Management. Mineral Surveys, Land (1539) Status, and Use Records.

EXPLANATION TO LISTINGS:

1. Localities are shown on figure 14. Letter designations for lode mines are the initial letters of the 1:250,000 scale quadrangle on which the locality occurs: Seward, Cordova, Valdez, Anchorage, Blying Sound, Bering Glacier. Placer localities are prefixed with a "P", regardless of quadrangle.
2. a) Names of the locality show the most commonly used name first, followed by other names that have been used to refer to the property.
b) Double lines under the name designate past mines.
c) Single underline designates a prospect with high potential.
d) Asterisk by name indicates newly named and/or identified occurrence.

ABBREVIATIONS USED

ND - No data
NA - Not applicable
QV - Quartz vein
Spec - Specimen

Fel Plut - Felsic Pluton
Metased - Metasediments including
slate and quartzite

APPENDIX A - Lode deposit descriptions, Anchorage Quadrangle,
Peninsula study area, Alaska

Map No.	Name
A-16	Dartmouth Glacier Occurrence.
A-17	Lafayette Glacier Occurrence.
A-18	Crescent Glacier Occurrence.
A-19	Cann and Minor Prospect.
A-20	Griset and Benson Prospect.
A-21	Charles Cameron Prospect.
A-22	Last Chance Prospect.
A-23	Alaska Wonder Ledge Prospect.
A-24	Walters, Brasslin, and Atkinson Prospect.
A-25	Mt. Curtis Occurrence.
A-26	Paymaster Lode Prospect.
A-27	Barry Arm Antimony Prospect.
A-28	Capital Hill Prospect.
A-29	Dog Occurrence.
A-30	Alaska Homestake Mine.
A-31	Point Doran Occurrence.
A-32	H. G. Cloes Prospect.
A-33	Lagoon Creek Prospect.
A-34	Olson and Viette Prospect.
A-35	Roth and Johnson Occurrence.
A-36	Raggedie Ann Occurrence.
A-37	Jewel Mine.
A-38	Monarch Mine.

- A-39 Brenner Mine.
- A-40 Bahrenberg Mine.
- A-41 Eagle River Prospect.
- A-42 Meares Glacier Occurrence.
- A-43 Mt. Castner Occurrence.
- A-44 Unnamed Occurrence.

ILLUSTRATIONS

- A- 1. Sample location map for the Dartmouth Glacier Occurrence (A-16).
- A- 2. Sample location map for the Jewel Mine workings (A-37).
- A- 3. Sample location map for the Monarch Mine workings associated with the north and south veins (A-38).
- A- 4. Sample location map for a short Monarch Mine adit developed upon a crosscutting vein (A-38).

TABLES

- A- 1. Analytical results Dartmouth Glacier Occurrence (A-16).
- A- 2. Analytical results Lafayette Glacier Occurrence (A-17).
- A- 3. Analytical results Crescent Glacier Occurrence (A-18).
- A- 4. Analytical results Alaska Wonder Ledge Prospect (A-23).
- A- 5. Analytical results Mt. Curtis Occurrence (A-25).
- A- 6. Analytical results Alaska Homestake Mine (A-30).
- A- 7. Analytical results Unnamed prospect near Lagoon Creek (A-33).
- A- 8. Analytical results Olson and Viette (A-34).
- A- 9. Analytical results Jewel Mine (A-37).
- A-10. Recorded production, Monarch-Jewel Mine, Girdwood Mining District, Alaska.
- A-11. Analytical results Monarch Mine (A-38).
- A-12. Analytical results Brenner Mine (A-39).
- A-13. Analytical results Bahrenberg Mine (A-40).

NAME (other names): Dartmouth Glacier
Occurrence

COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Anchorage A-2 SE 1/4 Sec 33 T 13N R 10E
Meridian: Seward

Geographic: This occurrence is located on the northwest side of the divide between the northwest fork of the Coghill River and Dartmouth Glacier at an elevation of 2,000 to 2,100 ft.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
A-T6	NA	NA	NA	NA	NA

HISTORY & PRODUCTION:

1981 - Discovered and sampled by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

None.

GEOLOGIC SETTING:

Mineralization consists of several subparallel quartz veins developed along shear zones in and along the margin of a small granitic stock exposed over an area 100-ft long and 50-ft wide. The veins strike north and dip either 30-55°E or 75°W. Spur veins striking N30°E occur along one vein. Veins range from 2-in. to 3-ft wide and contain disseminated grains and massive pods of arsenopyrite with lesser disseminated galena and pyrite. Chalcopyrite was identified in a small podiform concretion in a 4-ft wide shear zone striking northeasterly in hornfelsed country rock near the stock (5706E).

BUREAU WORK:

A sketch map of the outcrop showing sample locations was made (fig. A-1). Data from eight samples (5706 A-H) are listed on table A-1. Mineralization is apparently restricted to an area measuring 100 x 50 ft. Additional work is warranted in the vicinity of this occurrence as virtually no recorded mineral exploration has occurred. Mineralization could be more extensive than that sampled. Moderate mineral development potential.

REFERENCES:

None

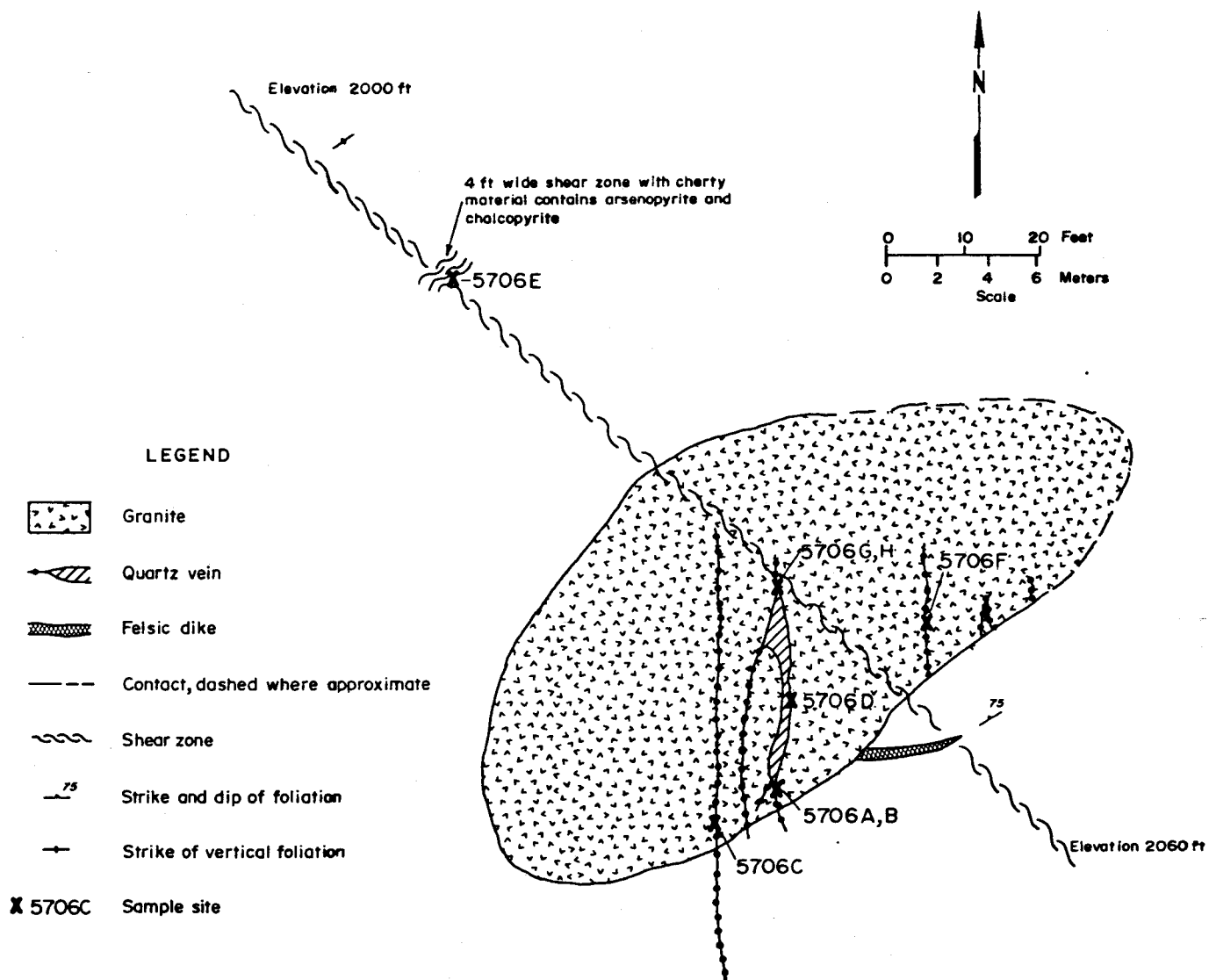


FIGURE A-1. Sample location map for the Dartmouth Glacier Occurrence (A-16).

TABLE A-1. - ANALYTICAL RESULTS - Dartmouth Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5706A	Q.V.	Chip	3 in.	0.08	3.1	1	93	23	1,900	ND	<2	ND	ND	<5	<5	Q.V. No. 1
5706B	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	" "
5706C	Q.V.	Chip	6 in.	16.4	38	5	1300	115	185,000	ND	11	ND	ND	<5	6	Q. V. No. 2
5706D	Q.V.	Chip	12 in.	0.11	2.4	1	100	35	1,400	ND	15	ND	ND	ND	<5	Q. V. No. 3
5706E	Q.V. Metased	Grab	NA	0.14	1.2	750	56	79	40	ND	3	ND	ND	ND	<5	Podiform mass of sulfides.
5706F	Q.V.	Grab	NA	<.03	<.03	5	12	26	100	ND	11	ND	ND	ND	<5	Q. V. No. 4
5706G	Fe1 Plut	Grab	NA	0.03	0.3	27	16	42	260	ND	2	ND	ND	<5	<5	ND
5706H	Fe1 Plut	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Lafayette Glacier
Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-4
Meridian: Seward

1/4 Sec 15 T 11N R 9E

Geographic: This occurrence is located near Lafayette
Glacier on the east side of College Fiord.

REFERENCE NUMBERS:

Map
A-17

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1980 - Mineralized float identified by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA: None.

GEOLOGIC SETTING:

Mineralization consists of quartz and metasedimentary float containing pyrite and anomalous silver values. Felsic dikes and stained quartz veins are exposed in the valley walls and cirque at the head of Lafayette Glacier.

BUREAU WORK:

A placer sample consisting of 0.1 yd³ of surficial gravels containing anomalous gold values (0.001 oz gold/yd³) and mineralized appearing float were collected in 1980. Data from samples 5434 and 5435 are listed in table A-2. Additional evaluation of the area is warranted based upon the color anomalies present and the samples collected. Low mineral development potential.

REFERENCES:

None

TABLE A-2. - ANALYTICAL RESULTS - Lafayette Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5433	Metased	Grab	NA	.09	4.2	68	21	98	11	ND	ND	ND	ND	ND	ND	ND	ND
5434	Q.V.	Grab	NA	<.03	1.1	14	22	18	<10	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Crescent Glacier
Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-3 SE 1/4 Sec 19 T 11N R 9E
Meridian: Seward
Geographic: This occurrence is located near Crescent
Glacier on the east side of College Fiord.

REFERENCE NUMBERS:

Map
A-18

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1980 - Mineralization in float identified by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

None

GEOLOGIC SETTING:

Mineralization consisted of one piece of quartz float containing pyrite, arsenopyrite, and chalcopyrite. Based upon size of the quartz boulders sampled, the vein must be at least 10-in. wide from which it was derived. Felsic dikes and stained quartz veins are exposed along the valley walls and cirque at the head of Crescent Glacier.

BUREAU WORK:

A placer sample containing anomalous gold values and a sample of quartz float were collected in 1980. Though values are low, additional evaluation of the area may be warranted due to recent deglaciation and the lack of prospecting in the area. Data from sample 5430 are listed on table A-3. Low mineral development potential.

REFERENCES:

None

TABLE A-3. - ANALYTICAL RESULTS - Crescent Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5430	QV	Grab	NA	<.03	1.2	130	54	26	210	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Cann and Minor
Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-3 NE 1/4 Sec 29 T 12N R 9E
Meridian: Seward

Geographic: This prospect is reported to be located on
the east side of College Fiord about 2 mi
north of the mouth of the Coghill River between
sea level and 250 ft above sea level.

REFERENCE NUMBERS:

Map
A-19

Kx
209

Tysdal
NA

MAS
TT2

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Reportedly owned by J. H. Cann and C. J. Minor (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consisted of a 65 ft adit near sea level and stripping on the
vein at 250 ft above sea level.

GEOLOGIC SETTING:

The geologic setting is described by Johnson (86):

"The country rock at the tunnel is slate and massive graywacke cut by an acidic dike. The vein is closely associated with the dike, in places cementing the shattered dike rock. The tunnel is driven S9°W along a fault that intersects both dike and vein. The quartz exposed ranges in width from a few inches to 6 ft. The dike has a maximum observed width of 5 ft. Some calcite-bearing quartz stringers cut the graywacke at the mouth of the tunnel. The country rock at the upper showing is graywacke. The vein is about 3-ft wide and is exposed for 20 ft. It strikes approximately N56°W and has a vertical dip. The walls are free but show no gouge. The mineralization appears to be slight in both veins. Quartz, calcite, pyrite, sphalerite, and chalcopyrite were recognized in the ores."

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

NAME (other names): Griset and Benson Prospect
(Eureka and Spruce)

COMMODITIES: Au

LOCATION: Quadrangle: Anchorage A-3
Meridian: Seward

1/4 Sec 28? T 11N R 8E

Geographic: This prospect is reported to occur on
the east side of Point Pakenham.

REFERENCE NUMBERS:

Map
A-20

Kx
205

Tysdal
NA

MAS
TTT

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Originally located by Edwin Griset and O. T. Benson (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Developments consist of a 30 ft crosscut, open cuts, and stripping.

GEOLOGIC SETTING:

Mineralization is reported to consist of a vertical quartz vein
averaging 3-ft wide and traceable for 300 ft.

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development
potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

NAME (other names): Charles Cameron Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-3 1/4 Sec 29 T 11N R 8E

Meridian: Seward

Geographic: Two prospects originally belonging to Charles Cameron are located on the west side of Point Pakenham close to shore near sea level.

REFERENCE NUMBERS:

Map
A-21

Kx
197

Tysdal
NA

MAS
TTO

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Originally located by Charles Cameron (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to include 100 ft of stripping and a 25 ft adit (86).

GEOLOGIC SETTING:

Mineralization and geology of these prospects are described by B. L. Johnson (86) in 1913 as follows:

"About 200 ft from the shore is a vein, which was located in the spring of 1912. It occupies a small well-defined fissure striking north and dipping 50°E. The width of the vein varies from 4 to 20 in., averaging between 10 and 15 in. It has been stripped about 100 ft. The country rock is slate and thin banded argillite. The footwall of the vein is free but shows no gouge. In the 25 ft adit tunnel a thin gouge lies along the hangingwall. The vein shows secondary banding parallel to the walls. The quartz is white, and in places is vuggy and contains coarse quartz crystals, though at other places it is fine and compact. The mineralization is slight. Free gold is reported, and calcite, arsenopyrite, chalcopyrite, and pyrite were recognized in the ore. The ore contains also a cream-colored carbonate with curved cleavage surfaces.

Near by on the shore another quartz vein is exposed in a 15 ft vertical bluff. This vein was located June 30, 1912. The country rock is slate and graywacke. The strike is apparently N45°W; the dip is 20°N at the foot of the bluff and 60°N at the top. The width of the vein ranges from 8 to 15 in. The walls are free but show no gouge."

BUREAU WORK:

Not located. Undetermined mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

NAME (other names): Last Chance Prospect COMMODITIES: Au

LOCATION: Quadrangle: Anchorage A-3 1/4 Sec 29 T 11N R 8E

Meridian: Seward

Geographic: This occurrence is reported to occur on the
north bank of a small creek about 3/4 mi
north of Point Pakenham at an elevation of 775
ft (86).

REFERENCE NUMBERS:

Map
A-22

Kx
197

Tysdal
NA

MAS
T09

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Charles Cameron (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings reported.

GEOLOGIC SETTING:

Mineralization consists of a N10°E striking 50°W dipping quartz vein 3 to 36-in. wide traceable for 150 ft in a massive metasandstone and slate. The quartz is white, vuggy in spots, with minor banding and contains large quartz crystals and a few specks of arsenopyrite. The ore is reported to pan well and to have assayed 0.63 oz/ton in 1913 (86).

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

NAME (other names): Alaska Wonder Ledge Prospect COMMODITIES: Au, Ag, Cu
Simonton and Mills

LOCATION: Quadrangle: Anchorage A-3 SE 1/4 Sec 7 T 11N R 8E
Meridian: Seward

Geographic: The prospect located by the Bureau occurs at 1700 ft above sea level at the crest of a divide 3/4 mi east of Barry Arm. The reported location (86) is at an elevation of 900 to 1000 ft above sea level 1 mi east of Barry Arm.

REFERENCE NUMBERS:

Map
A-23

$$\frac{Kx}{200}$$

Tysdal
NA

MAS
T07

BLM
NAMS
~~NA~~

HISTORY & PRODUCTION:

1913 - Discovered and located by J. L. Simonton and Fred Mills (86).

No reported production.

RESOURCES: 2,350 tons, <0.1 oz gold/ton, 0.14 oz silver/ton.

OPERATING DATA:

Workings include stripping on the vein and a trail to the prospect.

GEOLOGIC SETTING:

Mineralization consists of a series of three subparallel vertical quartz veins striking N10°E and traceable for 100 to 200 ft. The westernmost vein appears to be the most mineralized and has a maximum thickness of 10 ft with numerous bedrock inclusions. Ore minerals include chalcopyrite, galena, sphalerite, pyrite, and arsenopyrite with local development of azurite and malachite. The host rock is primarily metasandstone.

BUREAU WORK:

A prospect was located and sampled in 1981 which is believed to be the Alaska Wonder Ledge prospect. Data from 3 samples (5825 A-C) are listed on table A-4. Low mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

TABLE A-4. - ANALYTICAL RESULTS - Alaska Wonder Ledge Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5825A	Q.V.	Select Grab	NA	0.09	8.5	1000	260	510	205	ND	2	ND	ND	ND	ND	West vein.
5825B	Q.V.	Chip	8 ft	0.07	5.0	410	290	290	160	ND	<2	ND	ND	ND	ND	" "
5825C	Q.V.	Chip	NA	<.03	0.6	7	115	16	39	ND	<2	ND	ND	ND	ND	East vein.

NAME (other names): Walters, Brasslin and Atkinson Prospect
COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Anchorage A-4 SE 1/4 Sec 8 T 11N R 8E
Meridian: Seward
Geographic: This prospect is located on the west side of the stream draining Mt. Emerson Glacier at an elevation of 265 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-24	203	NA	T08	NA	NA

HISTORY & PRODUCTION:

1911 - Float identified in creek.

1913 - Vein located by A. W. Walters, J. Brasslin, and Robert Atkinson (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Development work includes a 52 ft crosscut adit at 265 ft above sea level, a 25 ft adit at 300 ft above sea level, open cuts and stripping.

GEOLOGIC SETTING:

Johnson (86) describes the mineralization as follows:

"The country rock is the usual slate and graywacke. The ore deposit is a small vein, which is traceable about 170 ft. At the upper tunnel the vein ranged in width from 2 to 8-in., but its average width was about 3 in. It strikes N21°E and dips vertically at the tunnel and shows a thin gouge on both walls. At one place it is offset 2 feet by a small fault. About 20 ft south of the mouth of the tunnel the course of the vein swings round to N40°E. A few barren-looking quartz stringers occur in different parts of the lower crosscut tunnel. The vein, which is crosscut at the face of this tunnel, has a strike of N11°E and a vertical dip. The east wall is free, with gouge; the hanging wall is frozen. Arsenopyrite occurs in considerable quantity in the ore, some stringers of solid arsenopyrite an inch thick being seen. The other metallic ore minerals are galena, gold, and sphalerite. The oxidized outcrop of the ore body is reported to yield big pans. Assays of the ore are said to range from \$23 to \$88 [1.1 to 4.3 oz gold/ton]."

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

NAME (other names): Mt. Curtis Occurrence COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Anchorage A-3 1/4 Sec 31 T 12N R 8E

Meridian: Seward

Geographic: This occurrence is located on the northwest flank of Mount Curtis at an elevation of approximately 2,200 feet.

REFERENCE NUMBERS:

Map
A-25

Kx
198

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

No production.

RESOURCES: ND

OPERATING DATA:

No workings reported.

GEOLOGIC SETTING:

One 3-ft wide resistant quartz vein striking N55°W and dipping 70°SW was traceable for at least 400 ft along strike. A second 1 to 2-ft wide resistant quartz vein striking NW and dipping 65°SW had well developed striations along both walls which indicated left lateral movement along the vein with a rake of 25-30° to the NW. The host rocks are mostly massive metasandstone with slate increasing to the north. Several faults and associated drag folds are exposed in the area. Associated sulfide minerals were restricted to minor pyrite and arsenopyrite.

BUREAU WORK:

The Bureau located several large white quartz veins on the northwest and southwest flanks of Mt. Curtis. They are spacially related to a well defined northeast striking fault zone traceable along Harriman Fiord and across the peninsula of land separating Barry Arm from College Fiord. Some of these veins were examined but none were found to contain significant mineralization. Data from 3 samples (5722 A-C) are listed in table A-5. Low mineral mineral development potential.

REFERENCES:

6, 191

TABLE A-5. - ANALYTICAL RESULTS - Mt. Curtis Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5722A	Q.V.	Grab	NA	<.03	<.03	1	11	26	<10	ND	ND	ND	ND	ND	ND	ND	ND
5722B	Q.V.	Grab	NA	<.03	<.03	1	25	22	<10	ND	ND	ND	ND	ND	ND	ND	ND
5722C	Q.V.	Grab	NA	<.03	<.03	19	12	58	14	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Paymaster Lode Prospect, COMMODITIES: Au, Ag, As
Golden Seal

LOCATION: Quadrangle: Anchorage A-3 1/4 Sec 30? T 12N R 8E
Meridian: Seward
Geographic: The location is reported as being above timber
line on a mountain 1 1/2 mi east of Barry
Arm (86).

REFERENCE NUMBERS:

Map
A-26

Kx
199

Tysdal
NA

MAS
T06

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Discovered and located by Peter Black (86).

No reported production.

RESOURCES: ND

OPERATING DATA: None.

GEOLOGIC SETTING:

Mineralization is reported to consist of a quartz vein 1 1/2- to 3-ft wide, striking north, and traceable for 200 to 300 ft along strike. Pans and assays of gold ranging from 0.87 to 4.2 oz gold/ton were reported prior to 1913 (86).

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 48, 86, 110, 191-192

NAME (other names): Barry Arm Antimony Prospect COMMODITIES: Sb

LOCATION: Quadrangle: Anchorage A-4 SE 1/4 Sec 36 T 11N R 7E
Meridian: Seward
Geographic: This prospect is located on the east side of Barry Arm six miles north-northwest of Point Pakenham 200 yards from shore, about 100 ft above sea level, and on the north side of a small unnamed stream.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-27	197	NA	NA	NA	NA

HISTORY & PRODUCTION:

1913 - Visited by B. L. Johnson (89).

Minor production reported (1,000 tons ore).

RESOURCES: ND

OPERATING DATA:

Workings include some prospect holes and possibly trenching. They were reported to be caved when Johnson visited them in 1913 (89).

GEOLOGIC SETTING:

The host rocks are metasandstone and black slates striking N30°E and dipping 45-60°W. The mineralization occurs along a shear zone 6 to 8-ft wide striking N68°E and dipping 45-65°NW. Grant and Higgins (66) described the ore zone as a breccia developed along a thrust fault and further described the prospect as follows:

"The rock of this zone is black slate cemented by quartz. On the footwall side of the zone there is 3 to 4-in. of black gouge, and on the hanging wall one-half inch to 2-in. of the same material. Next to the hanging wall, but in the sheared zone, is a layer, 1 to 8-in. thick, of quartz holding less rock than usual. This layer contains stibnite (sulphide of antimony), which is closely associated with the quartz and in some places fills little vugs in the quartz. Some movement has taken place along the fault since the deposition of the quartz and stibnite, as indicated by slickensided surfaces. The samples of this layer collected here have one-tenth to one-third of their mass stibnite. This layer is reported to have been 2-ft thick in places and to have carried much more stibnite than noted above. About 1,000 lbs of antimony ore is said to have been taken from this place."

Specimens collected by Johnson in 1913 contained stibnite in finely columnar and granular masses with some acicular crystals. Quartz crystals and iron carbonate were intimately associated with the stibnite. This is the only stibnite lode on Prince William Sound which has been described in the literature. However several other occurrences have been reported in the Port Wells areas, notably:

1. Stibnite veins near Point Doran, at the entrance to Harriman Fiord.
2. On Portage Bay.
3. On Coghill River.

Minor stibnite occurs in gold-bearing veins such as those at the Sweepstake property (S-152) on Harriman Fiord and the Granite Mine (S-147).

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 27, 48, 66, 89, 110, 177, 191

NAME (other names): Capitol Hill Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-4 1/4 Sec 26 T 12N R 7E

Meridian: Seward

Geographic: This prospect is reported to occur on the north side of Barry Arm.

REFERENCE NUMBERS:

Map
A-28

Kx
161, 196,
147, 198,
201

Tysdal
NA

MAS
103

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1918 - 40 ft adit driven (89).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings reportedly consist of a 40 ft adit (89).

GEOLOGIC SETTING:

Mineralization reportedly consists of a quartz vein containing gold, silver, and copper values (89).

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 27, 45, 48, 66, 89, 108, 110, 120, 191-192

NAME (other names): Dog Occurrence

COMMODITIES: Au?

LOCATION: Quadrangle: Anchorage A-4

1/4 Sec 2 T 12N R 7E

Meridian: Seward

Geographic: This occurrence is believed to be located
between Barry and Cascade Glaciers.

REFERENCE NUMBERS:

Map
A-29

Kx
NA

Tysdal
NA

MAS
NA

BLM
AA033434

MS
NA

HISTORY & PRODUCTION:

1979 - Originally located by Douglas Scott (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING: ND

BUREAU WORK:

Not searched for. Undetermined mineral development potential.

REFERENCES:

194

NAME (other names): Alaska Homestake Mine, COMMODITIES: Au, Ag, As, Pb
Black and Hogan
(Bruno #1-4, SSSS Mine, Double D, etc)

LOCATION: Quadrangle: Anchorage D-4 SE 1/4 Sec 31 T 12N R 7E
Meridian: Seward
Geographic: This property is located on the east side of
a small peninsula 1/2 mi east of Serpentine
Glacier between 10 and 200 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-30	66, 188	NA	T02	AA0137T2-14 AA041917 AA042836 AA043728-30	NA

HISTORY & PRODUCTION:

1913 - Originally located by Peter Black and William Hogan.
200 foot adit driven (86).
1917 - A small Lane Chilean mill installed (175). Minor production (193).
1918 - Minor production (193).
1972 - Relocated by Edward E. Schnoor (39).
1981 - Relocated by Dave Williams, Donna Williams, and Steve Wells (194).
1982 - Visited and sampled by the Bureau.

Recorded production: Gold 83 oz, silver 33 oz, from 42 tons of ore (193).

RESOURCES: ND

OPERATING DATA:

Workings consist of a 275 ft adit at 100 ft, a lower adit of unknown length at an elevation of 50 ft above sea level, and a 64 ft winze. Stopping between the levels and above the upper level exists. The plant consists of a 7 ft Lane Chilean mill driven by a gasoline engine, an air compressor driven by a diesel engine, and several buildings.

GEOLOGIC SETTING:

Mineralization consists of a N5°W-30°W striking, 75°E to vertically dipping 2- to 8-in. wide quartz vein developed along the west wall of a 3- to 6-in. wide parallel felsic dike. The quartz is well banded and contains galena, arsenopyrite, sphalerite, and gold. The country rock is mostly metasandstone cut by altered felsic dikes. Other quartz veins are reported in the area.

BUREAU WORK:

This prospect was visited briefly and sampled in 1982. Most of the workings are not safely accessible and could not be properly mapped or sampled and appear to be mined out. Data from nine samples (7253-7261) are listed on table A-6. Debris in the Chilean mill panned minor amalgam. Moderate mineral development potential for a small mine if vein extension can be located.

REFERENCES:

6, 45, 48, 86-87, 110, 175, 179, 191-194

TABLE A-6. - ANALYTICAL RESULTS - Alaska Homestake Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7253	Metased	Grab	NA	0.258	1.433	<10	<200	220	480	ND	ND	ND	180	ND	ND	Hangingwall of dike
7254	Metased	Grab	NA	0.059	0.660	36	<200	230	1200	ND	ND	ND	ND	ND	ND	Footwall of dike.
7255	Q.V.	Chip	3 in.	0.01*	ND	10	290	120	1800	ND	ND	ND	ND	ND	ND	ND
7256	Metased	Grab	NA	<.007*	<.3*	10	330	100	470	ND	ND	ND	ND	ND	ND	Hangingwall of vein
7557	Q.V.	Chip	4 in.	1.99	0.2	<10	2600	270	16000	ND	ND	ND	70	ND	ND	ND
7258	Metased	Chip	6 in.	0.733	0.620	24	<200	320	730	ND	ND	ND	ND	ND	ND	Footwall of vein.
7259	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7260	Metased	Grab	NA	0.039	0.430	140	<200	190	660	ND	ND	ND	ND	ND	ND	Hangingwall of vein
7261	Metased Q.V.	Pan Conc.	1 pan	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Debris from winze. Little gold present.

* ounces per ton

ND no data

NAME (other names): Point Doran Occurrence
Reiter and Olson, Bruno 1-3

COMMODITIES: Sb

LOCATION: Quadrangle: Anchorage A-4 SW 1/4 Sec 2 T 11N R 7W
Meridian: Seward
Geographic: This occurrence is reported to be located
within 500 ft of the tip of Point Doran.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>A-31</u>	<u>NA</u>	<u>NA</u>	<u>104</u>	AA013712-14	<u>NA</u>

HISTORY & PRODUCTION:

1913 - Originally located by J. W. Reiter and M. J. Olson (48).

1972 - Relocated as the Bruno 1-3 claims by Edward Schnoor (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported to consist of an 8- to 36-in. wide quartz vein traceable for 200 ft. Other veins located by Reiter and Olson occur further west on Harriman Fiord. One vein is said to contain stibnite and another to contain galena and chalcopyrite (48).

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

48, 86, 110, 189, 192, 194

NAME (other names): H. G. Cloes Prospect COMMODITIES: Au ?

LOCATION: Quadrangle: Anchorage A-4 SW 1/4 Sec 23 T 11N R 7E

Meridian: Seward

Geographic: This occurrence is reported to occur 1/4 mile south of Mosquito Creek (drainage from Mt. Doran) on the west side of Barry Arm 200 ft back from the beach.

REFERENCE NUMBERS:

Map
A-32

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1938 - 4 claims were located by H. G. Cloes (136).

No reported production.

RESOURCES: ND

OPERATING DATA:

Minor stripping reported (136).

GEOLOGIC SETTING:

Mineralization reported to consist of white quartz containing pyrite, chalcopryite, and galena (136). Quartz float containing minor pyrite was found in the creek draining Mt. Doran.

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

136

NAME (other names): Lagoon Creek Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Anchorage A-4

NE 1/4 Sec 32 T 11N R 7E

Meridian: Seward

Geographic: This prospect is located on the west side of the east fork of Lagoon Creek at an elevation between 1,300 and 1,400 ft.

REFERENCE NUMBERS:

Map
A-33

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

No reported production.

RESOURCES: ND

OPERATING DATA:

A 15 ft adit oriented N45°W occurs at an elevation of 1,340 ft, 80 ft south of the shear zone described below.

GEOLOGIC SETTING:

Mineralization consists of quartz veins and stringers up to 1-ft wide in a well developed heavily iron stained vertical shear zone 12-ft wide striking N30-35°W. The quartz contains disseminated grains and massive pods of pyrite with lesser amounts of arsenopyrite and chalcopyrite. The shear zone occurs along the contact between a 50-ft wide granitic dike along the southwest wall, and hornfels along the northeast wall. Striations on the southwest wall rake 18° to 25° to the northwest. Chatter marks indicate right lateral offset along the shear.

BUREAU WORK:

This apparently unreported prospect was located and sampled in 1981. Data from seven samples (5736 A-G) are listed on table A-7. Mineralization is low grade but the shear is extensive and can be followed 2,000 ft or more along strike. Low mineral development potential.

REFERENCES:

None

TABLE A-7. - ANALYTICAL RESULTS - Lagoon Creek Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5736A	Q.V. Metased	Chip	6 ft	0.18	1.8	240	53	97	750	ND	ND	ND	ND	ND	ND	0.6 ft from NE wall of shear.
5736B	Q.V. Metased	Chip	6 ft	.03	0.4	170	16	72	37	ND	ND	ND	ND	ND	ND	6-12 ft from NE wall of shear.
5736C	Q.V.	Chip	12 in.	.08	1.3	245	21	25	650	ND	ND	ND	ND	ND	ND	Q.V. only sampled.
5736D	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5736E	Fe1 Plut	Grab	NA	.03	0.2	5	18	34	87	ND	<2	ND	ND	<5	<5	Granitic dike.
5736F	Fe1 Plut	Grab	NA	<.03	0.4	4	6	31	<10	ND	<2	ND	ND	<5	<5	Granite near adit.
5736G	Metased Q.V.	Grab	NA	<.03	0.2	86	6	87	<10	ND	ND	ND	ND	ND	ND	Hornfels along granite contact.

* ounces per ton

ND no data

NA not applicable

NAME (other names): Olson and Viette Prospect COMMODITIES: Au, Ag
Dominick Ledge

LOCATION: Quadrangle: Anchorage A-4 NW 1/4 Sec 32 T 11N R 7E
 Meridian: Seward
 Geographic: This prospect occurs on the north side of
 the cirque located at the head of the west
 branch of Lagoon Creek at an elevation of
 about 1,300 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-34	201	NA	228	NA	NA

HISTORY & PRODUCTION:

1912 - Originally located by Hogan Olson and Dominick Viette (86).

1913 - Developments reportedly consisted of a short crosscut and stripping (86).

No reported production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 47 ft crosscut oriented N20°W and a 129 ft drift oriented N28°E. A second 19 ft crosscut oriented N70°W is located 29 ft from the portal. An 8-ft deep flooded shaft occurs at the end of the 19 ft crosscut. Evidence of surface stripping along the vein occurs above the portal.

GEOLOGIC SETTING:

The mineralization consists of quartz along a 43-in. wide nearly vertical shear zone striking N28°E. Reportedly the shear can be traced for 2,000 ft. Portions are filled with up to 2 ft of quartz and calcite containing pyrite, sphalerite, chalcopryite, and gold. Host rocks are mostly metasandstone and metasilstone striking N70W and dipping 35°N. A medium grained felsic dike 3- to 4 1/2-ft wide is exposed above and east of the portal. The quartz terminates in the shear zone about 65 ft from the face of the drift.

BUREAU WORK:

This prospect was examined and sampled in 1979. Samples indicate that the mineralization is low grade. However, traces of precious metals occur across the entire shear zone irrespective of quartz content. Additional evaluation may be warranted. Data for seven samples (6283-6289) are listed on table A-8. Low mineral development potential.

REFERENCES:

6, 45, 48, 86, 110, 191-192

TABLE A-8. - ANALYTICAL RESULTS - Olson and Viette Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
6283	Metased	Chip	10 in.	.27	.2	30	15	80	600	ND	ND	ND	3	ND	ND	Sampled in drift.	
6284	Q.V.	Chip	43 in.	2.8	.6	15	20	80	350	ND	ND	ND	2	ND	ND	"	
6285	Metased	Chip	10 in.	.07	<.2	30	20	70	70	ND	ND	ND	7	ND	ND	"	
6286	Metased	Chip	5 in.	<.02	<.2	15	20	70	20	ND	ND	ND	4	ND	ND	Face of drift.	
6287	Metased	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
6288	Q.V.	Chip	10 in.	1.8	0.4	5	160	165	70	ND	ND	ND	3	ND	ND	Surface exposure.	
6289	Fel Plut Metased	Grab	NA	<.02	<.2	130	10	55	<10	ND	ND	ND	4	ND	ND	ND	

NAME (other names): Roth and Johnson Occurrence COMMODITIES: Au?
Fiord #1 and 2

LOCATION: Quadrangle: Anchorage A-4 SE 1/4 Sec 18 T 11N R 7E
Meridian: Seward
Geographic: This occurrence is located on the south side
of Harriman Fiord near the terminus of Toboggan
Glacier.

REFERENCE NUMBERS:

Map
A-35

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1938 - discovered by Al Roth and W. M. Johnson (136).

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings reported.

GEOLOGIC SETTING:

Mineralization is reported to consist of a vertical quartz vein from a few to 30-in. thick traceable for 600 ft along its north-south strike. The vein occurs between two felsic dikes and is hosted by a black slate and metasandstone. The quartz is white, banded with a few crystals in vugs and contains arsenopyrite, pyrite, chalcopyrite, and galena (136).

BUREAU WORK:

Searched for but not located in 1981. A 0.1 yd³ placer sample collected in the vicinity of the reported prospect recovered 10 colors and considerable sulfides including pyrite. Undetermined mineral development potential.

REFERENCES:

136

NAME (other names): Raggedie Ann Occurrence COMMODITIES: Au?

LOCATION: Quadrangle: Anchorage A-6 1/4 Sec 21 T 11N R 2E
 Meridian: Seward
 Geographic: This claim is located on Milk Creek just east
 of the Crow Pass Trail parking lot.

REFERENCE NUMBERS:

Map
A-36

Kx
NA

Tysdal
NA

MAS
NA

BLM
AA043941

MS
NA

HISTORY & PRODUCTION:

1981 - Originally located by D. L. Jones (194).

No reported production.

RESOURCES: ND

OPERATING DATA: No reported workings.

GEOLOGIC SETTING: ND

BUREAU WORK:

Not searched for. Undetermined mineral development potential.

REFERENCES:

194

NAME (other names): Jewel Mine

COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Anchorage A-6 SE 1/4 Sec 16 T 11N R 2E
Meridian: Seward

Geographic: The portal of the Jewel Mine is located 1/2 mi south of the Monarch veins at an elevation of 3,450 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-37	64	NA	TOT	NA	NA

HISTORY & PRODUCTION:

1912 - Originally located by Mr. Whitney about this time (191).

1931 - Owned by John Holmgren. Some development work performed (130).

1934 - Property sold to the Bruno Augustino Mining Co. (Monarch Mine) (140).

1937-42 - Main production period (see Monarch file).

Production is included with that of the Monarch Mine.

RESOURCES: 3,091 tons, 2 oz gold/ton, 1 oz silver/ton.

OPERATING DATA:

Development consists of 285 ft of drift, 3 raises, one of which reaches the surface, and stopping.

GEOLOGIC SETTING:

The mineralization at the Jewel Mine differs from that at the Monarch property in that the quartz vein contains considerably more sulfide, mostly arsenopyrite. Park (130) adequately describes the geology as follows:

"The country rock is banded argillite and graywacke with strike and dip the same as the vein, strike S30°E and dip 60°E. There are numerous intrusions of both medium and fine grained quartz diorite in the vicinity of this prospect, especially on the ridge east of it. The vein developed ranges in width from 2 in. to 1-ft and consists of quartz containing massive sulfides. Several other small veins are present on the property, but no work has been done on any of them."

Minerals identified in the Jewel vein include arsenopyrite, galena, chalcopryite, pyrite, pyrrhotite, molybdenite, and gold. Limonite, cerussite, and scorodite occur as oxidation products. Two small N-N15°W striking 70°E dipping veins containing pyrite, arsenopyrite, galena, and very minor gold are exposed just below the portal. The country rock near the portal is well bedded with a hornfelsic texture resulting from contact metamorphism by a nearby stock.

BUREAU WORK:

The lower Jewel adit was mapped and sampled in 1981. The upper level inaccessible. A bulk sample (7251) of the vein was collected and sent to the Bureau's laboratory in Albany, Oregon for metallurgical tests and evaluation in 1982. The presence of considerable arsenopyrite may create milling difficulties. Sample locations are shown on figure A-2 and data are listed for 15 samples (5558-5568, 7227, 7228, 7251, 7252) on table A-9. High mineral development potential for a small mine.

REFERENCES:

6, 29-30, 45, 48, 85, 110, 130, 141, 158, 166-168, 191-192

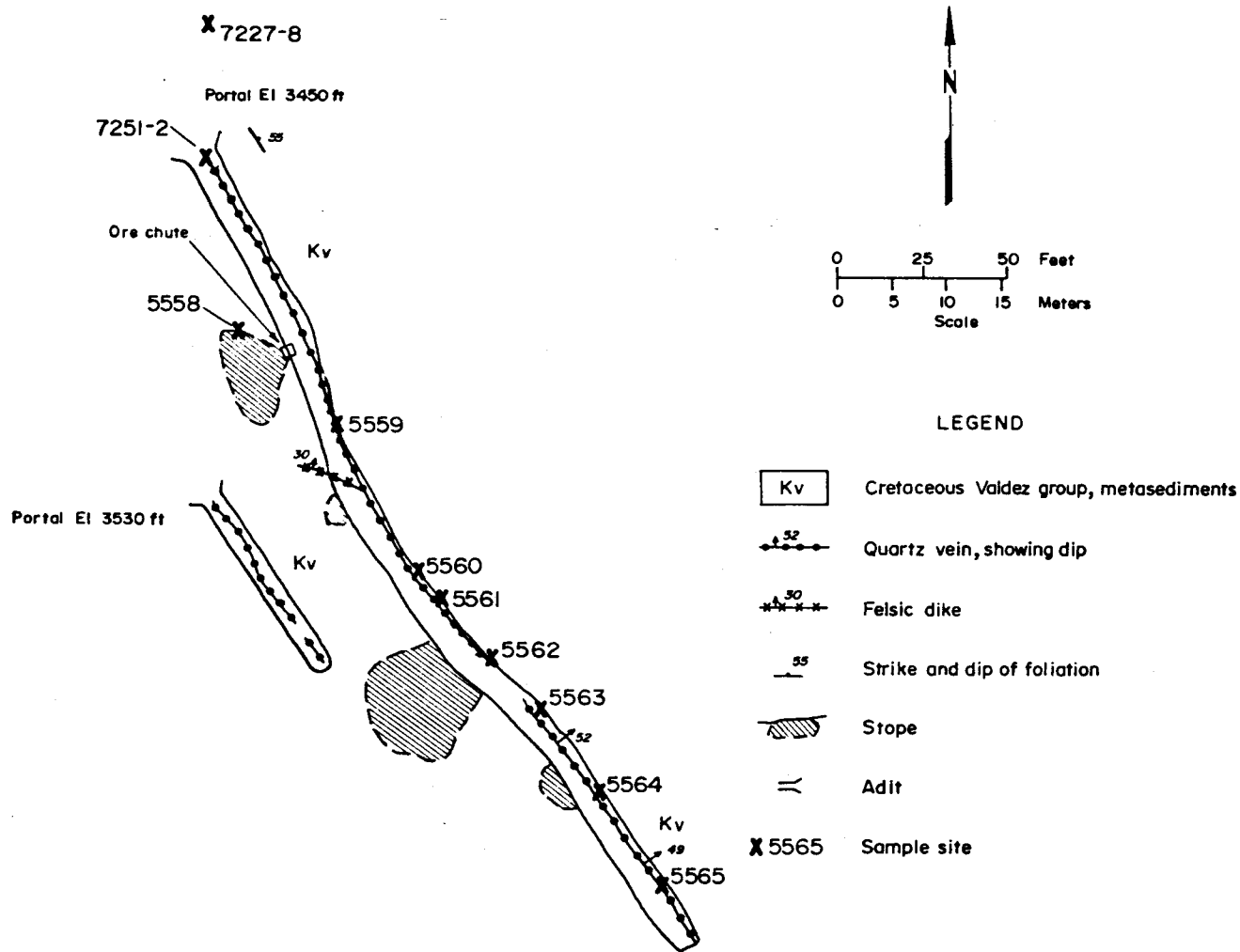


FIGURE A-2. Sample location map for the Jewel Mine workings (A-37).

TABLE A-9. - ANALYTICAL RESULTS - Jewel Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5558	Q.V.	Chip	6 in.	*.463 12	*0.3 7.8	180	1770	1070	10100	ND	<2	ND	ND	ND	ND	Jewel Mine Adit
5559	Q.V.	Chip	6 in.	*4.74	*2.1	135	1000	1520	1740	ND	ND	ND	ND	ND	ND	" "
5560	Q.V.	Chip	10 in.	57 *1.08	4.4 * .4	67	465	205	13200	ND	ND	ND	ND	ND	ND	" "
5561	Q.V.	Chip	6 in.	1.9	1.8	4	37	22	14850	ND	ND	ND	ND	ND	ND	" "
5562	Q.V.	Chip	4 in.	.24 *2.5	13 *1	29	980	805	13750	ND	<5	ND	ND	ND	ND	" "
5563	Q.V.	Chip	5 in.	29 *1.66	14 *.95	93	5070	6250	47300	ND	10	ND	ND	ND	ND	" "
5564	Q.V.	Chip	4 in.	15 *.764	3.6 *.47	18	2920	970	203000	ND	<2	ND	80	ND	ND	" "
5565	Q.V.	Chip	4 in.	*1.35 33	*0.59 3.4	35	650	1150	11850	ND	ND	ND	ND	ND	ND	" "
5566	Metased	Grab	NA	.08	0.4	76	14	140	180	ND	ND	ND	ND	ND	ND	Surface sample
5567	Q.V.	Chip	3 in.	*.455 .09	*0.22 5.3	20	510	760	14300	ND	<2	ND	ND	ND	ND	" "
5568	Q.V.	Chip	15 in.	*1.27 .04	*0.41 0.8	23	2700	1540	30900	ND	<2	ND	ND	ND	ND	" "
7227	Q.V.	Grab	NA	trace	ND	<10	<200	250	1100	ND	<5	ND	80	ND	ND	Jewel N-S vein.
7228	Q.V.	Chip	3 in.	ND	ND	<10	980	260	5300	ND	<5	ND	80	ND	ND	Jewel N-S vein.
7251	Q.V.	Grab	NA	*1.58	0.62*	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	Bulk sample Jewel Mine
7252	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Jewel Mine Portal

*ounces per ton

NAME (other names): Monarch Mine, Bruno Augustino COMMODITIES: Au, Ag, Cu, Mo, As
Crow Creek Mining Co. (Nettie 1 & 2)

LOCATION: Quadrangle: Anchorage A-6 NW 1/4 Sec 16 T 11N R 2E
Meridian: Seward

Geographic: This mine is located nearly 8 mi from Girdwood near the head and on the east side of Crow Creek Valley at elevations between 2,880 to 3,550 ft. The mine is accessible by six mi of improved dirt road leading from Girdwood to the Crow Creek Trailhead and by an additional 2 mi of U.S. Forest Service Trail which has been developed on the bed of an old mine road. Snow conditions would generally prevent access by other than tracked vehicles for 5-6 months of the year. Avalanches would be a serious hazard. The original mine buildings were destroyed by fire in 1950. However, much of the mill equipment remains on the east side of Crow Creek at an elevation of 2,800 ft.

REFERENCE NUMBERS:

Map
A-38

Kx
64

Tysdal
NA

MAS
TOT

BLM
AA014944-45

MS
NA

HISTORY & PRODUCTION:

- 1909 - Originally located by Conrad Hores (191).
- 1910-12 - Considerable development work performed (108).
- 1926 - Clyde Brenner relocated the property and transferred it to the Crow Creek Mining Co., Inc. (180).
- 1928 - Lease granted to H. I. Staser, who reassigned it to the Crow Creek Gold Corporation for \$50,000 (180).
- 1931 - Lease optioned to the Bruno Augustino Mining Co. Development work and mining commenced (130).
- 1934 - Jewel property purchased (141).
- 1937-42 - Both properties supplied ore to the mill (141).
- 1947 - Joe Danich acquired the property and began rehabilitating the mine and mill (7).
- 1976 - Nettie M c l a i m s located by Victor Conway (194).

Recorded Production: 4,938 oz gold, 996 oz silver (193). Production by year is listed on table 10.

Table A-10: Recorded Production, Monarch-Jewel Mine,
Girdwood Mining District, Alaska

Year of Production	Metal Recovered		Ore Processed (tons)
	Au	Ag	
pre 1926	unknown		unknown quantity
1926	66		"
1928	66		"
1933	209		"
1934	917	5	"
1935	1160	221	"
1936	709	184	915
1937	621	234	1247
1938	268	117	512
1939	105	47	290
1940	236	108	321
1941	536	59	184
1942	8	5	20
1945	8	4	12
1947	23	12	27
post 1947			none likely
Totals <u>1/</u>	4932	996	3528

1/ Average Grade (1936-1947) = 0.71 oz gold/ton
0.22 oz silver/ton

RESOURCES: Undetermined due to extensive stoping and inaccessibility of workings.

OPERATING DATA:

The Monarch mine developed two westerly striking, north dipping subparallel veins referred to as the north and south veins. Development in 1937 is reported (141) to have consisted of 950 ft of drift, 125 ft of crosscutting, 52 ft of winze, and 4 raises aggregating 100 ft (fig. A-3). The south vein is developed by two levels at elevations of 3,200 and 3,300 ft. The lower level is open to the face. The upper level is caved at the portal but can be entered through a stope which intersects the surface. The north vein was developed by 3,300 and 3,450-ft levels most of which are caved. A short 60-ft adit located about 500 ft north of the north vein at an elevation of 3,500 ft was driven to explore one of the north striking molybdenum, chalcopryite-bearing veins which can be traced from the portal of the south vein about 750 ft north-northeast to the 60-ft adit (fig. A-4). The majority of the stoping and production appears to have come from the upper level on the south vein.

GEOLOGIC SETTING:

The host rock in the vicinity of the Monarch mine consists of hornfelsed slate and graywacke intruded by felsic dikes and a granitic stock exposed 1/4 mile east of the mine. Foliation dips steeply and strikes north-northeast. Bedding, where discernible is variable and the rocks are extensively fractured apparently due to structural complications created by intrusion of the stock. The bedding strikes west and dips 40°N near the mine. Two sets of faults occur in the mine area. A west striking set of faults are usually occupied by highly fractured gold-bearing quartz bounded on one or both sides by 1/2- to 3-in. of gouge indicating that some of the deformation postdated the mineralization. The adjacent wall rocks are highly shattered, commonly greenish in appearance due to the presence of chlorite, and contain considerable pyrite with some anomalous precious metal values. The older north striking set of faults host molybdenite-chalcopryite bearing quartz veins and have less gouge along the walls.

Descriptions of 2 veins developed at the Monarch Mine and of the crosscutting veins are given by Park (130).

"The South vein ranges in width from 6 in. to about 4 ft, with an average of 9 in. in the tunnel. The strike is from east to S80°E, and the dip is 55°-70°N. The gangue is either massive or sugary quartz. In some places the vein splits into several nearly parallel stringers, separated by gangue or by sheared and partly oxidized wall rock. The quartz is commonly stained with limonite, and in places scattered spots of sulfides are visible. Many fragments of country rock are isolated in the quartz.

The North vein strikes about N80°E and dips about 70°N. Where exposed in the tunnel and in several surface cuts it is from 10 in. to 3-ft wide, with an average of 1 ft. The North vein appears to be somewhat better defined than the South vein and may be traced farther on the surface.

There are several small crosscutting veins 6-in. wide that strike a few degrees west of north and dip either east or west. These crosscutting veins appear to be faulted, and in the lower adit of the old workings the strike swings from due north to N45°E. The small veins striking north appear to be slightly older than the main North vein, as they are offset along unbroken quartz in the North vein. The junctions of the crosscutting veins with the South vein have not been seen, as they are obscured by a rock slide. The crosscutting veins of the north-south system are very persistent for this district, and one mineralized veinlet 6 to 8-in. wide was followed for more than 500 ft."

Minerals identified in the above described veins include quartz of at least two generations, calcite, galena, chalcopryrite, sphalerite, arsenopryrite, pyrrhotite, molybdenite, gold and silver (alloyed with the gold and associated with galena). Park (130) reported collecting a sample from one of the crosscutting veins which contained 0.26 pct molybdenum. Several samples (5358, 5557, 5631, 5637) collected from similar veins in 1981 contained up to 400 ppm molybdenum (table A-11) usually in association with chalcopryrite. Alteration products include limonite, cerussite, and abundant scorodite where arsenopryrite is prominent.

BUREAU WORK:

Extensive sampling and some surface mapping of the Monarch property was done in 1981 and 1982. Subsurface samples were collected where possible though most of the workings are inaccessible (figs. A-3 and A-4). Two sets of mineralized veins were identified on the property. The north and south veins, which strike westerly and contain gold values make up one set and a set of north to northeasterly striking veins containing chalcopryrite and molybdenite with little or no gold values make up the second set of veins. Sample data from 43 samples are listed on table A-11 and sample locations are shown on figures A-3 and A-4. High mineral development potential for a small mine.

REFERENCES:

6, 18, 28-30, 34, 45, 48, 85, 108, 110, 130, 136, 141, 147, 150, 156, 161, 163-169, 180, 191-194

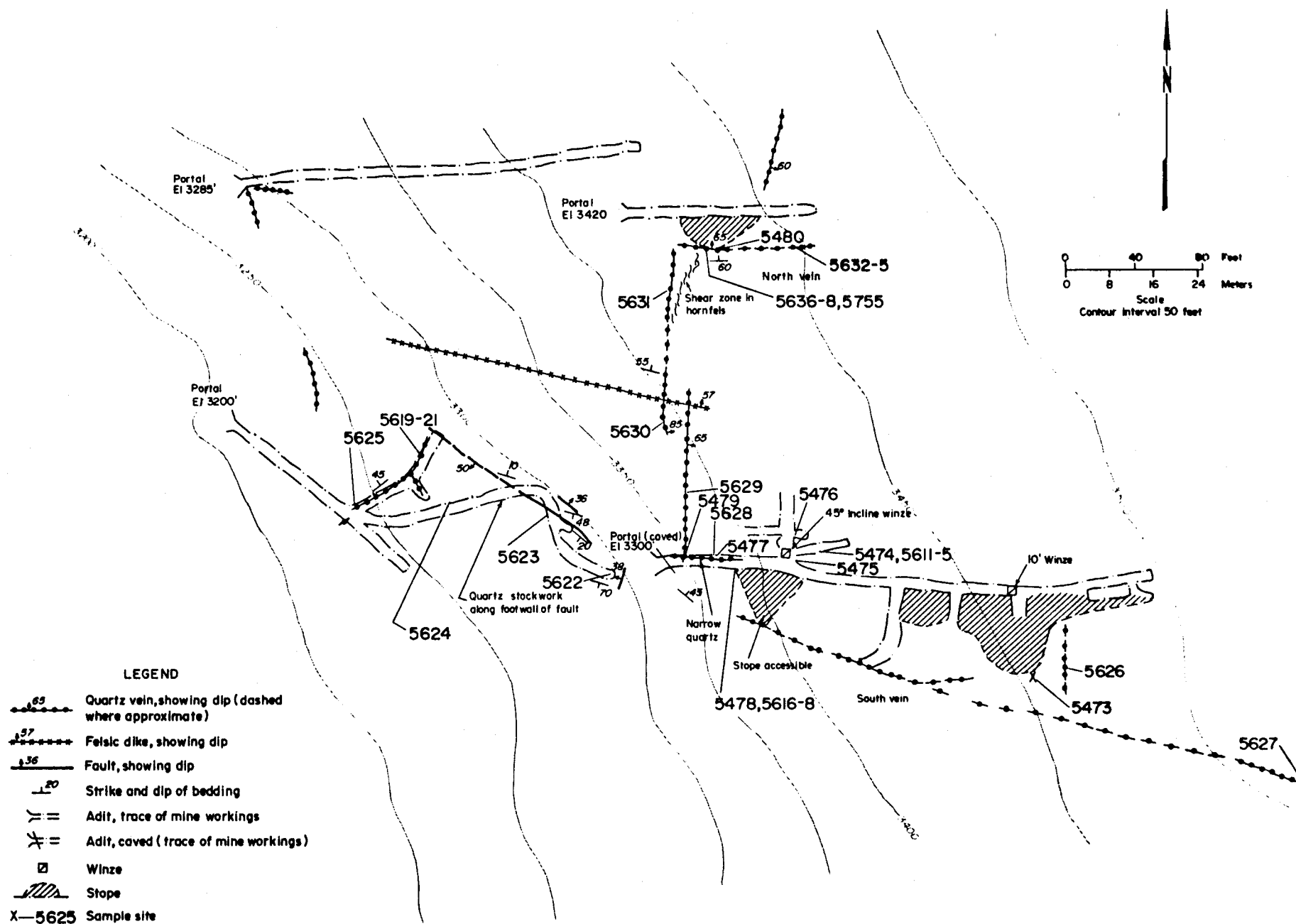


FIGURE A-3. Sample location map for the Monarch Ming workings associated with the north and south veins (A-38).

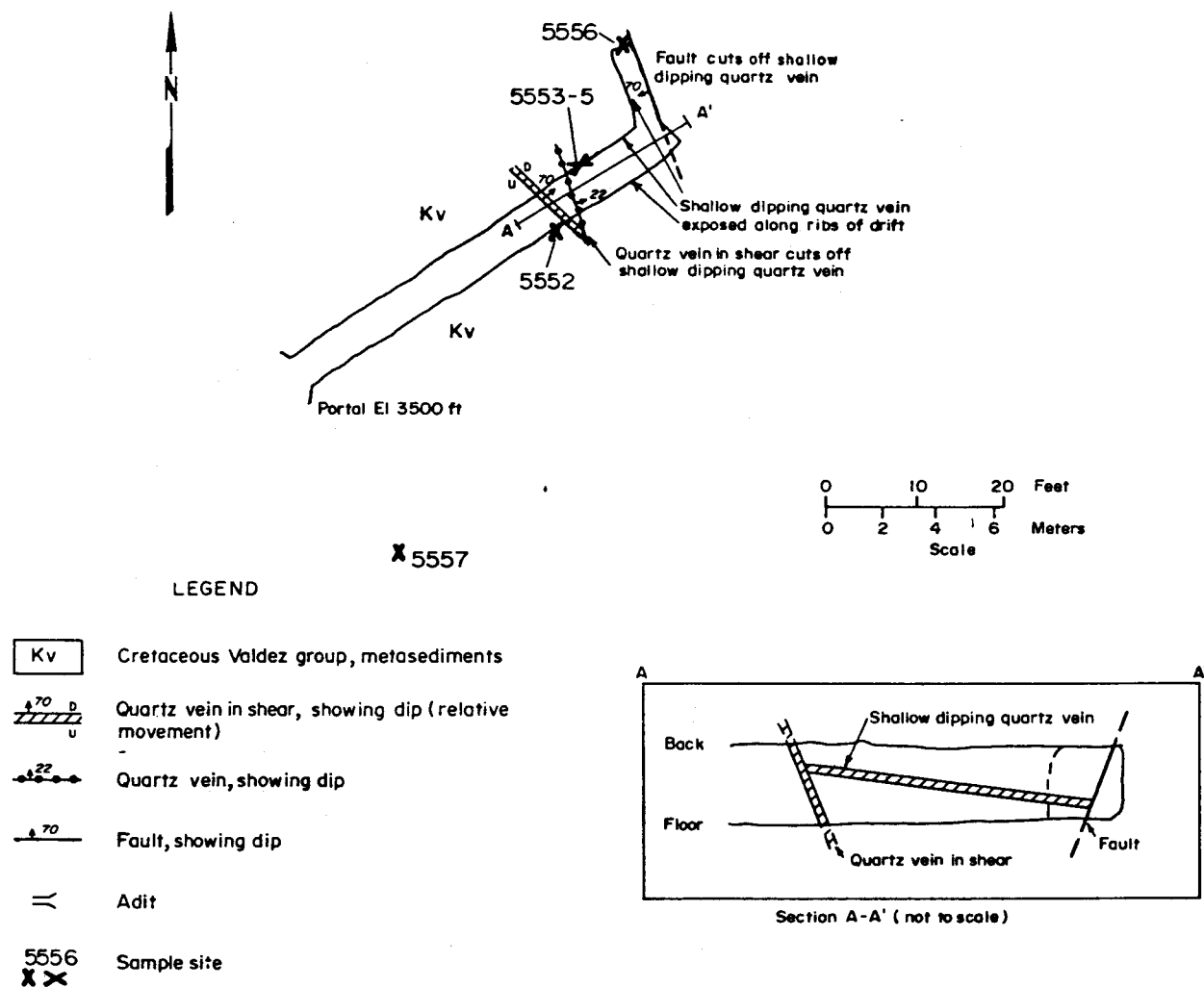


FIGURE A-4. Sample location map for a short Monarch Mine adit developed upon a crosscutting vein (A-38).

TABLE A-11. - ANALYTICAL RESULTS - MONARCH ARHE

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mn	Ni	Sb	Sn			
5473	Metased	Grab	NA	<0.03	1.4	100	19	ND	17	ND	6	ND	ND	ND	ND	South vein Monarch.	
5474	Q.V.	Chip	5 in.	3.55	3.0	25	7	ND	1,000	ND	<2	ND	ND	ND	ND	" "	
5475	Q.V.	Chip	4 in.	2.0	1.8	41	110	ND	2,500	ND	3	ND	ND	ND	ND	" "	
5476	Q.V.	Chip	4 in.	19.5	92	45	27	ND	2,600	ND	<2	ND	ND	ND	ND	" "	
5477	Metased	Grab	NA	<0.03	2.1	85	18	ND	34	ND	ND	ND	ND	ND	ND	" "	
5478	Metased	Grab	NA	0.15	1.6	375	22	ND	34	ND	ND	ND	ND	ND	ND	" "	
5479	Metased	Grab	NA	<0.03	0.44	770	18	ND	23	ND	ND	ND	ND	ND	ND	" "	
5480	Q.V.	Chip	18 in.	2.5	2.4	56	16	ND	2,000	ND	3	ND	ND	ND	ND	North vein Monarch.	
5481	Q.V.	Chip	24 in.	1.5	4.6	145	38	ND	2,000	ND	<2	ND	ND	ND	ND	" "	
5552	Q.V.	Chip	8 in.	2.53* 53	0.94* 3.6	32	230	56	13,400	ND	2	ND	ND	ND	ND	Monarch N45°W vein, 3500'.	
5553	Q.V.	Chip	10 in.	.19	.4	170	2	27	159	ND	<2	ND	ND	<5	<5	" "	
5554	Metased	Chip	4 in.	.03	2.6	2000	1	56	67	ND	6	ND	ND	ND	ND	Hanging wall	
5555	Metased	Chip	12 in.	.08	1.2	500	4	74	275	ND	3	ND	ND	ND	ND	Footwall	
5556	Q.V.	Chip	15 in.	.25	1.6	160	13	41	480	ND	39	ND	ND	ND	ND	"", N15°W vein	
5557	Q.V.	Grab	NA	.04	1.8	145	1	14	45	ND	400	ND	ND	ND	ND	"", N15°W vein	
5611	Q.V.	Chip	5 in.	20	5	20	550	400	1,500	ND	ND	ND	ND	ND	ND	Monarch south vein.	
5612	Metased	Chip	5 in.	<.02	<.5	25	10	120	ND	ND	ND	ND	ND	ND	ND	" "	
5613	Metased	Chip	5 in.	<.02	<.5	15	15	150	ND	ND	ND	ND	ND	ND	ND	" "	
5614	Metased	Chip	9 in.	<.02	<.5	20	20	140	ND	ND	ND	ND	ND	ND	ND	Monarch, south vein.	
5615	Metased	Chip	6 in.	<.02	<.5	15	10	140	500	ND	ND	ND	ND	ND	ND	" "	
5616	Metased	Chip	6 in.	.05	.11	21	24	84	420	ND	<2	ND	2	ND	ND	" "	
5617	Metased	Chip	6 in.	.06	.07	270	12	59	450	ND	<2	ND	3	ND	ND	" "	
5618	Q.V.	Chip	3 in.	1.2	1.2	2	5	11	520	ND	<2	ND	2	ND	ND	" "	
5619	Q.V.	Chip	2 in.	1.5	4.6	200	11	13	4,550	ND	8	ND	2	ND	ND	" "	
5620	Metased	Chip	6 in.	.08	.44	255	13	65	250	ND	<2	ND	3	ND	ND	" "	
5621	Metased	Chip	6 in.	0.13 0.46	2.4 4.6	410	13	36	127	ND	<2	ND	1	ND	ND	Monarch, south vein	
5622	Q.V.	Chip	5 in.	0.75	0.88	25	<7	33	2360	ND	ND	ND	ND	ND	ND	" "	
5623	Q.V.	Chip	24 in.	1.17 1.2	0.84 1.8	77	12	91	3900	ND	ND	ND	ND	ND	ND	" "	
5624	Metased	Grab	NA	.07 .02	<0.03 .2	48	15	63	32	ND	ND	ND	ND	ND	ND	" "	
5625	Q.V.	Grab	NA	0.35	0.34	43	9	1	1080	ND	ND	ND	ND	ND	ND	" "	
5626	Q.V.	Chip	2 in.	<.02	1.2	410	9	44	11	ND	ND	ND	ND	ND	ND	Monarch N-S vein	
5627	Q.V.	Chip	2 in.	9.32 .03	3.1 .06	38	11	32	183	ND	ND	ND	ND	ND	ND	Monarch south vein.	
5629	Q.V.	Chip	5 in.	<.02 <.03 <.03 .04 1.0	1.4 0.58 .04	390	10	2	156	ND	31	ND	ND	ND	ND	Monarch N-S vein	
5630	Q.V.	Chip	4 in.	<.03 <.02	0.7 1.0	125	5	1	34	ND	12	ND	ND	ND	ND	" "	
5631	Q.V.	Grab	NA	<.03 <.02	0.7 1.0	320	14	18	41	ND	44	ND	ND	ND	ND	" "	
5632	Q.V.	Channel	12 in.	1.06 1.6	0.45 0.8	5	5	1	4000	ND	<2	ND	ND	ND	ND	Monarch North vein	
5633	Metased Q.V.	Channel	14 in.	.01 1.2	1.2 2.0	82	17	63	6450	ND	<2	ND	ND	ND	ND	" "	
5634	Metased	Chip	12 in.	0.37 0.14	135 .6	33	13	65	390	ND	ND	ND	ND	ND	ND	" "	
5635	Metased	Chip	24 in.	0.12 0.11	1.93 0.4	19	12	89	175	ND	ND	ND	ND	ND	ND	" "	
5636	Q.V.	Chip	12 in.	234 6	92 1.8	54	37	21	4790	ND	<2	ND	ND	ND	ND	" "	
5637	Metased	Chip	12 in.	.24 0.3	4.6 6	495	12	31	2600	ND	34	ND	ND	ND	ND	" "	
5638	Metased	Chip	12 in.	0.33 0.31	3.68 4.0	385	12	73	2550	ND	ND	ND	ND	ND	ND	" "	
5755	Metased Q.V.	Channel	60 in.	0.07	3.9	275	8	56	1290	ND	<2	ND	ND	ND	ND	" "	

* ounces per ton

NAME (other names): Brenner Mine, Barnes
(Greenback Mining Co.)

COMMODITIES: Au, Ag, Mo, Cu, As

LOCATION: Quadrangle: Anchorage A-6 NW 1/4 Sec 16 T 11N R 2E

Meridian: Seward

Geographic: This mine is located adjacent to Crow Creek
at an elevation of 2,500 ft, 1,000 ft southwest
of the Monarch millsite.

REFERENCE NUMBERS:

Map
A-39

Kx
22

Tysdal
NA

MAS
TOT

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1931 - Minor production

1937 - Owned by Clyde Brenner, J. Campbell, and Stanley McCullam.
Report written by J. C. Roehm (141).

Production included with that of the Monarch Mine.

RESOURCES: Undetermined due to lack of vein exposure.

OPERATING DATA:

Workings include a 54 ft flooded inclined shaft and mill equipment on the east side of Crow Creek and a 175 ft drift caved at the portal on the west side of Crow Creek 300 ft south of the shaft. Roehm (141) described the mill machinery as follows:

"This season no ore was milled and machinery contained in the mill consists of a 10 by 12-in. Blake crusher, three 750-lb stamps, Gibson impact amalgamator, half-size Wilfley concentrating table, and a 5-H.P. Fairbanks Morse gas engine furnishes power. A two-stage Ingersoll-Rand portable compressor, run by a Waukesha air cooled gas engine, is used for mining."

GEOLOGIC SETTING:

Mineralization in the shaft consists of two veins striking N45°E and N35°E and dipping 65°N. A short ore shoot is reported to have been found where the two veins intersected. The main N45°E striking vein is 6- to 12-in. wide and contains calcite, galena, sphalerite, pyrite, pyrrhotite, arsenopyrite, and gold. Two sets of veins were identified by the Bureau nearby. One set strikes N60°E, dips 30-45°W and contains chalcopryite, galena, molybdenite, pyrite, and arsenopyrite. They are best exposed in the canyon between 2,500 and 2,600 ft above sea level north of this prospect. The second set strikes N-N15°E, dip 30-50°W, contain chalcopryite, molybdenite, pyrite, and arsenopyrite and are exposed in the steep canyon 1/4 mi north of the prospect at 3,100 ft.

BUREAU WORK:

The area was visited by the Bureau in 1981. However, samples of the vein were not collected due to flooding of the shaft and lack of vein exposure. Other veins in the vicinity containing galena, sphalerite, arsenopyrite, chalcopryite and molybdenite were sampled but are not believed to be related to the Brenner structure. Data for eight samples (5756-5763) are listed on table A-12. Moderate mineral development potential for a small mine.

REFERENCES:

6, 45, 48, 110, 130, 141, 191-192

TABLE A-12. - ANALYTICAL RESULTS - Brenner Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5756	Q.V.	Chip	6 in.	4.1	9.2	86	690	600	3000	ND	<2	ND	ND	ND	ND	N60°E vein.
5757	Metased.	Chip	4 in.	0.07	0.6	56	10	59	1355	ND	<2	ND	ND	ND	ND	Wallrock at above vein.
5758	Q.V.	Chip	7 in.	0.011*	0.31*	1370	82	185	700	ND	148	ND	ND	ND	ND	N60°E vein.
5759	Q.V.	Grab	NA	5.0	5.4	1240	655	455	1255	ND	18	ND	ND	ND	ND	N60°E vein.
5760	Q.V.	Grab	NA	18	17	835	86	510	1215	ND	<2	ND	ND	ND	ND	Ore dump Brenner.
5761	Stamp Mill	Pan Conc.	4 pans	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Mercury amal. and sulfides recovered
5762	Q.V.	Grab	NA	.02	1.0	115	3	13	57	ND	24	ND	ND	ND	ND	N15°E vein.
5763	Metased Q.V.	Grab	NA	.15	7.6	715	7	27	378	ND	125	ND	ND	ND	ND	N15°E vein.

* ounces per ton
ND no data

NAME (other names): Bahrenberg Mine COMMODITIES: Au, Ag, As, Pb, Cu, Zn
(Hottentot, Treasure Box)

LOCATION: Quadrangle: Anchorage A-6 SE 1/4 Sec 9 T 11N R 2E
Meridian: Seward
Geographic: This prospect is located 1/3 mile east of the
Crow Pass trail and 1/2 mile northeast of the
Monarch Mine (A-38) at an elevation of 4100 to
4,250 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-40	22	NA	TOT	NA	NA

HISTORY & PRODUCTION:

1910 - Originally staked as the Treasure Box claim by James Potehell (130).
1926 - Restaked by Henry Bahrenberg (130).
1928-29 - Minor production (130).
1931 - Arrastre mill constructed and operated (130).
1941 - Minor production. At least 7 tons shipped to smelter. One 3-ton
lot reported to net \$125 and one 3/4-ton lot netted \$145 (130).

Recorded production : 54 oz gold, 21 oz silver.

RESOURCES: 344 tons - 1.53 oz gold/ton, 2.2 oz silver/ton.

OPERATING DATA:

Accessible workings include a shallow surface cut at 4,250 ft, and a
short adit about 100 ft below. A 65 ft adit is reported but was not
located. A cabin is located in the basin below the workings.

GEOLOGIC SETTING:

Mineralization consists of a quartz-calcite vein occupying a fault zone
striking N65-80°W and dipping 70°N to vertical. Striations along the
hanging wall rake 20°W. Plucking suggests left lateral movement along
the fault. The quartz is up to 20-in. wide in places, averages about 8
in., contains numerous bedrock fragments, and is banded. A considerable
percentage of the vein is composed of disseminated and podiform masses
of sulfides including arsenopyrite, pyrite, galena, chalcopyrite,
sphalerite, and minor stibnite. Gold is apparently present in the
quartz and not in the calcite. The country rock consists of contact
metamorphosed, highly stained, and deformed metasediments having
variable strikes (N85°E-N55°W) with dips generally north at about 60°.
The contact zone of the stock is exposed 70 ft above the workings.
Several additional sulfide bearing quartz veins are exposed within and
adjacent to the stock. Some can be traced north and east under a
glacier.

BUREAU WORK:

The prospect was briefly examined and sampled in 1982. Data for five
samples (7219-21, 7225, 7226) are listed on table A-13. The area
appears to be highly mineralized and deserves additional evaluation.
However, the prospect is seldom accessible due to heavy snowfall and bad
weather. Moderate mineral development potential for a small mine.

REFERENCES:

6, 34, 45, 48, 108, 110, 130, 191-192

TABLE A-13. - Analytical Results - Bahrenberg Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
7219	Q.V.	Chip	20 in.	1.53*	2.2*	1100	8500	2000	34000	ND	<5	ND	70	ND	ND	Short adit 4150 ft	
7220	Q.V.	Select Grab	NA	4.45*	4.4*	4600	27000	6800	25000	ND	<5	ND	100	ND	ND	Short adit 4150 ft	
7221	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Short adit 4150 ft	
7225	Q.V.	Chip	12 in.	0.61	0.1	49	2300	760	16000	ND	<5	ND	100	ND	ND	Shallow cut 4250 ft	
7226	Fel Plut Q.V.	Random Chip	NA	ND	ND	<10	200	170	220	ND	<5	ND	92	ND	ND	4300 ft	

* ounces per ton
ND no data

NAME (other names): Eagle River Prospect,
Mayflower Lode

COMMODITIES: Ag

LOCATION: Quadrangle: Anchorage A-6 NW 1/4 Sec 15 T 12N R 2E
Meridian: Seward
Geographic: This prospect was reported to be located
on the south side of Eagle River near the
foot of the glacier in 1911.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
A-41	T64	NA	T00	NA	NA

HISTORY & PRODUCTION:

1911 - Discovered and located by J. P. Frisbie, William Murray, and
M. S. McMelan (108).
1926 - Restaked by Monarch Mining Co. (6).
1954 - Restaked by A. Danich, S. Voss, and B. Tilton (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Johnson (129) visited the prospect in 1911 and described the
mineralization as follows:

"The ore body consists of mineralized sheeted zones in the
massive graywacke. These zones have a north-south strike, dip
vertically, and have been traced about 400 ft on the south side
of the river. Their continuation on the north bank is
reported. They have a rusty appearance, resulting from the
decomposition of the iron sulphides.

Two of the zones, 50 ft apart, carry a few mineralized quartz
stringers of variable width. The easternmost and widest of
these sheeted zones has a width of about 50 ft, only part of
which is much fractured. The largest quartz stringer observed
lies near the eastern edge of this zone. It has a width of 1
to 6 in., but in places it widens to 10 or 12 in.

The gangue of the veins is quartz with a little calcite. Small
calcite veins also occur along joint planes in the graywacke.
The metallic minerals of the ore deposit are galena, pyrite,
sphalerite, arsenopyrite, chalcopryite, and a little
malachite. The mineral association is similar to that of the
gold quartz veins of the Kenai Peninsula. Galena is more
abundant than in most of the gold quartz prospects, and an
assay from this ledge reporting 0.05 oz gold and 24.80 oz
silver to the ton was probably made on a specimen consisting
principally of galena. No free gold was seen in any of the
specimens examined."

BUREAU WORK:

This prospect was searched for in 1981 but not located. Significant
mineralization was not identified in the area. Undetermined mineral
development potential.

REFERENCES:

6, 18, 34, 41-42, 45, 48, 108, 110, 130, 165, 191-192, 200

NAME (other names): Meares Glacier Occurrence COMMODITIES: Ag?

LOCATION: Quadrangle: Anchorage A-2 1/4 Sec 28 T 13N R 11E
 Meridian: Seward
 Geographic: This occurrence is located on the west side of
 Meares Glacier.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
<u>A-42</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the USGS.

No production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of heavily iron-stained 1-ft wide quartz vein containing pyrite. One grab sample contained 30 ppm silver, 700 ppm arsenic, and 10 ppm molybdenum.

BUREAU WORK:

Not searched for. Undetermined mineral development potential.

REFERENCES:

None

COMMODITIES: As?, Sb?

1/4 Sec 28 T 13N R 10E

Geographic: This occurrence is located about 2 1/2 mi west of Mount Castner.

Map Kx Tysdal MAS BLM MS
A-43 NA NA NA NA NA

1982 - Discovered and sampled by the USGS.

No production.

RESOURCES: ND

No reported workings.

Mineralization consists of a 4-in. wide quartz vein containing arsenopyrite and stibnite in granite. One USGS grab sample contained 3,000 ppm arsenic and 100 ppm antimony.

Not searched for. Undetermined mineral development potential.

None

NAME (other names): Unnamed Occurrence COMMODITIES: As?, Sb?

LOCATION: Quadrangle: Anchorage A-2 1/4 Sec 28 T 13N R 10E
 Meridian: Seward
 Geographic: This occurrence is located about 2 1/2 miles
 west of Mount Castner.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
<u>A-44</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the USGS.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of a 4-in. wide quartz vein containing arsenopyrite and stibnite in granite. One USGS grab sample contained 3,000 ppm arsenic and 100 ppm antimony.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

This report.

APPENDIX B. - Lode Deposit Descriptions Blying Sound Quadrangle,
Peninsula Study Area, Alaska

Map No.	Name
BS-7	Talus Bay Occurrence.
BS-8	Reynolds-Alaska Prospect.
BS-9	Featherbed #1 prospect.
BS-10	Featherbed #2 prospect.
BS-11	Peterson Prospect.
BS-12	Iron Mask Prospect.
BS-13	Fairview Prospect.
BS-14	Cape Resurrection Occurrence.
BS-15	Leitzke Prospect.

* None of these deposits were examined by Bureau personnel during the course of this study as they are located outside of the CNF boundary. However, similar mineralization could occur with the CNF.

NAME (other names): Talus Bay Occurrence COMMODITIES: Cu

LOCATION: Quadrangle: Blying Sound NW 1/4 Sec 24 T 02S R 01E
Meridian: Seward
Geographic: Located near the entrance to Talus Bay.

REFERENCE NUMBERS:

Map
BS-7

Kx
NA

Tysdal
103

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND.

OPERATING DATA:

None.

GEOLOGIC SETTING:

Mineralization consists of a malachite stain on a cliff wall observed from a helicopter (184).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

184

NAME (other names): Reynolds - Alaska COMMODITIES: Cu
Prospect

LOCATION: Quadrangle: Blying Sound ___ 1/4 Sec 22 T 02S R 01E
Meridian: Seward
Geographic: Located near the center of the Resurrection
Peninsula west of Safety Cove.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
BS-8	9	105	12	NA	NA

HISTORY & PRODUCTION:

1908 - Located by Reynolds-Alaska Development Co. (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of chalcopyrite disseminated in a shear zone.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

2, 6, 46, 64, 108, 184, 191-192

NAME (other names): Featherbed No. 1 COMMODITIES: Cu
Prospect
LOCATION: Quadrangle: Blying Sound NW 1/4 Sec 28 T 02S R 01E
Meridian: Seward
Geographic: Located near the head of Humpy Cove on the
beach.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
BS-9	4	106a	11	NA	NA

HISTORY & PRODUCTION:

1915 - Located by E. F. Pitman and A. C. Gould (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Small pits near shore reported (108).

GEOLOGIC SETTING:

Martin (108) reported finding pyrite and chalcopyrite in float.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 18, 46, 64-65, 108, 184, 191-192

NAME (other names): Featherbed No. 2
Prospect

COMMODITIES: Cu

LOCATION: Quadrangle: Blying Sound
Meridian: Seward

SW 1/4 Sec 22 T 02S R 01E

Geographic: Located 1 1/2 mi east of the Featherbed No. 1
Prospect.

REFERENCE NUMBERS:

Map
BS-10

Kx
4

Tysdal
106b

MAS
11

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1915 - Located by E. F. Pitman and A. C. Gould (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Minor digging reported by Martin (108).

GEOLOGIC SETTING:

Mineralization is reported (108) to consist of a shear zone containing four chalcopyrite-bearing stringers 7-in. wide and assaying 14 to 19 pct copper. The shear zone strikes a little east of north, is nearly vertical and has been traced from an elevation of 2,500 to 3,500 ft.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 18, 46, 64-65, 108, 184, 191-192

NAME (other names): Peterson Prospect COMMODITIES: Cu, Zn

LOCATION: Quadrangle: Blying Sound ___ 1/4 Sec 33 T 02S R 01E
 Meridian: Seward
 Geographic: Located on the waters edge on the east side
 of the south arm of humpy cove.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
BS-11	7	107	10	NA	NA

HISTORY & PRODUCTION:

1908 - Located by W. Hart, L. Mize, and H. Tollison (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Two 35 ft adits reported (108).

GEOLOGIC SETTING:

Mineralization consists of two vertical north-northwest striking brecciated and sheeted zones cemented by quartz and calcite containing sphalerite, pyrite, epidote, and chalcopyrite. The zones are 5- to 6-ft wide. The country rock is a fine grained diabase.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 18, 46, 64, 108, 184, 191-192

NAME (other names): Iron Mask Prospect COMMODITIES: Cu, Zn

LOCATION: Quadrangle: Blying Sound 1/4 Sec 21 T 03S R 01E
Meridian: Seward
Geographic: Located on the east side of Resurrection Bay
opposite the south end of Renard Island.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
BS-12	6	108	8	NA	NA

HISTORY & PRODUCTION:

1908 - Located by H. E. Ellsworth and the Reynolds-Alaska Development Co. (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Short adit reported (108).

GEOLOGIC SETTING:

Mineralization consists of a fractured tuffaceous breccia recemented by quartz and calcite containing pyrite, chalcopryite, and sphalerite. USGS samples averaged 1.1 pct copper across a 13-ft wide, 98-ft long zone.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 18, 46, 64, 108, 184, 191-192

NAME (other names): Fairview Prospect

COMMODITIES: Cu

LOCATION: Quadrangle: Blying Sound
Meridian: Seward

___ 1/4 Sec 22 T 03S R 01E

Geographic: Located about 3/4 mi east of Resurrection Bay
and 3 mi north of the tip of Cape Resurrection.

REFERENCE NUMBERS:

Map
BS-13

Kx
8

Tysdal
109

MAS
9

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1908 - Located by E. F. Pitman and A. C. Gould (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Ten foot adit reported (108).

GEOLOGIC SETTING:

Mineralization consists of two breccia zones in greenstone recemented by quartz containing pyrite, marcasite, and chalcopyrite. A quartz vein up to 10-ft wide is reported to occur (108) 1/4 mi northeast of the adit. A 6-ft wide band in one of the breccia zones is reported (108) to have assayed 9.8 pct copper.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 18, 46, 64, 65, 108, 184, 191-192

NAME (other names): Cape Resurrection
Occurrence

COMMODITIES: Ag, Cd, Co, Pb, Zn

LOCATION: Quadrangle: Blying Sound
Meridian: Seward

___ 1/4 Sec 28 T 03S R 01E

Geographic: Located on the east side of the Resurrection
Peninsula 2 mi north of the tip of Cape Resurrection.

REFERENCE NUMBERS:

Map
BS-14

Kx
NA

Tysdal
110

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - Reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported (184) to consist of a 2-ft wide brecciated shear zone in sheeted basalt dikes containing quartz, pyrite, chalcopryrite, and galena. A USGS sample contained 3 ppm silver, 70 ppm cadmium, 0.15 pct copper, 0.3 pct lead, and 0.92 pct zinc.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

184

NAME (other names): Lietzke Prospect

COMMODITIES: Cu

LOCATION: Quadrangle: Blying Sound
Meridian: Seward

___ 1/4 Sec 33 T 03S R 01E

Geographic: Located on the east side of Resurrection Bay
about 1/2 mi north of Cape Resurrection.

REFERENCE NUMBERS:

Map
BS-15

Kx
5

Tysdal
111

MAS
7

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1908 - Located by W. R. Lietzke (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported (108) to consist of a brecciated zone in
diabase recemented by quartz containing pyrite and minor chalcopyrite.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 46, 64, 108, 184, 191-192

Map No.	Name	Map No.	Name
S-121	Stewart and Fish Prospect.	S-169	Billings Glacier Molybdenum Occurrence.
S-122	Gray Brothers Prospect.	S-170	Billings Glacier Quartz Occurrence.
S-123	Eldorado Prospect.	S-171	Golden Giant Prospect.
S-124	Cascade Bay Occurrence.	S-172	Bullion Ledge Occurrence.
S-125	Fish, Collins, and Stewart Prospect.	S-173	Upper Carmen River Occurrence.
S-126	Kavanaugh and Boon Prospect.	S-174	Hillside, Banta, and Sullivan Occurrence.
S-127	Tolson and Stanton Prospect.	S-175	Whittier Occurrence.
S-128	Carter Prospect.	S-176	Earnest King Occurrence.
S-129	Golden Eagle Prospect.	S-177	Emerald Bay Occurrence.
S-130	Keynote Prospect.	S-178	Singleton, O'Neill Occurrence.
S-131	Griset Prospect.	S-179	Cove Creek Occurrence.
S-132	Golden Wonder No. 1 Prospect.	S-180	Portage Pass Mining Co. Occurrence.
S-133	Mountain Prospect.	S-181	Portage Pass Occurrence.
S-134	Fronenberg and Bloom Prospect.	S-182	Northland Glacier Occurrence.
S-135	Mayflower Prospect.	S-183	Kings River Occurrence.
S-136	Nugget Prospect.	S-184	Kings Bay Prospect.
S-137	Gold Queen Prospect.	S-185	Wolverine Glacier Occurrence.
S-138	Whistler Prospect.	S-186	W. Talus Bay Occurrence.
S-139	Beauty Bird Prospect.	S-187	Talus Bay Occurrence.
S-140	Sweepstake Prospect.	S-188	N. Talus Bay Occurrence.
S-141	North Star Prospect.	S-189	Day Harbor Occurrence.
S-142	Morning Star Prospect.	S-190	Copper Chief, Iron Cap, and Real Thing Prospects.
S-143	Vincent Occurrence.	S-191	Day Harbor Prospect.
S-144	Anderson and Yannes Occurrence.	S-192	Godwin Glacier Occurrence.
S-145	Harris Occurrence.	S-193	4th of July Creek Occurrence.
S-146	Hobo Bay Occurrence.	S-194	Redman and Guyot Occurrence.
S-147	Granite Mine.	S-195	No. 69 Prospect.
S-148	Snowball Prospect.	S-196	Rusty Occurrence.
S-149	Reed, Gauthier, and Cooper Prospect.	S-197	Resurrection Bay Mining Co. Prospect.
S-150	Everson Occurrence.	S-198	Northern Light Prospect.
S-151	Yakima Ledge Prospect.	S-199	Last Chance Prospect.
S-152	Sweepstake Prospect.	S-200	Cannibal, Dimp, and others Occurrence.
S-153	Singletary - O'Neill Prospect.	S-201	Mile 4 Prospect.
S-154	Skypilot Ledge Occurrence.	S-202	Seward Limestone Occurrence.
S-155	Harriman Glacier Occurrence.	S-203	Mile 7 1/2 Occurrence.
S-156	Mineral King Mine.	S-204	Homestake Ledge Prospect.
S-157	George and McFarland Prospect.	S-205	Brewer Alaska Prospect.
S-158	Banner Prospect.	S-206	Redman Creek Occurrence.
S-159	Hummer Vein Prospect.	S-207	Placer Creek Occurrence.
S-160	Bennett, Bailey, and Heinz Occurrence.	S-208	Grayson Lode Prospect.
S-161	Alaska Glacier Occurrence.	S-209	Mizpah Ledge Prospect.
S-162	Tomboy Ledge Mine.	S-210	Hale, Peel, and Lynholm Occurrence.
S-163	Lansing Mine.	S-211	Porcupine Quartz Prospect.
S-164	Dunklee and Reilly Prospect.	S-212	Porcupine Creek Occurrence.
S-165	Passage Canal Occurrence.	S-213	Overland Occurrence.
S-166	Lone Star Prospect.	S-214	Primrose Mine.
S-167	Poe Bay Occurrence.	S-215	Porcupine, Graystone, and Homestake Ledge Prospects.
S-168	Portage Bay Mine.	S-216	Peak 5309 No. 1 Occurrence.

Map No.	Name	Map No.	Name
S-217	Peak 5309 No. 2 Occurrence.	S-265	Fresno Prospect.
S-218	Peak 5309 No. 3 Occurrence.	S-266	Shell Prospect.
S-219	Devil Club Ledge and Lakeside Prospects.	S-267	Teresa Prospect.
S-220	Brown Bear Prospect.	S-268	Seward Gold Prospect.
S-221	Seward Bonanza Prospect.	S-269	Sunrise Uranium Occurrence.
S-222	Andy Simons Mtn Occurrence.	S-270	Bench Creek Occurrence.
S-223	Dunrovin Prospect.	S-271	Brewster Prospect.
S-224	Falls Creek Mine.	S-272	Ready Bullion Prospect.
S-225	Skeen-Lechner Mine.	S-273	Keno and Hiway Occurrence.
S-226	East Point Mine.	S-274	Tributary Creek Occurrence.
S-227	Crown Point Mine.	S-275	Gilpatrick Prospect.
S-228	Sollars Prospect.	S-276	Hillside Prospect.
S-229	Grant Lake Occurrence.	S-277	Donaldson Creek Occurrence.
S-230	Moose Creek Occurrence.	S-278	Silvertip Quarry.
S-231	Case Mine.	S-279	Gold Leaf Prospect.
S-232	Rec 3-9 Occurrence.	S-280	Julia Occurrence.
S-233	Ballaine and Nelson Occurrence.	S-281	Gulch Creek No. 1 Occurrence.
S-234	Kenai Lake Occurrence.	S-282	Robin No. 1 Occurrence.
S-235	Vindicator Occurrence.	S-283	Gulch Creek No. 2 Occurrence.
S-236	K and T Prospect.	S-284	Gulch Creek No. 3 Occurrence.
S-237	Good Luck Prospect.	S-285	SS Lode Occurrence.
S-238	Black Devil Occurrence.	S-286	Lyon Den No. 1 Occurrence.
S-239	Snowshoe Occurrence.	S-287	Babe Occurrence.
S-240	Goodnews Prospect.	S-288	Palmer Creek No. 1 Occurrence.
S-241	Crescent Lode Occurrence.	S-289	Hirshy-Lucky Strike Mine.
S-242	Nakoa Lode Prospect.	S-290	Teddy Bear Prospect.
S-243	Yellow Jacket Prospect.	S-291	Palmer Creek #2 Occurrence.
S-244	Kaffir Prospect.	S-292	Hirshy and Carlson Mine.
S-245	Golden Zenith Occurrence.	S-293	Sunshine Prospect.
S-246	Lois Lode Occurrence.	S-294	Downing Mine.
S-247	J & J Occurrence.	S-295	Robin Red Breast Prospect.
S-248	Juneau Lake Occurrence.	S-296	Kenai Star Prospect.
S-249	McMillan Prospect.	S-297	Robinson and Bowman Prospect.
S-250	Henry Creek Prospect.	S-298	Red Hat Occurrence.
S-251	Swetman Prospect.	S-299	Nearhouse Mine.
S-252	Hatcher Prospect.	S-300	Mighty Prospect.
S-253	Gilpatrick Dike Mine.	S-301	Gold Stamp Prospect.
S-254	Summit Prospect.	S-302	Coon and Plowman Prospect.
S-255	Heaston-Oracle Mine.	S-303	Taylor Prospect.
S-256	Ronan and James Mine.	S-304	Lucky Lode Prospect.
S-257	Apex Prospect.	S-305	Wildhorse Quarry.
S-258	Johnson Prospect.	S-306	Cowan Mountain Occurrence.
S-259	Colorado Prospect.	S-307	Johnson Creek Prospect.
S-260	North Star Prospect.	S-308	Hope Mountain Occurrence.
S-261	Chickaloon River Occurrence.	S-309	Hope Road Quarry.
S-262	Johnson and Skeen Prospect.	S-310	Connolly Prospect.
S-263	Mascot and Iron Mask Occurrences.	S-311	Tina Baby Occurrence.
S-264	Independence Prospect.	S-312	Kenai Lu Prospect.

APPENDIX C--Continued

Map No.	Name
S-313	Slate Creek No. 1 Occurrence.
S-314	Slate Creek No. 2 Occurrence.
S-315	Indian Occurrence.
S-316	Bird Point Prospect.
S-317	Peterson Creek Quarry.
S-318	Peterson Creek Occurrence.
S-319	Lansing Mine (S-163) Occurrence.
S-320	Mills Creek Occurrence.
S-321	R.S. and S. Quarry.

TABLES

- C- 1. Analytical results Gray Brothers Prospect (S-122).
- C- 2. Analytical results Eldorado Prospect (S-123).
- C- 3. Analytical results Cascade Bay Occurrence (S-124).
- C- 4. Analytical results Fish, Collins, and Stewart Prospect (S-125).
- C- 5. Analytical results Golden Eagle Prospect (S-129).
- C- 6. Analytical results Keynote Prospect (S-130).
- C- 7. Analytical results Golden Wonder No. 1 Prospect (S-132).
- C- 8. Analytical results Mountain Golden Wonder #9 Prospect (S-133).
- C- 9. Analytical results Mayflower Prospect (S-135).
- C-10. Analytical results Nugget Prospect (S-136).
- C-11. Analytical results Whistler Prospect (S-138).
- C-12. Analytical results Sweepstake Prospect (S-140).

TABLES--Continued

- C-13. Analytical results North Star Prospect (S-141).
- C-14. Analytical results Morning Star Prospect (S-142).
- C-15. Analytical results Granite Mine (S-147).
- C-16. Analytical results Sweepstake Prospect (S-152).
- C-17. Analytical results Singletary - O'Neil Prospect (S-153).
- C-18. Analytical results Harriman Glacier Occurrence (S-155).
- C-19. Analytical results Mineral King Mine (S-156).
- C-20. Analytical results George and McFarland Prospect (S-157).
- C-21. Analytical results Banner Prospect (S-158).
- C-22. Analytical results Hummer Vein Prospect (S-159).
- C-23. Analytical results Bennett, Bailey, and Heinz Occurrence (S-160).
- C-24. Analytical results Tomboy Ledge Mine (S-162).
- C-25. Analytical results Lansing Mine (S-163).
- C-26. Analytical results Passage Canal Occurrence (S-165).
- C-27. Analytical results Portage Bay Mine (S-168).
- C-28. Analytical results Billings Glacier molybdenum occurrence (S-169).
- C-29. Analytical results from bulk samples Billings Glacier molybdenum occurrence (S-169).
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NAME (other names): Stewart and Fish Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3
Meridian: Seward

1/4 Sec 36? T 9N R 9E

Geographic: The exact location is unknown. It is reported to be located on the peninsula east of Squaw Bay and south of Eaglek Bay (86).

REFERENCE NUMBERS:

Map
S-121

Kx
234

Tysdal
166

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Stewart and Fish (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings reported.

GEOLOGIC SETTING:

Mineralization consists of a gold-bearing quartz vein. Bedrock in the vicinity of this occurrence consists of metasilstone striking N60°E and dipping 60°N (86).

BUREAU WORK:

Searched for in 1979 but not located. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 96, 184, 191

NAME (other names): Gray Brothers Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3

NW 1/4 Sec 15 T 9N R 9E

Meridian: Seward

Geographic: This prospect is located on the south side of the divide between Derickson Bay and the stream tributary to Papoose Cove on Squaw Bay at an elevation between 1,500 and 1,800 ft. The vein is located several hundred ft west of the Contact Fault.

REFERENCE NUMBERS:

Map
S-T22

Kx
223

Tysdal
165

MAS
55

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by the Gray Brothers (86).

No reported production.

RESOURCES: 200,000 tons, <0.02 oz gold/ton.

OPERATING DATA:

Workings include a 15 ft trench at 1,750 ft above sea level, a 40 ft adit at 1,550 ft above sea level and a prospect pit. Three unopened cases of dynamite are in the adit.

GEOLOGIC SETTING:

Mineralization consists of a quartz vein occupying a 10- to 20-ft wide shear zone striking N30°E and dipping near vertical. The quartz pinches and swells from 2 in. to 10 ft along a strike length of 1,000 ft. Wider sections contain large angular bedrock fragments. Very few sulfides are present in the majority of the quartz. Some pyrite, arsenopyrite, and pyrrhotite were identified locally. The vein can be traced from an elevation of 1,900 ft to 1,500 ft above sea level. The host rocks consist of interbedded green-gray slate, phyllite and metasandstone.

BUREAU WORK:

This prospect was examined and sampled in 1979. Numerous quartz veins occur in the area spacially associated with the Contact Fault. Those examined appear relatively barren though trace amounts of gold are present in the main vein. Data for seven samples (4182-4188) are listed in table C-1. Low mineral development potential.

REFERENCES:

6, 50, 86, 96, 184, 191-192

TABLE C-1. - ANALYTICAL RESULTS - Gray Brothers Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4182	Q.V.	Grab	NA	<.02	<.2	ND	ND	ND	100	ND	ND	ND	ND	ND	ND	ND	
4183	Q.V.	Chip	8 ft	.55	<.2	ND	ND	ND	500	ND	ND	ND	ND	ND	ND	ND	
4184	Q.V.	Chip	10 ft	.16	<.2	ND	ND	ND	1100	ND	ND	ND	ND	ND	ND	ND	
4185	Metased	Grab	NA	<.02	.2	ND	ND	ND	350	ND	ND	ND	ND	ND	ND	East wall of vein.	
4186	Alluvium	StrSed	NA	ND	<1	150	20	<200	<500	ND	ND	ND	<100	ND	ND	ND	
4187	Alluvium	StrSed	NA	ND	<1	150	20	<200	<500	ND	ND	ND	<100	ND	ND	ND	
4188	Alluvium	StrSed	NA	ND	<1	150	20	<200	<500	ND	ND	ND	<100	ND	ND	ND	

ND no data

NAME (other names): Eldorado Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward B-3
Meridian: Seward

1/4 Sec 15 T 9N R 9E

Geographic: This prospect occurs near the head and on the south side of Derickson Bay, on the west side of Eaglek Bay, at an elevation of 600 ft. The Contact Fault is located approximately 500 ft west of the reported prospect location.

REFERENCE NUMBERS:

Map
S-123

Kx
2T2

Tysdal
164

MAS
53

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Frank White and Chris Pederson (86).

1914 - Development work totaling 375 ft completed by the Alaska-Washington Gold Mining Co. (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to total 375 ft and include drifts and crosscuts (86).

GEOLOGIC SETTING:

Mineralization consists of a 12- to 48-in. wide quartz vein striking N40°E, dipping 75°NW and traceable for 400 ft along strike. The vein is developed along a shear zone in slate and metasandstone. The shear contains considerable shattered sedimentary debris as well as quartz. The ore is bluish gray in appearance and contains calcite, arsenopyrite, pyrrhotite, pyrite, and gold. Assays of up to 5 oz gold/ton have been reported (86). A greenish schistose rock occurs along the Contact Fault several hundred feet east of this prospect.

BUREAU WORK:

Searched for in 1979 and 1981. No workings were located but stream sediment and rock samples were collected in the area (4174-4180, 5117 A-C). Several veins were located and fine gold was panned from a nearby stream. A 40-ft wide malachite-stained shear zone along the Contact Fault was sampled (5717C) and found to contain slightly anomalous copper and silver values. Mineralization is believed to be similar to that exposed on the Gray Brothers Prospect (S-122) which appears to be low grade. Data are listed on table C-2. Low mineral development potential.

REFERENCES:

6, 50, 83, 86-87, 184, 191-192

TABLE C-2. - ANALYTICAL RESULTS - Eldorado Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
4174	Alluvium	StrSed	NA	.06	<.2	55	45	145	ND	ND	ND	ND	ND	ND	2	ND	
4175	Alluvium	StrSed	NA	<.1	<.2	40	45	125	ND	ND	ND	ND	ND	ND	ND	ND	
4176	Alluvium	StrSed	NA	<.02	<.2	50	45	135	ND	ND	ND	ND	ND	ND	ND	ND	
4177	Alluvium	StrSed	NA	<.2	<.2	45	40	130	ND	ND	ND	ND	ND	ND	ND	ND	
4178	Alluvium	StrSed	NA	<.02	<.2	65	30	120	ND	ND	ND	ND	ND	ND	ND	ND	
4179	Alluvium	Pan Conc	NA	<.1	<.2	60	35	120	ND	ND	ND	ND	ND	ND	ND	6 very fine colors/pan.	
4180	Q.V.	Grab	NA	<.02	.2	ND	ND	ND	50	ND	ND	ND	ND	ND	ND	Float sample	
5717A	Alluvium Placer	O.lyd	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16 colors recovered.	
5717B	Q.V.	Grab	NA	.03	<.03	20	17	29	35	ND	ND	ND	ND	ND	ND	Float.	
5717C	Q.V. Metased	Grab	NA	<.03	1.4	150	33	145	81	ND	ND	ND	ND	ND	ND	40 ft wide shear along Contact fault.	

ND no data

NAME (other names): Cascade Bay
Occurrence

COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Seward D-3 SW 1/4 Sec 2 T 9N R 9E
Meridian: Seward

Geographic: This occurrence is located near the top of the divide between Derickson and Cascade Bays at an elevation of 2,400 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-124	NA	NA	NA	NA	NA

HISTORY & PRODUCTION:

1981 - Discovered and sampled by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of several quartz veins spacially associated with the Contact Fault. Quartz veins west of the summit labeled 2477, on the USGS Seward D-3 Map, are hematite-stained, folded, boudined, resistant to weathering, and occur in extensively folded, faulted and locally schistose metasediments. They often occur in an echelon patterns associated with 20- to 200-ft wide shear zones striking N35°E and dipping 70°-80°NW. Metallic minerals occur as disseminated grains in the quartz and adjacent host rock and as podiform massive sulfides in the quartz. Sulfides identified included pyrite, arsenopyrite, and chalcopyrite. One quartz vein contained feldspar and biotite.

Quartz samples east of peak 2477 tended to be somewhat softer and more poorly exposed. One 3-ft wide vein sampled (5720H) had a strike of N30°E and dip of 70°NW for about 20 ft and then turned abruptly east-west. This vein appears to have been cut off at both ends by faults. The vein contained arsenopyrite and pyrite. The host rocks appear somewhat less schistose than those west of the peak. Other quartz veins occur in the area. Structural information indicates that the dominant longitudinal movement is in a right-lateral sense indicating that the nearby Contact Fault has some horizontal as well as vertical component of movement.

BUREAU WORK:

This occurrence was located, examined, and sampled (5720 A-J) by the Bureau in 1981. Data are listed on table C-3. Mineralization appears to be low grade. This occurrence represents a northeast extension of the mineral belt located along the west side of the Contact Fault and together with anomalous placer samples collected from streams further northeast (Siwash Bay, Jonah Bay) suggests the need for additional exploration along the Contact Fault. Low mineral development potential.

REFERENCES:

None.

TABLE C-3. - ANALYTICAL RESULTS - Cascade Bay Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5720A	Metased	Grab	NA	<.03	0.1	82	19	97	17	ND	ND	ND	ND	ND	ND	West side peak 2477	
5720B	Q.V. Metased	Grab	NA	<.03	0.3	225	26	77	25	ND	ND	ND	ND	ND	ND	West side peak 2477	
5729C	Q.V. Metased	Grab	NA	<.03	0.8	66	16	35	170	ND	ND	ND	ND	ND	ND	West side peak 2477	
5720D	Q.V.	Grab	NA	<.03	1.2	5	9	19	<10	ND	ND	ND	ND	ND	ND	West side peak 2477	
5720E	Q.V.	Grab	NA	0.03	0.3	14	9	29	<10	ND	ND	ND	ND	ND	ND	West side peak 2477	
5720F	Massive Sulfide	Q.V. Grab	NA	0.13	0.2	395	24	79	580	ND	35	ND	ND	ND	ND	West side peak 2477	
5720G	Feldspar	Select Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	West side peak 2477	
5720H	Q.V.	Select Grab	NA	0.04	<.03	2	8	26	2600	ND	ND	ND	ND	ND	ND	East side peak 2477	
5720I	Q.V.	Chip	36 in.	0.04	0.1	2	8	21	1700	ND	ND	ND	ND	ND	ND	East side peak 2477	
5720J	Q.V.	Chip	30 in.	<.03	<.03	2	7	29	20	ND	<2	ND	ND	<5	<5	East side peak 2477	

ND no data

NAME (other names): Fish, Collins and
Stewart Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3
Meridian: Seward

1/4 Sec 31 T 9N R 8E

Geographic: This prospect is reported to be located on the
southwest portion of Esther Island at an
elevation of 800 ft, one mile from shore (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-125	207	167	57	NA	NA

HISTORY & PRODUCTION:

1912 - Originally located by G. Q. Fish, Philip Collins and E. D. Stewart.
40 ft adit driven (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include a 40 ft adit.

GEOLOGIC SETTING:

Mineralization reportedly consists of a bluish white quartz vein up to
2-ft wide developed along the contact zone of the Esther pluton (86).
The quartz occupies a shear zone striking N7-22°E and dipping 85°W to
vertical. Gouge occurs along both walls of the vein. Metallic minerals
include pyrrhotite, chalcopyrite, and gold.

BUREAU WORK:

Searched for in 1979. No workings were found. Several rock samples and
two stream sediment samples were collected along the contact between the
pluton and metasediments (4198-4205). A 40-in. wide pyrite-bearing
quartz vein striking N25°E and dipping vertically was also sampled
(4201). This vein could be similar to that reported on the Fish,
Collins, and Stewart prospect. Significant mineralization was not
identified. Data are listed on table C-4. Undetermined mineral
development potential.

REFERENCES:

6, 50, 86, 184, 191-192

TABLE C-4. - ANALYTICAL RESULTS - Fish, Collins, and Stewart Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4198	Pluton	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4199	Metased	Grab	NA	<.02	.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2	ND	ND
4200	Alluvium Q.V.	StrSed	NA	<.1	1.6	30	20	85	<500	ND	ND	ND	ND	ND	ND	ND	ND
4201	Metased	Chip	40 in.	.04	.2	75	5	50	30	ND	ND	ND	ND	ND	ND	ND	ND
4202	Alluvium	StrSed	NA	<.1	<.2	15	5	65	ND	ND	ND	ND	ND	ND	ND	ND	ND
4203	Metased	Grab	NA	.05	.2	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Kavanaugh and Boon
(Esther Group)

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4
Meridian: Seward

1/4 Sec 36 T 9N R 7E

Geographic: This prospect is reported to occur on the west side of Esther Island, a short distance south of a large bay, 1,500 ft from the beach at an elevation of 500 ft. The actual location is not known. The prospect may be located just south of Granite Bay.

REFERENCE NUMBERS:

Map
S-126

Kx
208,95

Tysdal
167

MAS
58

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911 - Originally located by H. C. Kavanaugh and August Boon.

1938 - Owned by Mr. & Mrs. William Harris who had rediscovered the prospect in 1914 (86).

Report written by J. C. Roehm (146).

Optioned to D. J. McRae for \$10,000 (146).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of an 8 ft adit.

GEOLOGIC SETTING:

Mineralization is reported to consist of stringers and irregular masses of sugary quartz along a 5- to 6-ft wide shear zone striking N40°E and dipping 85°NW. A poorly defined zone of bluish quartz along the west wall of the adit is said to contain considerable free gold. The quartz also contains chlorite, pyrrhotite, galena, chalcopryite, and pyrite. Three channel samples collected by Roehm (146) contained 0.11, 0.08 and 0.75 oz gold/ton and a trace of silver.

BUREAU WORK:

This prospect was searched for in 1979 and 1980 but could not be located. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 146, 184, 191-192

NAME (other names): Tolson and Stanton Prospect COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3 1/4 Sec 23 T 10N R 8E
 Meridian: Seward

Geographic: This prospect is reported to be located on the west slope of the mountain 2 mi south of Golden at an elevation between 1,500 and 1,600 ft (86).

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-127	217	162	59	NA	NA

HISTORY & PRODUCTION:

1911 - Originally located by Michael Stanton and C. P. Tolson (86).

1912-13 - Development of a 155 ft adit, stripping, and construction of an arrastre mill and cabin (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to consist of a 155 ft adit, stripping, an arrastre mill, and cabin (86).

GEOLOGIC SETTING:

The deposit consists of stringers and lenses of quartz, up to 2-ft wide in a shear zone 2- to 5-ft wide traceable for 300 ft. The shear strikes northeast and dips vertically. Metallic minerals include arsenopyrite, sphalerite, pyrite, pyrrhotite, and gold. The quartz also contains calcite and chlorite. The host rocks are interbedded slate and metasandstone (86).

BUREAU WORK:

Searched for but not located in 1979 and 1980. Undetermined mineral development potential.

REFERENCES:

6, 50, 86-87, 184, 191-192

NAME (other names): Carter Prospect
(OK 1, New York)

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3
Meridian: Seward

1/4 Sec 23 T 10N R 8E

Geographic: This prospect is reported to be located on the west slope of the mountain 1 1/2 mi south of Golden at an elevation of 1,750 ft (86).

REFERENCE NUMBERS:

Map
S-128

Kx
216

Tysdal
161

MAS
60

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911 - Originally located by H. M. Carter (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

A short open cut reported in 1913 (86).

GEOLOGIC SETTING:

Mineralization is reported to consist of a series of quartz stringers and lenses occupying parallel shears which strike N70°E to due north and dip 85°W, to carry considerable fine gold, and to assay well (86).

BUREAU WORK:

Searched for but not located in 1979 and 1980. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

NAME (other names): Golden Eagle Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3

NW 1/4 Sec 14 T 10N R 8E

Meridian: Seward

Geographic: This property is located on the south end of the small lake 1/2 mi south of Golden. The mill occurs just above water level and the workings between 500 and 600 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-129	2T3	160	61	AA033322-25	NA

HISTORY & PRODUCTION:

1911 - Originally located by Charles Anderson and Louis Little. A 1-ton boulder shipped to Valdez was reported to have yielded about 2 oz of gold (86).

1913 - Ore shipment made (86).

1914 - A 5-stamp mill installed and operated briefly (87).

1915-16 - Assessment filed (88).

1973 - Relocated by Edward E. Ellis (6).

1974 - Relocated by D. J. Buckmeier (6).

1979 - Located or purchased by Sam Pestinger (6).

1981 - Assessment work filed by S. Pestinger (6).

Recorded production: Gold 28 oz, silver 1 oz (193).

RESOURCES: 21,000 tons, <0.1 oz gold/ton.

OPERATING DATA:

Workings include a 135 ft drift, 60 ft of crosscuts and two 50 to 60 ft stopes at 500 ft above sea level, a 45 ft adit, and a collapsed mill. A 5-stamp Vulcan Iron Works mill, an iron grizzly and an engine or gear box are all that remain at the mill. Two 1-in. cables extend uphill to the workings in a S20°W direction from the mill.

GEOLOGIC SETTING:

Mineralization in the adit consists of quartz veins and stringers from a few in. to 4-ft thick. The quartz is milky, often vuggy and crumbles easily. Numerous angular blocks of slate and metasandstone as well as chlorite are present in the vein. The vein has been described as a stringer lode (11). It strikes N20°E, dips vertically and can be traced for 500 ft. The host rocks are interbedded black slate and dark gray metasandstone. Few sulfides are present in the ore but pyrrhotite and arsenopyrite have been recognized. Assays are reported to range from 0 to several ounces gold/ton (86).

BUREAU WORK:

The main adit was examined and sampled by the Bureau in 1979 (6300-6304). Data are listed in table C-5. Grades appear to be low. Low mineral development potential.

REFERENCES:

6, 50, 86-88, 184, 191-194

TABLE C-5. - ANALYTICAL RESULTS - Golden Eagle Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
6300	Q.V.	Chip	38 in.	0.57	<.2	50	20	85	550	ND	ND	ND	ND	ND	ND	500 ft level.
6301	Q.V.	Chip	17 in.	0.99	.2	40	20	50	140	ND	ND	ND	ND	ND	ND	500 ft level.
6302	Q.V.	Chip	29 in.	2.1	<.2	5	15	50	80	ND	ND	ND	ND	ND	ND	500 ft level.
6303	Metased	Chip	10 in.	<.02	<.2	30	10	90	70	ND	ND	ND	ND	ND	ND	500 ft level.
6304	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500 ft level.

ND no data

NAME (other names): Keynote Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3

NW 1/4 Sec 15 T 10N R 8E

Meridian: Seward

Geographic: The Keynote prospect is reported to be located on the north bank of a small stream about 1 mi southwest of Golden at an elevation of about 100 ft (86).

REFERENCE NUMBERS:

Map
S-130

Kx
210

Tysdal
NA

MAS
62

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Edwin Grisct (86).

1915 - A crew of 15 men reportedly began sinking a shaft (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Minor stripping and a shallow shaft are reported.

GEOLOGIC SETTING:

Mineralization is reported to consist of a shattered appearing quartz vein ranging from 3- to 6-ft wide (86). Sulfides are scarce and only arsenopyrite and pyrite have been identified. The quartz is said to pan fine gold.

BUREAU WORK:

Searched for in 1979. No workings were found. However, a stream sediment sample (2328) containing anomalous gold and silver values was collected from a stream draining the prospect. Data are listed on table C-6. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 88, 184, 191-192, 194

TABLE C-6. - ANALYTICAL RESULTS - Keynote Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
2328	Alluvium	StrSed	NA	0.06	10	30	50	130	30	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Griset Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3

SW 1/4 Sec 11 T 10N R 8E

Meridian: Seward

Geographic: The Griset prospect is located along the shore near Golden.

REFERENCE NUMBERS:

Map
S-131

Kx
210

Tysdal
158

MAS
62

BLM
AA029917-20

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Edwin Griset (86).
6 ft shaft sunk and a 10 ft adit driven (86).

1974 - Relocated by Darrel Buckmeier (194).

1979 - Evidence of assessment filed by D. Buckmeier (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 10 ft adit located just west of the post office site and a 6 ft shaft near the shore.

GEOLOGIC SETTING:

Mineralization in the shaft consists of a quartz vein up to 5-ft thick, averaging 18 in. in the shaft, striking northeast and dipping north. The host rock is described as shattered graywacke. The adit was used to explore a 33-in. wide shear zone striking N65°E and dipping 55°N traceable for 300 ft. Quartz stringers and veins pinch and swell along the structure. Country rock is reported to be slate and metasandstone (86).

BUREAU WORK:

The vicinity of this prospect was examined in 1979. Evidence of stripping, a caved adit, and one barren appearing quartz vein were located. No samples were taken. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192, 194

NAME (other names): Golden Wonder No. 1 Prospect COMMODITIES: Au, Ag
(Lucky Swede, Mountain)

LOCATION: Quadrangle: Seward D-3 SW 1/4 Sec 12
 SE 1/4 Sec 11 T 10N R 8E
 Meridian: Seward
Geographic: This prospect is reported to be at the base of
 the ridge a short distance east of Golden at
 an elevation of 350 ft (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-132	215	156	NA	AA029926-27	NA
				AA031208-211	

HISTORY & PRODUCTION:

1911 - Originally located by Charles Anderson and Louis Little (86).

1912-13 - One ton of ore shipped to Tacoma (86).

1974 - Relocated by Darrel Buckmeier (6).

1981 - Portions or all of this property may currently be owned by Sam Pestinger who filed assessment for 1981 (194).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Workings in 1913 were reported to consist of a 10 ft adit with a 15 ft approach, stripping at 350 ft above sea level and minor stripping at 450 ft and 800 ft above sea level (86).

GEOLOGIC SETTING:

Mineralization on the Golden Wonder prospect consists of 1- to 10-in. wide quartz stringers and veins containing minor calcite recementing slate and metasandstone fragments along a 2 1/2- to 4-ft wide shear zone striking N60°E and dipping 70°N. The shear has been traced for 1,000 ft along strike. The quartz is described as being hard and bluish with banding parallel to the wall in places. Metallic minerals include galena, arsenopyrite, and gold. Average grades were reported to be low. However, assays of up to 4 1/2 oz gold/ton were also reported (86).

Similar mineralization occurs on the Lucky Swede prospect but assays were reported to be lower.

BUREAU WORK:

Searched for but not located in 1979. A sediment sample (4197) was collected from what appeared to be tailings in the vicinity of the property (4197) which contained anomalous arsenic values. Data are listed on table C-7. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192, 194

TABLE C-7. - ANALYTICAL RESULTS - Golden Wonder No. 1 Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4197	Tailings	Sed.	NA	<.02	<.2	10	10	65	160	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Mountain, Golden Wonder No. 9 COMMODITIES: Au, Ag
Prospect

LOCATION: Quadrangle: Seward D-3 NW 1/4 Sec 12 T 10N R 8E
Meridian: Seward
Geographic: This prospect is located on the divide northeast
of Golden about 1 1/2 mi from the townsite at
an elevation between 1,440 and 1,740 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-133	215	154	64	AA03T208-11	NA

HISTORY & PRODUCTION:

1911 - Originally located by Charles Anderson and Louis Little (86).

1974 - Possibly relocated by D. Buckmeier and S. Pestinger (6).

1981 - Assessment filed by S. Pestinger (194).

No reported production. Minor production possible.

RESOURCES: 500 tons, 0.7 oz gold/ton.

OPERATING DATA:

Workings include an accessible 121 ft adit at 1,640 ft, a caved adit at 1,430 ft, and a 30 ft open cut at 1,740 ft above sea level.

GEOLOGIC SETTING:

The geologic setting and mineralization are described by Johnson (86):

"The country rock is chiefly slate with some massive graywacke. The beds are folded and sheared. The ore lies in a well-defined fissure striking southwestward and dipping 70°N. The fissure ranges in width from 8 to 44 in., and is traceable for over 250 ft. The fissure filling consists of crushed slate, in some places with little or no quartz. In other places quartz occurs as long and narrow stringers and lenses lying parallel to the walls of the fissure. At the open cut the fissure is 44-in. wide and contains a 3 ft quartz lens about 100 ft long. The hanging wall side of this large quartz lens is smooth and shows horizontal slickensides, and there is an inch of gouge on the hanging wall.

The veins are composed of quartz and small amounts of calcite and chlorite. The gold is free. The sulfides are present as tiny specks in the ore and include pyrrhotite, pyrite, chalcopyrite, arsenopyrite, and sphalerite. Limonite occurs as a surface alteration product of the sulfides. Assays ranging from 1.5 to 4.8 oz gold/ton are reported on this ore."

Mineralization appears to die out at the face of the adit.

BUREAU WORK:

This prospect was sampled (4971-4976, 6240-6245) and mapped by the Bureau in 1979 and 1980. Sample locations, except 6244, are shown on figure C-1 and data are listed on table C-8. High grade samples were collected, but mineralization appears to be of limited extent. Additional evaluation including drilling to determine if mineralization extends deeper may be warranted. Moderate mineral development potential for a small operation.

REFERENCES:

6, 50, 86, 184, 191-192, 194

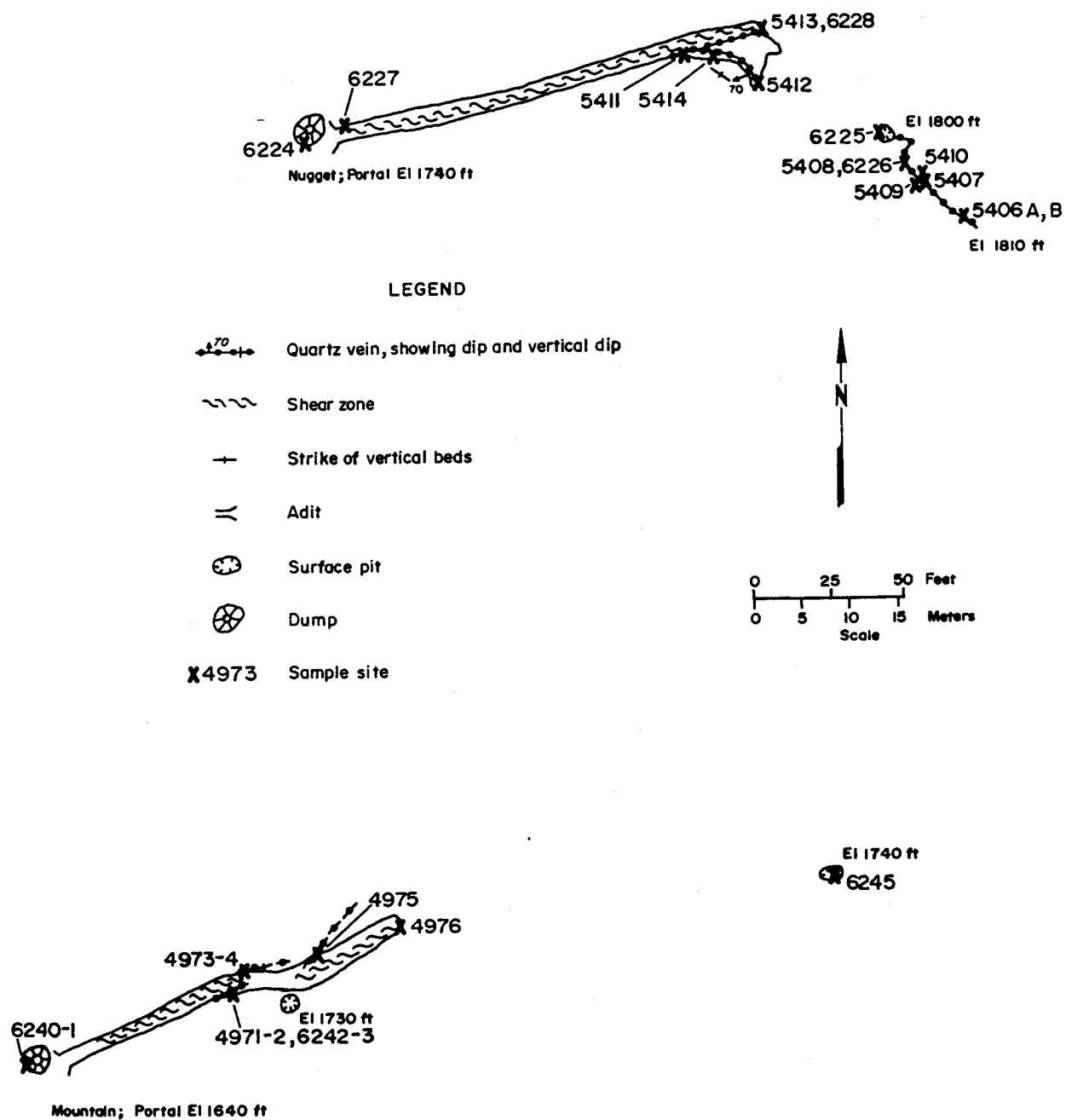


FIGURE C-1. Sample location map for the Mountain (S-133) and Nugget (S-136) Prospects.

TABLE C-8. - ANALYTICAL RESULTS - Mountain, Golden Wonder No. 9 Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4971	Q.V.	Chip	6 in.	26	12.5	21	76	73	360	ND	ND	ND	ND	ND	ND	1,640 ft level.
4972	Metased	Chip	4.5 ft	1.4	0.95	42	29	96	100	ND	ND	ND	ND	ND	ND	1,640 ft level.
4973	Q.V.	Grab	NA	19	22	40	170	135	28	ND	ND	ND	ND	ND	ND	1,640 ft level.
4974	Metased	Chip	3 ft	0.65	0.65	50	32	20	240	ND	ND	ND	ND	ND	ND	1,640 ft level.
4975	Q.V.	Chip	6 in.	0.45	0.46	30	51	36	26	ND	ND	ND	ND	ND	ND	1,640 ft level.
4976	Q.V.	Chip	6 ft	.03	0.3	50	32	20	30	ND	ND	ND	ND	ND	ND	1,640 ft level.
6240	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,640 ft level.
6241	Q.V.	Select Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dump 1,640 ft level.
6242	Q.V.	Chip	10 in.	55	32	25	600	110	20	ND	ND	ND	ND	ND	ND	1,640 ft level.
6243	Metased	Chip	6 in.	.76	.2	50	20	95	20	ND	ND	ND	ND	ND	ND	1,640 ft level.
6244	Q.V.	Chip	2 ft	12	16	15	105	40	30	ND	ND	ND	ND	ND	ND	1,430 ft level.
6245	Q.V.	Grab	NA	6.7	2.2	20	100	150	20	ND	ND	ND	ND	ND	ND	1,740 ft pit.

ND no data

NAME (other names): Frondenberg and Bloom Prospect COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3 SE 1/4 Sec 2 T 10N R 8E

Meridian: Seward

Geographic: This claim is reported to be located on the divide northeast of Golden at an elevation of 1,150 ft near the Mountain Property (S-133)(86).

REFERENCE NUMBERS:

Map
S-T34

Kx
2T4

Tysdal
T53

MAS
65

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Originally located by Axel Frondenberg and Charles Bloom.

No reported production (86).

RESOURCES: ND

OPERATING DATA:

Minor stripping is reported.

GEOLOGIC SETTING:

Mineralization reportedly consists of a quartz vein 10- to 18-in. wide over a strike length of 45 ft along a shear zone striking N80°E and dipping 60°N. The host rock is metasandstone. A few fine colors are reportedly obtainable from the quartz by panning (86).

BUREAU WORK:

Searched for but not located in 1979. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

NAME (other names): Mayflower Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3

SW 1/4 Sec 1 T 10N R 8E

Meridian: Seward

Geographic: This prospect is located on the crest of the divide northeast of Golden at an elevation of 1,300 ft.

REFERENCE NUMBERS:

Map
S-135

Kx
2T8

Tysdal
152

MAS
65

BLM
NA

MS
NA

HISTORY & PRODUCTION:

Originally located in the early 1900's (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

One small 6x9-ft open cut is present.

GEOLOGIC SETTING:

The mineralization consists of northeast striking 70°NW dipping quartz veins from 2- to 8-in. wide in an 8-ft wide shear zone. The host rock is slate and metasandstone with foliation striking N12°E. Minor arsenopyrite is present.

BUREAU WORK:

The Bureau located and sampled (6230-6231) this prospect in 1979. Data are listed in table C-9. Low mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

TABLE C-9. - ANALYTICAL RESULTS - Mayflower Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
6230	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6231	Q.V.	Grab	NA	0.75	0.2	5.0	15	5	850	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Nugget Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3

NW 1/4 Sec 12 T 10N R 8E

Meridian: Seward

Geographic: This prospect is located on the divide northeast of Golden at an elevation of 1,700 ft 300 to 350 ft N16°E of the Mountain adit.

REFERENCE NUMBERS:

Map
S-136

Kx
219

Tysdal
155

MAS
66

BLM
AA033620-23

MS
NA

HISTORY & PRODUCTION:

1911 - Originally located by Stephen Roe (86).

1912-13 - 175 ft adit and a shallow shaft completed (86).
Small shipment of ore made (86).

1914 - New adit reported to be driven (87).

1915 - 5-stamp mill and an aerial tram constructed but later removed (25).

1916 - 45 ft of additional adit driven (89).

1976 - Relocated by F. S. Pettyjohn (6).

1979-80 - Possibly purchased by Sharon L. Francis. Current ownership is questionable and believed to be staked with the Mountain Group.

1981 - Evidence of assessment filed (194).

No recorded production. Minor production reported (86).

RESOURCES: 900 tons, 0.3 oz gold/ton, <0.1 oz silver/ton.

OPERATING DATA:

Workings include one accessible 160 ft adit at an elevation of 1,740 ft, a shallow shaft at an elevation of 1,800 ft, and trenching. An additional adit may be present but was not located by the Bureau.

GEOLOGIC SETTING:

Mineralization is similar to that exposed on the Mountain property and may be along the same or a parallel structure. The main quartz vein ranges from 4- to 20-in. wide and occurs along a 4- to 30-in. wide shear zone striking N80°E and dipping 75°N. The vein curves southward near the end of the adit and at the shaft on the surface (figure C-1). The best mineralization appears to be restricted to the northwesterly striking portion and surface exposures of the vein. The quartz contains some calcite and chlorite and is locally banded. Metallic minerals include very minor galena, pyrrhotite, chalcopyrite, pyrite, and gold. The host rock consists of interbedded, calcareous slate, and metasandstone with foliation striking N40°E and dipping 80°NW.

BUREAU WORK:

This property was mapped and sampled (6224-6228, 5406-5414) by the Bureau in 1979 and 1980. Sample locations are plotted on figure C-1 and data are listed on table C-10. With the exception of two high grade assays obtained from surface exposures of the vein at the 1,800 ft level the mineralization appears to be of low grade. Moderate mineral development potential for a small mine.

REFERENCES:

6, 25, 50, 86-89, 184, 191-192, 194
163.

TABLE C-10. - ANALYTICAL RESULTS - Nugget Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
6224	Metased	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dump 1740 ft.
6225	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
6226	Q.V.	Chip	19 in.	29	1.8	50	65	105	<10	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
6227	Metased	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Portal 1740 ft level.
6228	Q.V.	Grab	NA	0.06	<.2	10	5	15	<10	ND	ND	ND	ND	ND	ND	ND	Veins at face of 1740 ft level.
5406A	Q.V.	Chip	6 in.	1.38*	0.3*	90	81	90	<10	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
5406B	Q.V.	Pan Conc	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
5407	Q.V.	Chip	10 in.	.005*	Tr*	50	36	40	<10	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
5408	Q.V.	Chip	13 in.	Tr*	Tr*	30	45	50	<10	ND	ND	ND	ND	ND	ND	ND	1800 ft level.
5409	Metased	Chip	4 in.	0.1	0.85	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND	ND	1800 ft level hangingwall.
5410	Metased	Chip	6 in.	<.03	1.8	ND	ND	ND	35	ND	ND	ND	ND	ND	ND	ND	1800 ft level hangingwall.
5411	Q.V.	Chip	18 in.	Nil*	Nil*	30	20	30	12	ND	ND	ND	ND	ND	ND	ND	1740 ft level NW vein.
5412	Q.V.	Chip	6 in.	Tr*	Tr*	30	20	100	19	ND	ND	ND	ND	ND	ND	ND	1740 ft level N-S vein.
5413	Q.V.	Grab	NA	.05	1.5	19	24	46	19	ND	ND	ND	ND	ND	ND	ND	1740 ft level N80°E vein.
5414	Q.V.	Grab	NA	Nil*	Tr*	30	10	150	13	ND	ND	ND	ND	ND	ND	ND	1740 ft level N-S vein.

* ounces per ton
ND no data

NAME (other names): Gold Queen Prospect COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3 1/4 Sec 6 T 10N R 9E

 Meridian: Seward

 Geographic: This prospect is reported to occur on the
 south side of Avery River approximately 2 mi
 east of Port Wells (87).

REFERENCE NUMBERS:

Map
S-137

Kx
209

Tysdal
163

MAS
129

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1914 - Located by Hanson, Gustafson and Berklund (87).

1914 - 90 feet of adit driven (87).

No reported production.

RESOURCES: ND

OPERATING DATA:

A 90 ft adit has been reported (87).

GEOLOGIC SETTING:

ND

BUREAU WORK:

Searched for but not located in 1979. Undetermined mineral development potential.

REFERENCES:

6, 87, 184, 191-192

NAME (other names): Whistler Prospect
(Perseverence,
Bluebell)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3 1/4 Sec 5 T 10N R 9E
Meridian: Seward

Geographic: These claims are reported to be located on the
north side of Avery River between 2 and 3 mi
from its mouth (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-138	222	151	68	NA	NA

HISTORY & PRODUCTION:

1911 - Bluebell and Perseverence claims located by W. M. Conley and R. J. McChesney (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 40 ft adit on the Bluebell claim, a 10 ft shaft on the Whistler and stipping.

GEOLOGIC SETTING:

Several quartz veins have been reported on this property. Johnson (86) described the mineralization as follows:

"The vein on the Bluebell is 18 in. to 8-ft wide, that on the Whistler 3 ft wide, and that on the Perseverence several feet. All three veins are said to be traceable for considerable distances. Ore specimens from the Perseverence shown to the writer were bluish quartz with few sulfides. In specimens from the Whistler claim the quartz carried galena, pyrite, and chalcopyrite."

A 16-in. wide quartz vein located at 2,000 ft in elevation 3/4 mi east of the Sweepstake adit (S-140), was sampled in 1979. This vein strikes N60°E, dips steeply north and is hosted by metasandstone and slate.

BUREAU WORK:

Searched for in 1979 and 1980 but workings could not be located. Quartz veins exposed in the reported area were sampled (6246-6248) in 1979 and found to contain trace amounts of gold. Data are listed on Table C-11. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 89, 184, 191-192

TABLE C-11. - ANALYTICAL RESULTS - Whistler Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
6246	Q.V.	Chip Select	16 in.	.02	<.2	5	5	5	<10	ND	ND	ND	ND	ND	ND	ND
6247	Q.V.	Grab	NA	.08	<.2	15	10	20	<10	ND	ND	ND	ND	ND	ND	ND
6248	Alluvium	StrSed	NA	<.02	<.2	25	10	75	20	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Beauty Bird Prospect COMMODITIES: Au
(Mohawk)

LOCATION: Quadrangle: Seward D-3 1/4 Sec 6 T 10N R 9E
 Meridian: Seward
 Geographic: This prospect is located 1/2 mi north of the
 Avery River at an elevation of 545 ft about
 2 mi southeast of the mouth of Avery River.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-139	220	NA	NA	NA	NA

HISTORY & PRODUCTION:

1911 - Originally staked by John Groth (6).

1931 - Reported to be owned by Julius Ronning (175).

1936 - Restaked by J. Groth, Watson, and A. Buffo as the Mohawk Group
 which also covered the North Star prospect (136).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Development includes a 108 ft adit 530 ft above sea level, a 50 ft shaft
and 3 surface cuts located 170 ft southwest of the portal.

GEOLOGIC SETTING:

Mineralization in the adit is reported to consist of a lenticular group
of quartz veins striking N54°E and dipping 83°NW. The quartz is
described as being compact, non-crystalline and unstained (175). The
host rock is a black slate showing considerable fracturing and strike
movement. The open cuts expose several quartz stringers up to 4-in.
wide. The slate strikes 40°E and dips 70°NW at the open cuts. The
shaft is reported to be driven on a 3-ft wide quartz vein which assayed
up to \$50/ton prior to 1931 (174).

BUREAU WORK:

None. The property was searched for but not located in 1980.
Undetermined mineral development potential.

REFERENCES:

6, 50, 136, 175, 191

NAME (other names): Sweepstake Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3 N 1/2 Sec 6 T 10N R 9E
Meridian: Seward
Geographic: This prospect is located 2 mi east of Port Wells and 1 mi north of Avery River between 1,600 and 1,800 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-140	221	148	67	NA	NA

HISTORY & PRODUCTION:

- 1911 - Discovered and located by Charles Elwood and John Reuef (86).
- 1912 - Development work performed (86).
Several tons of ore shipped (86).
- 1916 - Aerial tram and mill under construction (171).

No recorded production. Minor production likely.

RESOURCES: 500 tons, 0.3 oz gold/ton, 0.3 oz silver/ton.

OPERATING DATA:

Workings include a 110 ft adit at 1,600 ft, shaft at 1,630 ft, a 22 ft adit at 1,700 ft, and trenching at 1,800 ft above sea level. The mill is reported to have consisted of a 2-stamp, 3-face discharge Hammond Manufacturing Co. plant (171). The stamps weighed 1,250 lbs each. Pulp was to have been passed over amalgamation plates to concentrating tables.

GEOLOGIC SETTING:

Several mineralized quartz veins were prospected on this property. The shaft exposed a 16- to 18-in. wide quartz vein, developed along a shear zone up to 5-ft wide in black slate, striking N65°W and dipping 45°SW. The adit exposes sheared slates and metasandstones containing barren looking quartz stringers. A well-defined quartz-carbonate vein is exposed a few hundred feet east and above the portal. This vein strikes N75°E to east-west, dips vertically and cuts the northeast striking foliation of the country rock. The quartz ranges from 3- to 36-in. wide and occupies a 10-in. to 6-ft wide shear zone. The quartz branches and forms numerous parallel stringers. Metallic minerals include very minor amounts of arsenopyrite, pyrite, pyrrhotite, galena, chalcocite, and visible gold. Two samples collected (5423, 24) contained significant values of gold and silver. The 22 ft adit was driven along a N45°E striking shear zone 8- to 10-ft wide containing a few barren quartz veins less than 2-in. thick (4240). Similar appearing structures are exposed along the ridge northwest of the portal. Several samples (4214-17) were collected but none were significantly mineralized.

BUREAU WORK:

The Bureau briefly visited and sampled (4114-17, 4240, 5423-24) the exposed vein and short adit in 1979 and 1980. The main portal was not exposed at the time due to heavy snows. The portal was open in 1981 and examined briefly. No sign of significant mineralization was found in the adit, so samples were not collected. The shaft was not located. Sample data are listed on table C-12. Moderate mineral development potential for a small mine.

REFERENCES:

6, 25, 50, 86-89, 171, 184, 191-192

TABLE C-12. - ANALYTICAL RESULTS - Sweepstake Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4214	Metased Q.V.	Grab	NA	<.02	.2	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	Vicinity of Sweepstake.
4215	Metased	Grab	NA	<.02	.2	40	20	80	10	ND	ND	ND	ND	ND	ND	ND	Vicinity of Sweepstake.
4216	Q.V.	Grab	NA	<.02	.2	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	ND	Vicinity of Sweepstake.
4217	Q.V.	Grab	NA	.1	<.2	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	ND	Vicinity of Sweepstake.
4240	Q.V.	Grab	NA	<.02	<.2	30	10	200	10	ND	ND	ND	ND	ND	ND	ND	22 ft adit.
5423	Q.V.	Select Grab	NA	35	36	11	125	39	14	ND	ND	ND	ND	ND	ND	ND	Surface vein.
5424	Q.V.	Chip	24 in.	8.5	8.1	15	43	25	160	ND	ND	ND	ND	ND	ND	ND	Surface vein.

ND no data

NAME (other names): North Star Prospect
(Mohawk Group)

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-3
Meridian: Seward

SW 1/4 Sec 31 T 11N R 8E

Geographic: This prospect is located on the north side of Avery River about 1 mi east of Port Wells. A cabin site occurs at an elevation of 500 ft above sea level and the workings are at 1,350-1,550 ft above sea level.

REFERENCE NUMBERS:

Map
S-141

Kx
220

Tysdal
147

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911 - Located by J. E. Groth, T. J. Davis, E. S. Malone, and others (86).

1912-13 - Development work was reported to consist of a 53-ft inclined shaft with 2 short drifts at the bottom and a 20-ft adit (86).

1931 - Restaked by J. E. Groth, Watson, and A. Buffo as part of the Mohawk Group, which also included the Beauty Bird prospect (176).

1981 - Relocated by Donald Mullikin and D. Wilmarth (6).

No recorded production. Minor production likely.

RESOURCES: ND

OPERATING DATA:

Workings include an accessible 270 ft adit at an elevation of 1,390 ft and a flooded shaft located 650 ft north-northeast of the adit at 1,350 ft above sea level (see S-142).

GEOLOGIC SETTING:

Several quartz veins are exposed on this property. The main workings were driven on a quartz vein ranging from 1- to 3-in. thick, striking N75°E to east-west and dipping steeply north. The quartz occurs along a well-developed shear zone in slate and metasandstone. The shear consists of gouge, bedrock fragments and quartz veinlets locally coalescing to form a strong vein. Mineralization is spotty with a few disseminated grains of galena, pyrite, arsenopyrite, sphalerite, and gold. The quartz vein exposed in the shaft occurs in a 3- to 4-ft wide shear zone, is 6-in. wide at the collar, strikes N65°E and dips 70°NW. Foliation in the country rock strikes N35°E and dips 85°NW. Very minor disseminated pyrite and galena were identified in the quartz.

BUREAU WORK:

During 1980, the main adit was mapped and sampled (fig. C-2, 5426-5428). A sample (5429) was also collected from the vein exposed at the collar of the shaft. Data are listed on table C-13. Mineralization appears to be low in grade. Low mineral development potential.

REFERENCES:

6, 50, 86, 176, 184, 192

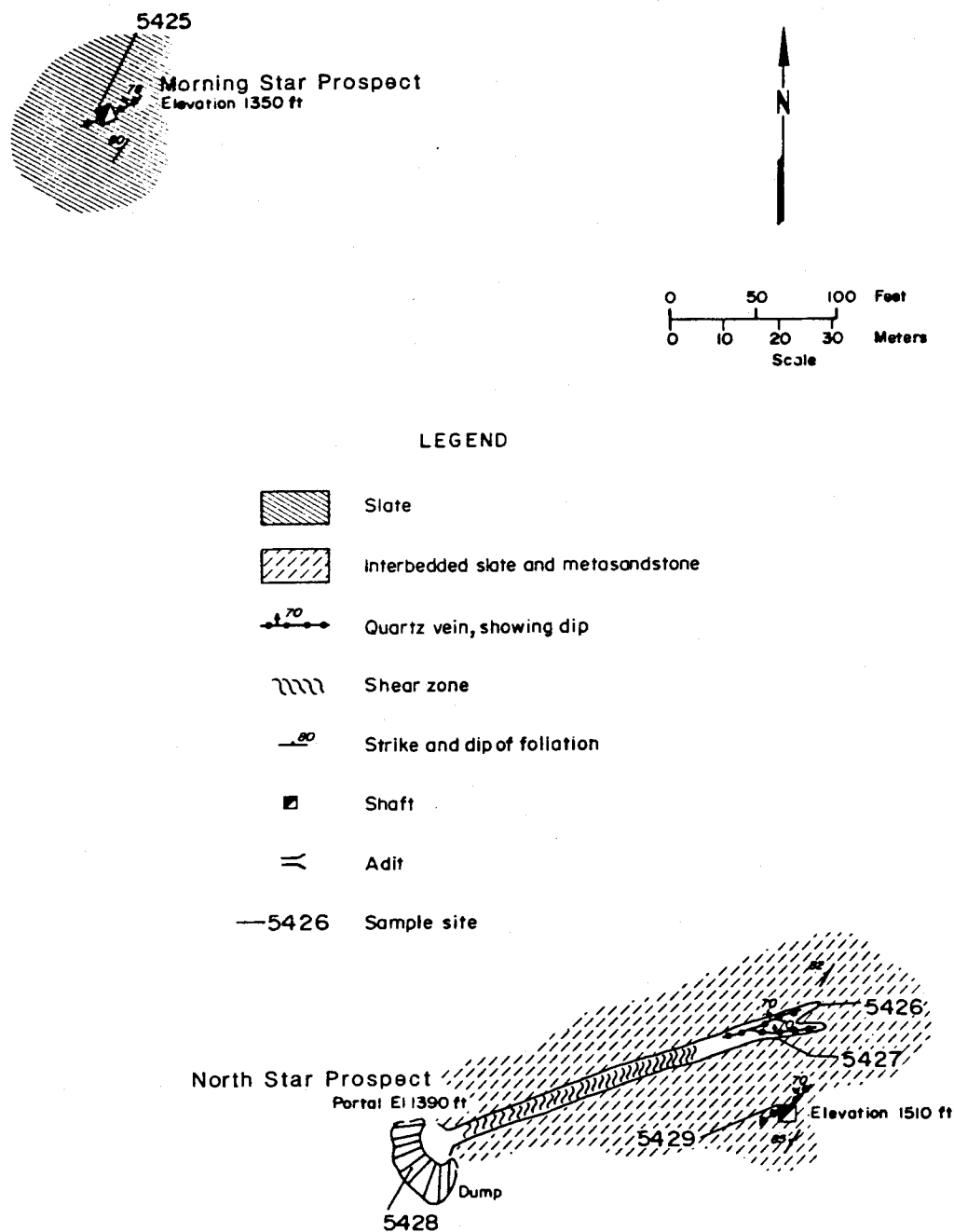


FIGURE C-2. Sample location map for the North Star (S-141) and Morning Star (S-142) Prospect

TABLE C-13. - ANALYTICAL RESULTS - North Star Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5426	Q.V.	Chip	8 in.	0.33	0.81	29	22	52	21	ND	ND	ND	ND	ND	ND	ND	Face of adit.
5427	Q.V.	Chip	12 in.	0.12	0.48	44	19	41	11	ND	ND	ND	ND	ND	ND	ND	Main adit.
5428	Q.V.	Select Grab	NA	8.1	9.4	19	135	65	<10	ND	ND	ND	ND	ND	ND	ND	Main adit dump.
5429	Q.V.	Chip	6 in.	2.0	3.4	14	45	42	<10	ND	ND	ND	ND	ND	ND	ND	Shaft.

ND no data

NAME (other names): Morning Star Prospect
(Consolidated)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-3, Anch. A-3 1/4 Sec 31 T 11N R 8E
Meridian: Seward

Geographic: This prospect consists of 2 adjoining claim blocks reported to be located on the divide north of Avery River within 2 claim lengths of the North Star (S-141) property.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-142	NA	149, 150	NA	NA	NA

HISTORY & PRODUCTION:

1913 - Morning Star claims discovered by J. E. Groth and E. S. Malone.
two 10 ft shafts sunk (86).
Consolidated claims owned by J. E. Groth, T. J. Davis, H. Thisted,
and E. S. Malone.

1914 - Minor production reported (86).

Reported production: 20 oz gold.

RESOURCES: ND

OPERATING DATA:

Workings consist of two 10 ft shafts.

GEOLOGIC SETTING:

Mineralization is reported to consist of one quartz vein up to 4-ft wide and a second up to 2-ft wide (86). The first is traceable for 3 claim lengths.

A quartz vein ranging from 12- to 20-in. wide, striking N75°E and dipping 78°N occurs in a 6 by 8 by 10 ft shaft. The quartz contains visible galena, pyrite, sphalerite, and possible gold.

BUREAU WORK:

The Bureau searched for this prospect in 1979 and 1980. One shaft was located which may belong to this property. A sketch map (fig. C-2) showing the location of the shaft relative to the North Star workings (S-141) was made and a sample (5425) was collected from the dump adjacent to the shaft. Data are listed in table C-14. Low to moderate mineral development potential.

REFERENCES:

50, 86, 184

TABLE C-14. - ANALYTICAL RESULTS - Morning Star Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Te	
5425	Q.V.	Select Grab	NA	12.5	23.5	18	420	145	10	ND	ND	ND	ND	ND	ND	5	Collected from dump of shaft.

ND no data

NAME (other names): Vincent Occurrence
(Golden Sand 1-4)

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 33 T 11N R 7E
Meridian: Seward
Geographic: This occurrence is reported to be located on
the north side of Lagoon Creek 1 mi west of
Harrison Lagoon (6).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-143	203	NA	23T	NA	NA

HISTORY & PRODUCTION:

1913 - Originally located by Vincent (6).

1981 - Relocated by D. Skuse (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 11, 191-192

NAME (other names): Anderson and Yannes COMMODITIES: Au
Occurrence

LOCATION: Quadrangle: Seward D-4 NE 1/4 Sec 4 T 10N R 7E
Meridian: Seward
Geographic: This occurrence is located on Harrison Lagoon
approximately 1 1/4 mi north of the Granite
Mine.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-144	205B	119	227	AA037368-73	NA

HISTORY & PRODUCTION:

1900 - Approximate time of original location by A. P. Yannes and Anderson
(6).

1973 - Relocated by F. S. Pettyjohn (194).

1979 - Sold to L. A. and B. A. Wright (194).

1981 - Assessment filed by L. A. and B. A. Wright (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192, 194

NAME (other names): Harris Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 4 T 10N R 7E

 Meridian: Seward

 Geographic: This occurrence may be the same as the Anderson
 and Yannes property (S-144). It is located near
 Harrison Lagoon.

REFERENCE NUMBERS:

Map
S-145

Kx
T99

Tysdal
118

MAS
230

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1900 - Originally located by J. Harris (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

NAME (other names): Hobo Bay Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 5 T 10N R 7E
 Meridian: Seward

Geographic: This occurrence is reported to be on the divide
 between Lagoon and Hobo Creeks at an elevation
 of about 2,400 ft (6).

REFERENCE NUMBERS:

Map
S-146

Kx
194

Tysdal
127

MAS
230

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Originally located by Hermann and Eaton (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 50, 184, 191-192

NAME (other names): Granite Mine COMMODITIES: Au, Ag
(El Primero Mining and Milling Co.)

LOCATION: Quadrangle: Seward D-4 SE 1/4 Sec 9 T 10N R 7E
 Meridian: Seward
 Geographic: The Granite Mine is located at an elevation
 between sea level and 700 ft a short distance
 inland from the spit located between Harrison
 Lagoon and Hobo Bay.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-147	33,372	120	226	AA028T00-103 AA037362-367	NA

HISTORY & PRODUCTION:

- 1912 - Discovered and located by M. L. Tatum and Jonathan Erving.
Shaft sunk on the vein and 5 tons of ore shipped (86).
- 1913 - The Granite Gold Mining Co. was incorporated (137).
- 1913-14 - Considerable development work performed (137).
- 1914 - On site milling operations begun with a 7-ft Lane mill (87).
- 1915 - 10-stamp mill added (171).
- 1916-22 - Main period of production (193).
- 1923 - El Primero Mining and Milling Co. incorporated (137).
- 1924 - Minor production (193).
- 1930 - Minor production (193).
- 1934-37 - Minor production (193).
- 1940-44 - Minor production (193).
- 1946 - Minor production (193).
- 1963-64 - Minor production (193).
- 1976 - Relocated by Western Alaskan Mining and Outfitting (194).
- 1979 - Claims located by L. A. & B. A. Wrightworth north of the
original workings (194).
- 1982 - Tailings staked by Greatland Exploration Co (194).
- Total recorded production: 31,919 tons of ore, 24,440 oz gold, 2492
oz silver (193).

RESOURCES: 1,860 tons identified resource grading 0.78 oz gold/ton. Up to 30,000 tons of tailings containing 0.18-0.19 oz gold/ton.

OPERATING DATA:

Smith (171) summarized the operating data for the Granite Mine at the beginning of its peak production period (1916-22) as follows:

"The property was originally opened with a crosscut to an inclined shaft on the ore, since which time a second crosscut has been run on the mill level and a raise driven to tap the bottom of the shaft. The level was opened on the main vein at 50, 110, 140, 210, and 350 ft, the mill crosscut being 125 ft below the latter.

The mill is in two parts, ten stamps on one side and a 7-ft. Lane mill on the other. The ore on the stamp side passes through a jaw crusher to the bins where it is fed automatically to two Hendy 5-stamp batteries, the stamps weighing 1,350 lbs each, falling 105 times per minute with a 6 1/4-in drop. The ore is crushed to 40-mesh, passed over amalgamating plates, and concentrated on Wilfley and Deister tables. In the second unit the Lane is followed by 14-in. Allis-Chalmers rolls, the pulp going over plates to a Wilfley table. The concentrate from both units is shipped and the tailings stored.

The main power plant, situated on the beach, contains two 80-horsepower oil-burning boilers which furnish steam for an American Ball 180-horsepower engine. The latter drives a 160-kilowatt Westinghouse dynamo. The compressor at the mine has a capacity of 620 cubic feet of free air per minute and is driven by a 100-horsepower motor. Underground, Sullivan, and Ingersoll-Rand machines are used."

New machinery and equipment installed under the management of the El Primero Mining and Milling Co., was described by J. C. Roehm (137) in 1936 as follows:

"A new Westinghouse equipped hydroelectric power plant that cost \$51,000 was installed three years ago, a mile north of the property. This includes 4,250 ft. of pipe line, 20 in. reduced to 17 in. with a 340-ft. head and a 140 pound pressure, a 7-ft. Pelton wheel for double capacity, a 150 KVA. generator and exciter complete with glass incased automatic and safety switches. This develops 22,000 volts stepped down to 110 over a 6,800 ft. of 3-phase power line to mine. This is an all-year-round power as water was measured three years prior. A Laidlow-Dunn 18x12x12 double cylinder compressor run by a 100 H. P. Westinghouse motor, delivers 1,000 cu. feet per minute for the mine. The mill machinery consists of a Blake crusher 8"x10" jaws, run by a 25 H. P. motor, ten Joshua Hendy 1050 pound stamps run by a 35 H.P. motor, two Wilfley tables run by a 5 H.P. motor. The ore is crushed, fed to stamps with inside amalgamation, through 40-mesh screen over three lengths of plates and over Wilfley tables. The recovery from battery and tables was reported 80 pct average and concentrates ran 75 to \$100 a ton. These concentrates are shipped to smelter at a freight rate cost of \$6 to \$6.50 per ton in 100 ton lots. An Ingersoll Rand steel sharpener No. 50 is used with oil

burner furnace. Ingersoll Rand leyners No. 75 are used in the mine. Auxiliary power complete for both mill and mine is installed consisting of the original power for operation before hydroelectric power. This consists of Chicago Pneumatic single, No. N-502 semi-diesel compressor, that delivers 450 cu. feet per minute. 30 H. P. Fairbanks Morse horizontal diesel for operating mill. 6 H.P. V-type gas engine for crusher and a 3 H.P. V-type gas engine for lights.

Several buildings make up the camp over 100 ft. above the mill. There are also houses and storage buildings on the beach. A good road is built to the mill over which a Ford truck is operated, and a wagon road a few hundred feet long extends from the mill up to camp. The mill is less than a quarter mile back from the beach at an elevation of 320 ft. These buildings are old, built at the time the mine was operated under the Granite Gold Mining Company. They have been kept in fair repair. The company owns and operates a large gasoline driven cannery tender boat for service between the mine and Valdez."

Currently, the 350-ft level is mostly accessible, and the 200-ft level behind the mill is caved at the portal. Due to the presence of numerous stopes, raises, and winzes and lack of adequate support, most of the workings are judged to be extremely hazardous. Most of the mill equipment remains on site but the buildings are collapsed.

GEOLOGIC SETTING:

A description of the geologic setting was made in 1914 by B. L. Johnson (87).

"The country rock of the ore body consists of interbedded slates, graywackes, and argillites cut by large masses of medium-grained biotite granite, hydrothermally altered near the veins to a light-gray to greenish-gray rock. The granite contacts are said to be irregular."

"The developments suggest the presence of more than one lead on the property, but are not sufficiently advanced to prove it. The vein showing in the shaft occupies a fissure striking S75°W and dipping 60°N. In the underground workings considerable variation in the strike and dip of the vein is noticeable in the several drifts. In 1913 observations seemed to show that the vein had a general strike between N50°W and N70°W and a dip of 43°-55°N, and it is reported to be offset in many places by small faults. The fissure ranges from 3 in. to 14 ft in width and averages perhaps from 3 to 3 1/2 ft. The fissure filling varies with the character of the country rock. In the sedimentary rocks it consists of shattered slate, graywacke, and argillite, with quartz veins or a quartz network cementing the shattered rocks and inclosing angular fragments in a network of porous white crystalline quartz. In the granite the vein is stronger and better defined, although its widest part includes numerous shattered masses of altered granite cemented by gold-bearing quartz veinlets."

J. C. Roehm (137) described a new vein found in 1936 as follows:

"The new vein found this year is a small vein, 4 to 12 in. in width, averages about 7 in., has a developed length of 150 ft. It lies wholly within the slates between a hundred and a hundred fifty feet from contact. It has a strike of N49°W and dips 65°N. This vein is highly banded with free walls showing a milky white quartz with numerous graphitic bands. Considerable free gold is showing. This vein was being mined at the time of visit. The ore was sacked and trammed to mill."

Roehm (137) also discussed the mineralization present at the property.

"The mineralization consists of pyrite, galena, sphalerite, arsenopyrite, stibnite, chalcopryrite, and free gold. The gold appears to be associated with galena and sphalerite mainly, with smaller amounts of pyrite, arsenopyrite, and stibnite.

The gangue minerals are quartz, calcite, graphite, chlorite, pieces of slate and pieces of granite within the granite. The veins in the granite show refilling with large angular pieces of wall rock. The movement shows a nearly vertical upthrust with a strong action that appears to be later than the granite."

BUREAU WORK:

The Bureau visited the Granite Mine on several occasions during the RARE II study. A sketch map (fig. C-3) showing sample locations was made in 1979 of most of the accessible portion of the 350-ft. level. Samples were also collected from the dump and the tailings area. Results from 23 samples are tabulated in table C-15. Based upon past mining history and low but persistent gold values present in samples collected by the Bureau, additional work appears to be warranted. The current workings, however, appear to be nearly exhausted. Therefore, additional work should include drilling to identify possible vein extensions. Generally the veins appear to have been higher in grade and more extensively stoped when hosted by metasediments rather than by granite. However, high values were identified in samples taken in a granite hosted portion of the vein located at the face of the 350-ft level (5740A). A 200-lb sample of the tailings was collected in 1982. Splits were sent to the Bureau laboratory in Juneau and Heiner-Lindstrom Assoc. Inc. in Nevada. Both labs analyzed the heads and obtained assays of about 0.18-0.19 oz gold/ton. The Bureau lab attempted to recover gold by amalgamation with only 29 pct recovered. Heiner - Lindstrom Assoc., Inc. performed bottlerol and simulated heap leach tests of the tailings. Both tests indicated that about 85 pct gold recovery could be obtained by cyanidation. The simulated heap leach test recovered 80 pct of the gold after 7 days.

Apparently amalgamation alone would not be sufficient to recover gold from the tailings. Possibly because much of the gold is stained due to oxidation of sulfides in the tailings. Moderate mineral development potential for a small to medium sized lode operation and high mineral development potential for a small cyanide leaching operation.

REFERENCES:

1, 6, 27, 50, 86-89, 108, 137, 158, 162-168, 171, 184, 191-194

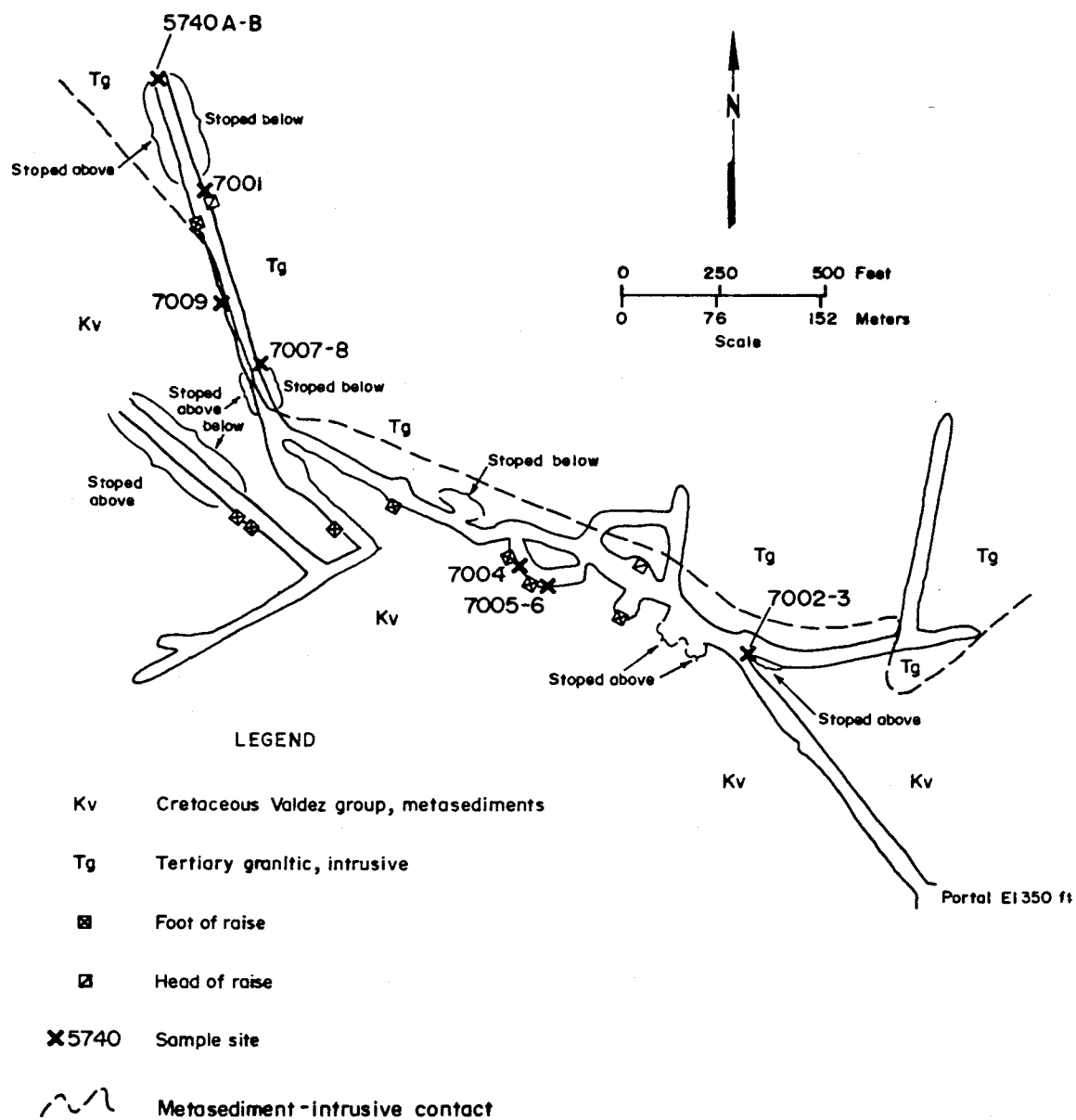


FIGURE C-3. Sample location map for the Granite Mine (S-147).

TABLE C-15. - ANALYTICAL RESULTS - Granite Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4243	Metased	Chip	18 in.	.05	.2	ND	ND	ND	30	ND	ND	ND	ND	ND	ND	ND	Snowball 720 ft level.
4244	Q.V.	Grab	NA	14	2.8	15	445	435	40	ND	ND	ND	ND	ND	ND	ND	350 ft level dump.
4245	Q.V.	Grab	NA	12	4.0	80	235	400	300	ND	ND	ND	ND	ND	ND	ND	200 ft level stamp mill.
4246	Q.V.	Grab	NA	4.2	2.8	25	135	65	160	ND	ND	ND	ND	ND	ND	ND	200 ft level ore bin.
4247	Q.V.	Grab	NA	1.3	.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200 ft level dump.
4248	Q.V.	Grab	NA	.08	.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200 ft level dump.
4249	Fel Plut	Grab	NA	.06	.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200 ft level.
5740A	Q.V.	Chip	18 in.	71	26	2	230	135	22	ND	ND	ND	ND	ND	5	5	350 ft level face.
5740B	Q.V.	Spec.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
6280	Q.V.	Grab	NA	.05	<.2	5	5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
6281	Q.V.	Spec.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
6282	Metased	Grab	NA	.53	.2	20	15	65	ND	ND	ND	ND	ND	ND	ND	ND	ND
7001	Fel Plut	Grab	NA	.44	.2	<5	10	35	500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7002	Q.V.	Grab	NA	2.4	2.6	15	30	5	<500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7003	Metased	Grab	NA	.15	.4	100	15	125	<500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7004	Q.V.	Grab	NA	2.4	1.8	75	25	120	500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7005	Q.V.	Grab	NA	1.5	2.0	110	90	30	<500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7006	Metased	Grab	NA	.19	.4	45	15	115	500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7007	Q.V.	Grab	NA	3.3	5.6	75	20	140	7000	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7008	Metased	Grab	NA	.02	.2	40	10	100	<500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7009	Q.V. Mill	Grab	NA	3.9	2.8	80	40	145	1500	ND	ND	ND	ND	ND	ND	ND	350 ft level in workings.
7232	Tailings Beach	Bulk	NA	0.194*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Bulk for cyanide leaching.
7233	Material	Placer	0.1yd	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Several fine color recovered.

* ounces per ton
ND no data

NAME (other names): Snowball Prospect
(Mountain View,
Hamilton & Irving)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4 SW 1/4 Sec 9 T 10N R 7E
Meridian: Seward

Geographic: This prospect is reported to be located west
of the Granite Mine, 1 mile from the beach at
an elevation of 860 ft (175).

REFERENCE NUMBERS:

Map
S-148

Kx
NA

Tysdal
121

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Approximate date of original location by Hamilton and Irving.

1931 - Development work reported (175).

No reported production.

RESOURCES: ND

OPERATING DATA:

An inaccessible adit occurs at an elevation of 860 ft with a 27-ft caved shaft at the portal. A 220-ft adit was in the process of being driven in 1931 at an elevation of 720 ft (175).

GEOLOGIC SETTING:

Mineralization consists of a 3- to 12-in. wide quartz vein striking N50°W and dipping 85°NE. The vein is traceable for 100 ft on the surface and is hosted by granite on the east and metasandstone on the west. The vein contains angular bedrock fragments, small amounts of pyrite, and gold. Two samples collected by Territorial Geologists prior to 1931, contained 0.02 oz gold/ton, 0.1 oz silver/ton and 2.54 oz gold/ton, 0.8 oz silver/ton respectively.

BUREAU WORK:

The 220-ft adit was briefly examined and sampled in 1979. Significant mineralization was not identified. Data from sample 4243 are listed with that of the Granite Mine on table C-15. Undetermined mineral development potential.

REFERENCES:

174, 184

NAME (other names): Reed, Gauthier, and COMMODITIES: Au
Cooper Prospect
(Joel, Lros)

LOCATION: Quadrangle: Seward D-4 1/4 Sec 17 T 10N R 7E
Meridian: Seward
Geographic: This prospect is located on the southwest
shore and near the mouth of Hobo Bay.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-149	200	122	225	AA019369-72	NA
				AA043852-70	

HISTORY & PRODUCTION:

1912 - Located by F. W. Reed, B. Gauthier and H. B. Cooper (86).

1913 - Development work performed (86).

1914 - Total development reported to consist of 300 ft of adit and a 25-ft shaft (186).

1973 - Relocated by L. C. Roberts.

Additional claims located by L. C. Roberts and Odin Strandberg (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include a 300 ft of adit, a 20-ft shaft and a log cabin. These are located near the shoreline less than 50 ft above sea level.

GEOLOGIC SETTING:

Mineralization occurs in crushed slate and quartz along a 30- to 36-in. wide fissure striking N30°-60°E and dipping 70°NW. The quartz pinches and swells from 3 to 14 in. with lenses traceable for 25 ft along strike. The quartz contains pyrrhotite, chalcopyrite, sphalerite, pyrite and gold.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 50, 86-87, 184, 191-192, 194

NAME (other names): Everson Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4

SE 1/4 Sec 17 T 10N R 7E

Meridian: Seward

Geographic: This occurrence is located adjacent to the Reed, Gauthier, and Cooper property (S-149) on the southwest side of Hobo Bay.

REFERENCE NUMBERS:

Map
S-150

Kx
32

Tysdal
123

MAS
225

BLM
AA19365-68

MS
NA

HISTORY & PRODUCTION:

1973 - Located by F. S. Pettyjohn and others (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 50, 184, 191-192, 194

NAME (other names): Yakima Ledge Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4

1/4 Sec 13 T 10N R 6E

Meridian: Seward

Geographic: This prospect is reported to be located near the head of Bettles Bay on the north side (86).

REFERENCE NUMBERS:

Map
S-151

Kx
197

Tysdal
128

MAS
224

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Located by J. Brereton, T. Dome and B. Howell.
25-ft adit driven (86).

1914 - Adit lengthened to 65 ft (87).

No reported production.

RESOURCES: ND

OPERATING DATA:

A 65-ft adit was reported to be present in 1916 (89).

GEOLOGIC SETTING:

Mineralization is reported to consist of a banded quartz-calcite vein 10- to 31-in. wide. The vein strikes N12°E and dipping 80°W and occurs along a fissure in slate and metasandstone (11). Minerals include pyrite, sphalerite, arsenopyrite, galena, chalcopyrite, pyrrhotite, and gold.

BUREAU WORK:

This prospect was searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 50, 86-87, 89, 184, 191-192

NAME (other names): Sweepstake Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4 NE 1/4 Sec 9 T 10N R 6E

Meridian: Seward

Geographic: This prospect is located at an elevation between sea level and 550 ft on the southeast shore of Harriman Fiord approximately 1 3/4 mi northeast of the terminus of Harriman Glacier.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-152	96	125	237	NA	NA

HISTORY & PRODUCTION:

1912 - Discovered and located by Chris Pederson and Ole Hanson (86).

1913 - Development work consisted of a 150-ft adit (86).

1914 - 10-ft addition to the adit (87).

1916 - 2-stamp mill erected (89).

1917 - 1800-ft tram constructed but not used (171).

1937 - Vic Hackett and E. N. Fultz operated a 5 to 9 ton Straub Mill and processed 25 tons of 0.33 to .43 oz gold/ton material. The option was dropped due to the low tenor of the ore (136).

1945 - Territorial report written by Harry L. Fieldler (57).

No recorded production. Minor production reported.

RESOURCES:

2,325 tons grading 0.01 oz gold/ton.

OPERATING DATA:

Remnants of support buildings remain near the shore of Harriman Fiord. Debris is covered at high water. The portal is located at 550 ft above sea level approximately 1,800 ft by tramline south of the building site. Workings consist of an accessible 170-ft adit and trenching.

GEOLOGIC SETTING:

Mineralization consists of an 18- to 48-in. wide locally banded, carbonate-bearing quartz vein generally striking N80°E and dipping steeply north along most of its length. Near the face of the adit the vein curves to a N65°W strike prior to being offset 1 ft by a northeast-striking northwest steeply dipping right-lateral fault. Angular bedrock fragments are included in the quartz in some locations. The host rock consists of interbedded metasandstone and slate striking N50°E and dipping 85°SE near the portal. Metallic minerals include arsenopyrite, pyrite, sphalerite, galena, chalcopyrite, stibnite, and gold.

BUREAU WORK:

The Bureau sampled (5687) the dump at the building site and mapped and sampled (5688 A-F) the adit in 1981 (fig. C-4). Sample results are listed on table C-16. The vein appears to be low grade and have little potential for economic development. Low mineral development potential.

REFERENCES:

6, 50, 57, 86, 89, 90, 171, 184, 191-192

TABLE C-16. - ANALYTICAL RESULTS - Sweepstake Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5687	Q.V.	Grab	NA	0.16	0.2	34	50	100	2250	ND	2	ND	10	ND	ND	Beach ore dump.
5688A	Q.V.	Chip	24 in.	0.06	1.8	34	245	18	160	ND	2	ND	ND	ND	ND	550 ft level
5688B	Q.V.	Chip	14 in.	2.9	1.5	56	115	47	2600	ND	2	ND	8	ND	ND	550 ft level
5688C	Q.V.	Chip	7 ft	0.07	1.4	59	230	23	130	ND	2	ND	ND	ND	ND	550 ft level
5688D	Q.V.	Chip	28 in.	0.13	3.2	150	335	170	360	ND	2	ND	7	ND	ND	550 ft level
5688E	Fault Gouge QV	Grab	NA	0.24	0.3	3	12	14	640	ND	2	ND	ND	ND	ND	550 ft level
5688F	Q.V.	Spec	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Collected from several locations in the 550 ft level

ND no data

NAME (other names): Singletary-O'Neill Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4 NE 1/4 Sec 9 T 10N R 6E
 Meridian: Seward

Geographic: This occurrence is located on the south side of Harriman Fiord approximately 1 1/2 mi northeast of the toe of Harriman Glacier at an elevation of 900-1000 ft approximately 1/4 - 1/2 mile south of the Sweepstake adit.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-153	190	126	127	NA	NA

HISTORY & PRODUCTION:

1900 - Reported location by Singletary and O'Neill (6).

RESOURCES: 1250 tons, 0.1 oz gold/ton, 0.1 oz silver/ton.

OPERATING DATA:

Minor stripping. Vein is exposed at an elevation of 930 ft.

GEOLOGIC SETTING:

Mineralization consists of a series of subparallel, locally banded quartz-calcite veins up to 5-ft wide generally striking northwest and dipping steeply southwest. Most of the veins appear barren. Mineralization in the veins sampled is spotty. Podiform masses enriched in sulfides including pyrite, arsenopyrite, chalcopyrite, sphalerite, and galena are present. Veins occur along fractures in interbedded slate, metasiltstone and metasandstone striking N20-35°E and dipping 65°SE to vertical. Right-lateral movement along the veins is suggested by the presence of vertical spur veins developed along N20°W striking shear fractures. They tend to be offset consistently in a right-handed sense by NE striking faults and can generally be traced 100 to 150 ft along strike. Felsic dikes occur in the area.

BUREAU WORK:

The Bureau examined and sampled (5685 A-F) this locality in 1981 at which time a sketch map showing the structure of the quartz vein and location of the samples collected was made (fig. C-5). Sample results are listed on table 17. Mineralization is spotty and generally of low grade. Low mineral development potential.

REFERENCES:

6, 25, 184, 191-192

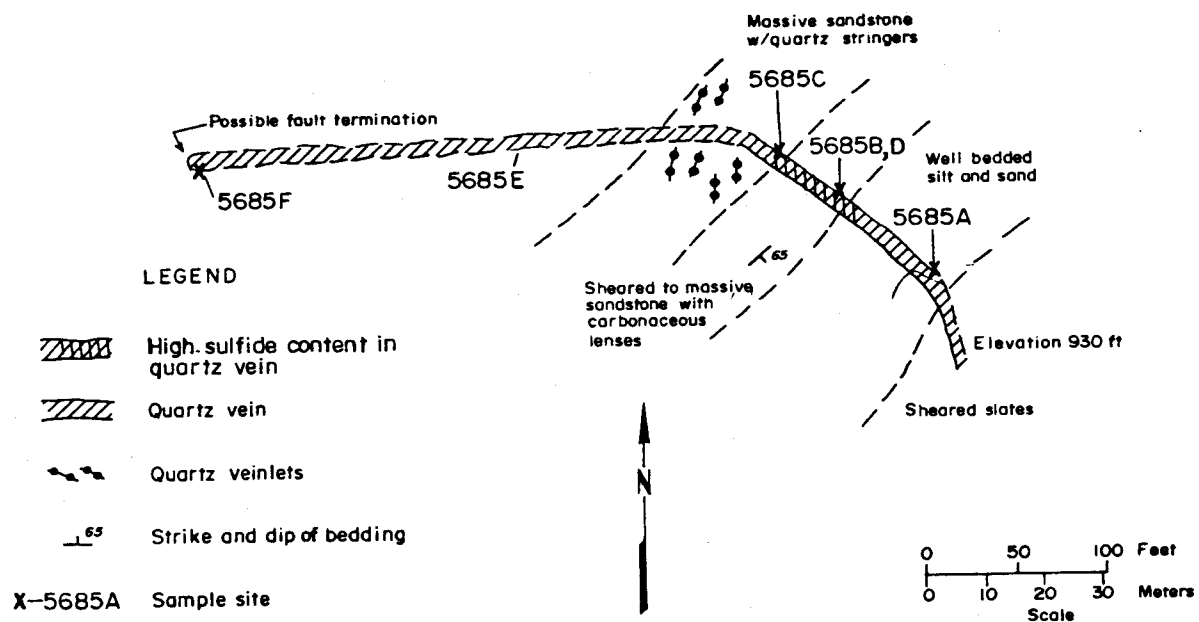


FIGURE C-5. Sample location map for the Singletary - O'Neill Prospect (S-153).

TABLE C-17. - ANALYTICAL RESULTS - Singletary-0'Neil Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn		W
5685A	Q.V.	Chip	38 in.	4.9	1.6	21	22	49	140	ND	2	ND	21	ND	ND	No visible sulfides
5685B	Q.V.	Grab	NA	0.14	4.6	280	250	1100	420	ND	2	ND	125	ND	ND	Abundant sulfides
5685C	Q.V.	Chip	60 in.	0.03	0.2	44	36	120	74	ND	2	ND	7	ND	ND	No visible sulfides
5685D	Q.V.	Spec	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Abundant sulfides
5685E	Q.V.	Chip	60 in.	0.07	0.03	7	29	23	100	ND	2	ND	9	ND	ND	Pyrite present
5685F	Q.V.	Chip	24 in.	.03	0.2	2	8	18	12	ND	2	ND	5	ND	ND	No visible sulfides

ND no data

NAME (other names): Skypilot Ledge Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 6 T 10N R 6E

Meridian: Seward

Geographic: This occurrence is reported to occur on the north side of Harriman Glacier at an elevation of 600 feet.

REFERENCE NUMBERS:

Map
S-154

Kx
T88

Tysdal
T24

MAS
236

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1912 - Located by Frank White and Harold Jones (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

Mineralization is reported to consist of a 2- to 5-ft wide vertical quartz vein striking northwest and traceable for 450 to 500 ft. The country rock is conglomerate and slate. The ore is reported to contain free gold and assay well (86).

BUREAU WORK:

This deposit was not located during a brief search made in 1981. However, similar veins were examined 1 1/2 mi to the southwest (Map No. S-155). Additional veins were located from the air to the northeast of this locality but were not examined. Undetermined mineral development potential.

REFERENCES:

6, 86, 184, 191-192

NAME (other names): Harriman Glacier Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 12 T 10N R 5E

 Meridian: Seward

Geographic: This occurrence is located on the north side of Harriman Glacier at an elevation of about 1,500 ft, 1 1/2 mi southwest of the terminus of the glacier.

REFERENCE NUMBERS:

Map
S-155

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1981 - Examined and sampled by the U.S. Bureau of Mines.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of well-defined quartz veins and stockworks in a carbonaceous, pyritiferous slate and hematite-stained conglomerate. The main veins, of which only one was examined, strike N55°W and dip steeply southwest. The conglomerate contains clasts up to 12 in. in diameter, appears very poorly sorted and is extremely fractured. Metallic minerals include pyrite with minor galena.

BUREAU WORK:

This occurrence was located and sampled (5686 A & B) in 1981. Sample results are listed on table C-18. These veins are similar in overall appearance to those on the south side of Harriman Fiord (i.e. Sweepstake Mine, Map No. S-152). Grade is low. Low mineral development potential.

REFERENCES:

This report.

TABLE C-18. - ANALYTICAL RESULTS - Harriman Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5686A	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample lost. ND
5686B	Metased	Grab	NA	0.03	<0.03	41	33	85	30	ND	ND	ND	ND	ND	ND	

ND no data

NAME (other names): Mineral King Mine COMMODITIES: Au, Ag
(Merrill, Hermann and
Eaton, Brook-Eaton)

LOCATION: Quadrangle: Seward D-4 SW 1/4 Sec 14 T 10N R 6E
Meridian: Seward
Geographic: This mine is located at the northwest end of
Bettles Bay 3/4 mi from tidewater.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-156	28	129	239	AA027461-64	NA

HISTORY & PRODUCTION:

- 1912 - Located by George H. Hermann.
117-ft shaft sunk, 50 ft of drifting completed (86).
- 1913-14 - 90 ft of drifting completed (87).
- 1916 - 75 ft of drifting completed. 10-stamp mill installed (171).
- 1920 - 400 ft of adit reported. Operated by the Alaska Pittsburgh Gold
Mining Co. and called the Dailey - Bennett Mine (193).
- 1926 - Examined and reported upon by J. G. Shepard (148).
- 1927 - Mill erected (157).
- 1929-39 - Production reported (194). Mine operated by R. J. Merrill.
Best values were reported to come from the second stope north
of the shaft on the upper level (176).
- 1930-31 - Earl Pilgrim (176) examined and reported upon the mine.
- 1973 - Property relocated by M. C. and C. A. Sage (194).
- Recorded Production: 2783 oz gold, 626 oz silver (193).

RESOURCES: 500 tons, 0.012 oz gold/ton, up to 5000 tons of untested
tailings are present.

OPERATING DATA:

The workings consist of a tunnel and 780-ft adit at an elevation of 450
ft which are currently accessible. The tunnel is on grade with the adit
and was used to haul ore to a 2000-ft tram line to the mill. A raise
leads to an upper level which is reported to have produced the best
values. The raise is apparently open to the surface judging by the
presence of leaves in the adit below the raise. Pilgrim (176) described
the mill operation in 1931 as follows:

"The plant consists of a jaw crusher; two 1,350-lb stamps; a Wilfley concentrating table; and an Ingersoll-Rand 9 by 8 air compressor driven by pelton wheels. The water is taken from Eaton Creek and is driven under a head of over 200 ft. Ore is brought from the portal of the tunnel to the mill by a jig-back tram about 2,000 ft in length. A small 7 by 6-in compressor driven by a gas engine is situated at the tunnel for use when water is not available for the pelton driven compressor."

GEOLOGIC SETTING:

The geology and mineralization at this mine are accurately described by Johnson (86).

"The country rock is fine-grained dark-gray graywacke and argillite. A large dike is reported to cut these metamorphic rocks about 100 ft from the vein. The ore deposit occupies a fissure and is traceable about 200 ft. The fissure strikes N26°W and dips 45°E at the surface and 50°E in the lower part of the shaft. The width of the fissure filling is from 2 to 6 ft and averages about 3 ft. The proportion of quartz to shattered graywacke in the filling varies. The fissure is exposed in the stream 75 ft west of the shaft, where its filling is about 6 ft wide and consists mostly of quartz but includes some graywacke. Twenty-five feet below the collar of the shaft 13 in. of quartz occurred in a 39-in. fissure. At 60 ft the fissure was 23-in. wide, 19 in. of which was quartz. The quartz veins parallel the walls and there are very few cross fractures. Large lenses of quartz, 15 to 25 ft long, overlap, pinch out, or play out into stringers which in places unite with similar stringers from other lenses to form veins, or the stringers themselves widen until they are several inches across. The hanging wall of the fissure shows no gouge and most of the quartz veins break free from the graywacke with no gouge. The ore contains quartz, calcite, sphalerite, pyrite, galena, chalcopryite, gold, pyrrhotite, and arsenopyrite."

Pilgrim (176) also described the vein as it appeared in the workings in 1931.

"A considerable portion of the vein has been stoped out above the 100-ft level. The vein is a fissure striking N23°W and dipping 52°SE. The quartz above the 100-ft level varies in width from 2 to 6 ft and has an average of about 3 ft. The walls are dark graywacke. Below the 100-ft level the vein is somewhat scattered into lenses and stringers following along the cleavage of the wall rock. On the tunnel level some slate is interbedded with the graywacke. The slate there strikes N56°E. Granite shows along the last 140 ft of the tunnel. Where followed by the tunnel the vein is from 1-in. to 12-in. in width and varies considerably in direction where the granite is encountered. There are a number of parallel stringers and lenses of quartz, especially on the hanging-wall side of the tunnel. A crosscut extending east from the tunnel at a point 75 ft from the face passes through the granite and into graywacke at 15 ft in from the tunnel. The ore is a white crystalline quartz containing considerable brecciated country rock. Contained sulfides are pyrite, sphalerite, and galena in appreciable amounts, and minor amounts of chalcopryite, pyrrhotite, and arsenopyrite. Some calcite

was observed filling narrow fractures in the graywacke breccia in the vein. Much of the gold is contained in the sulfides, which are concentrated in the mill and shipped to smelters in the States. Samples taken from the concentrating table by Mr. Merrill assayed as follows:

	Gold	Silver	Value	Iron	Sulfur
	oz	oz	\$	%	%
Concentrate A.....	6.58	49.30	151.32	35.12	33.78
Concentrate B.....	7.18	50.80	163.92	31.97	30.73
Tailings.....	0.08	0.20	1.68	2.63	2.06

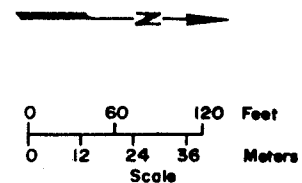
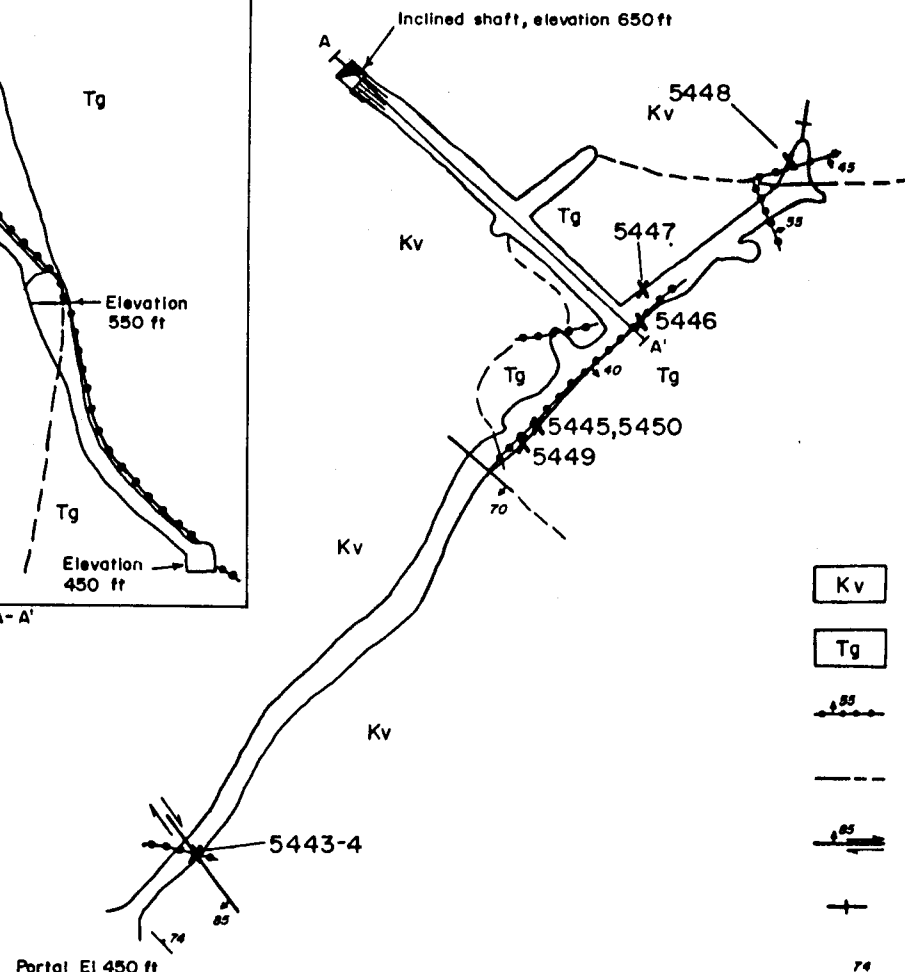
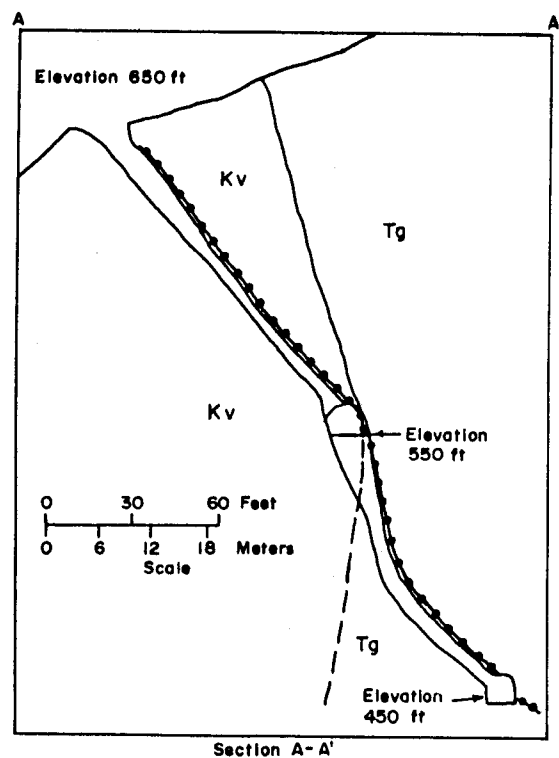
BUREAU WORK:

The Bureau sampled (5443-5450) and updated the map (fig. 6) of the main level, originally prepared by Shepard (148) and collected placer samples (5417, 5419) from the stream draining the mine area in 1980. Mike Sage, the owner of the mine, and Pat Stidman, a private consultant, accompanied Bureau geologists during part of the examination. Data are listed on table C-19. Samples collected in the main level were low in grade and suggest that the vein has little potential for development where it is hosted by granite. Previous production is reported to have come from the upper level where the vein is hosted by metasediments. Reports also suggest that most of the high grade quartz was mined out between 1929 and 1939. Values could increase at depth and additional evaluation, if attempted, should include both the examination and sampling of the upper level and drilling to intercept the vein below the 450-ft level.

Mill tailings (up to 5,000 tons) remain below the current mill site. These could be sampled and tested to determine their grade and amenability to heap leaching. Moderate mineral development potential for a small lode mine. Moderate mineral development potential for heap leaching of the tailings.

REFERENCES:

6, 25, 50, 86-87, 89, 134, 136, 148, 156-157, 159, 164-168, 171, 176, 184, 191-194



LEGEND

- Kv Cretaceous Valdez group, metasediment
- Tg Tertiary granite
- Quartz vein, showing dip
- Contact, dashed where approximate
- Fault, showing dip and relative movement
- Strike of vertical fault
- Strike and dip of foliation
- Adit
- X 5445 Sample site

FIGURE C-6. Sample location map for the Mineral King Mine (S-156).

TABLE C-19. - ANALYTICAL RESULTS - Mineral King Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Te	
5417	Alluvium	Placer	0.1 yd ³	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001 oz gold/yd ³ recovered.
5418	Mill Feed	Grab	NA	5.3	4.3	110	165	150	100	ND	ND	ND	ND	ND	ND	ND	Collected from stamp mill.
5419	Alluvium	Placer	1 pan	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Bedrock sample 0.018 oz gold/yd ³
5443	QV Fault Gouge	Grab	NA	<0.03	0.76	5	9	ND	21	ND	ND	ND	ND	ND	ND	ND	Main adit metased host
5444	Q.V.	Chip	4 in.	.05	1.2	600	160	67	ND	ND	ND	ND	ND	ND	ND	ND	Main adit metased host
5445	Q.V.	Chip	6 in.	0.35	3.8	18	140	30	30	ND	4	ND	22	5	<5	<1	Main adit granite host
5446	Q.V.	Chip	3 in.	0.54	3.4	ND	ND	20	410	ND	ND	ND	ND	ND	ND	ND	Main adit granite host
5447	Granite	Grab	NA	<.03	0.49	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	Main adit.
5448	Q.V.	Chip	4 in.	0.82	0.95	ND	ND	ND	3200	ND	ND	ND	ND	ND	ND	ND	Metased host
5449	Q.V.	Chip	6 in.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No data granite host
5450	Q.V. Mill	Spec	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Granite host
6313	Feed	Grab	NA	3.2	2.0	70	120	140	10	ND	ND	ND	ND	ND	ND	ND	Collected from stamp mill.

ND no data

NAME (other names): George and McFarland Prospect COMMODITIES: Au
(Dead Fish No. 1)

LOCATION: Quadrangle: Seward D-4 NW 1/4 Sec 24 T 10N R 6E
 Meridian: Seward
 Geographic: This prospect is located near high tide level
 on the south shore of Bettles Bay 1/2 mi
 southeast of the mouth of Bettles Glacier
 drainage.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-157	T96	T30	223	AA036293-296	NA
				AA038361	
				AA037374-75	
				AA050348	

HISTORY & PRODUCTION:

1911 - Located by H. George, J. W. McFarland (11).

1973 - Relocated by F. S. Pettyjohn (194).

1982 - Location notice filed for Dead Fish No. 1 by James Miller (194).

No reported production. Minor production probable.

RESOURCES: 500 tons, 0.3 oz gold/ton, 0.24 oz silver/ton.

OPERATING DATA:

Workings consist of a 47-ft adit with a 20 to 30-ft raise open to the surface. A rotten log structure is located immediately above the portal.

GEOLOGIC SETTING:

Mineralization consists of at least 2 intersecting quartz veins striking N15W and N20°W and dipping 72°W and 86°E respectively at the portal. These veins merge underground and continue along a 4-ft wide N20°W striking shear zone. The veins range from 3- to 13-in. wide in the adit and may have been wider where mined out to the surface. The quartz is locally banded and contains considerable carbonate. Metallic minerals include arsenopyrite, sphalerite, pyrite, galena, and Au. The host rock is a N48°E striking 66°N dipping metasandstone with interbedded carbonaceous slates exposed along the beach to the northwest of the mine. An 18-in. wide felsic dike striking N45°E and dipping vertically is exposed in the adit.

BUREAU WORK:

This prospect was examined and sampled (6314-16, 7207-10) in 1979 and 1982 by the Bureau. The workings are in poor repair and very hazardous, so no attempt was made to map them. Data are listed in table C-20. Low to moderate mineral development potential for a small mine.

REFERENCES:

6, 50, 86, 184, 191-192, 194

TABLE C-20. - ANALYTICAL RESULTS - George & McFarland Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
6314	Q.V.	Grab	NA	17	14	5	240	50	200	ND	ND	ND	ND	ND	ND	ND	ND
6315	Fel Plut	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6316		Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7207		Chip	3 in.	0.016*	<.2*	6	40	38	520	ND	ND	ND	ND	ND	ND	ND	West dipping vein, portal.
7208	Q.V.	Chip	3 in.	26.5	9.2	4	57	80	300	ND	ND	ND	ND	ND	ND	ND	East dipping vein, portal.
7209	Q.V.	Chip	4 in.	5.5	6.3	11	115	76	1030	ND	ND	ND	ND	ND	ND	ND	West dipping vein, adit.
7210	Q.V.	Chip	4 in.	0.07	4.0	13	14	61	52	ND	ND	ND	ND	ND	ND	ND	East dipping vein, adit.

* ounces per ton
ND no data

NAME (other names): Banner Prospect (Christopher) COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4 1/4 Sec 25 T 10N R 6E
Meridian: Seward
Geographic: This prospect is reported to occur near the entrance to Bettles Bay on the south shore at an elevation of 150 ft (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-158	268	<u>131</u>	<u>223</u>	AA036277-79	NA

HISTORY & PRODUCTION:

1915 - Originally located by C. Christopher (86).

1916 - 250 ft adit driven. Test shipment of ore made (89).

1917 - Development work reported (90).

1973 - Relocated by F. S. Pettyjohn (194).

No reported production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings are reported to consist of a 400-ft adit (90).

GEOLOGIC SETTING:

Mineralization consists of a shattered felsic dike recemented by mineralized quartz veins. The dike ranges from 1- to 8-ft wide and can be traced across the ridge between Bettles and Hummer Bay where it is exposed at 2,000 ft above sea level. The dike strikes northeast and dips steeply NW. The country rock consists of graphitic and hematite-stained slate and metasandstone striking N40°E and dipping northwest at 53°. Ore minerals include galena, sphalerite, arsenopyrite, and gold.

BUREAU WORK:

The Bureau searched for this property in 1979 at which time a dike and quartz veins were located and sampled (4250-53) but no significant mineralization was identified. Workings were not located. Sample data are listed in table C-21. Undetermined mineral development potential.

REFERENCES:

6, 50, 79, 86, 89, 90, 171, 184, 191-192, 194

TABLE C-21. - ANALYTICAL RESULTS - Banner Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4250	Alluvium	StrSed	NA	<.1	<.2	60	25	175	<10	ND	ND	ND	ND	ND	ND	ND
4251	Q.V.		NA	.03	<.2	20	<10	<200	30	ND	ND	ND	ND	ND	ND	ND
4252	Metased	Rock Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No data
4253	Fel Plut	Rock Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No data

ND no data

NAME (other names): Hummer Vein Prospect COMMODITIES: Au
(Everson, Harris, and Parker)

LOCATION: Quadrangle: Seward D-4 1/4 Sec 35 T 10N R 6E
Meridian: Seward
Geographic: This prospect is reported to occur 3/4 mile
northwest of the head of Hummer Bay on the
south side of the valley at an elevation of
400 ft (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-159	195	132	222	AA036289-92	NA
				AA033431-32	

HISTORY & PRODUCTION:

1912 - Vein discovered and located by C. W. Everson, F. Harris, and H. Parker
(86).

1973 - Relocated by F. S. Pettyjohn (194).

1981 - Transfer of interest to Alaska Public Interest Research (194).

No reported production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings in 1913 were reported to include a 40-ft adit with a winze of
unknown depth and stripping (86).

GEOLOGIC SETTING:

Johnson (86) describes the mineralization and geology of the deposit as
follows:

"The country rock consists of slates, argillites, and
graywackes. The ore deposit consists of numerous irregular
quartz stringers in folded, faulted, and sheared slates,
argillites and graywackes. A width of about 10 ft of this
stringer lode is exposed. The general strike is from S10°W
to S40°W and the dip is 60°W. The quartz stringers are in
general parallel to each other and to the strike of the
lode. These stringers range in thickness from 1 to 12 in.
The longest stringer is traceable about 60 ft, its width
varying from 3 to 12 in. The winze is sunk on this stringer.
Some of the stringers break free; others have frozen walls.
The mineralization appears slight. Quartz, a cream colored,
brown-weathering carbonate, galena, pyrite, and chalcopyrite
were recognized in the ore."

BUREAU WORK:

The prospect was briefly searched for but not located in 1979, and two
stream sediment samples (2337-2338) were collected. A 0.1 yd³ placer
sample (5416) was collected from Hummer Creek in 1980, which contained a
few colors. Data are listed on table C-22. Undetermined mineral
development potential.

REFERENCES:

6, 50, 86-87, 184, 191-192, 194

TABLE C-22. - ANALYTICAL RESULTS - Hummer Vein Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
2337	Alluvium	StrSed	NA	<.2	<.2	25	10	75	30	ND	ND	ND	ND	ND	ND	ND
2338	Alluvium	StrSed	NA	<.02	<.2	35	15	85	30	ND	ND	ND	ND	ND	ND	ND
5416	Alluvium	Placer 0.1yd3	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Pyrite and 3 colors recovered.

ND no data

NAME (other names): Bennett, Bailey,
& Heinz Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4

1/4 Sec 1 T 9N R 6E

Meridian: Seward

Geographic: This prospect is reported to occur on the west
side of Hummer Bay (192).

REFERENCE NUMBERS:

Map
S-160

Kx
T93

Tysdal
T33

MAS
222

BLM
NA

MS
NA

HISTORY & PRODUCTION:

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

The area is underlain by phyllitic, graphitic slates similar to those exposed in the Lansing Mine (S-163) area. Several quartz veins up to 3-in. wide occur along closely spaced fractures discordant to the north-northeast striking foliation. The veins contain weathered carbonate.

BUREAU WORK:

The property was searched for by the Bureau in 1979. No evidence of workings or significant mineralization was identified. Samples of barren appearing quartz-carbonate veins were collected. Results are listed on table C-23. Low mineral development potential.

REFERENCES:

6, 79, 88, 184, 191-192

TABLE C-23. - ANALYTICAL RESULTS - Bennett, Bailey, & Heinz Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7026	Q.V.	Grab	NA	ND	<1	200	<10	<200	<500	ND	ND	ND	ND	ND	ND	ND
7027	Q.V.	Grab	NA	ND	<1	20	<10	<200	<500	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Alaska Glacier Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-4

1/4 Sec 25 T 9N R 6E

Meridian: Seward

Geographic: This deposit is reported to be near the mouth
of Pigot Bay on the north side (191).

REFERENCE NUMBERS:

Map
S-161

Kx
183

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1926 - Located by Alaska Glacier Mining Co.

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191

NAME (other names): Tomboy Ledge Mine COMMODITIES: Au, Ag
(Pigot Bay No. 1-6)

LOCATION: Quadrangle: Seward D-4 NW 1/4 Sec 15 T 9N R 6E
Meridian: Seward

Geographic: Several reported adits (86) occur near the top of the divide between Pigot Bay and the tributary to Pirate Cove between 2,000 and 2,500 ft above sea level

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-162	192	134	235	AA037739-44	NA

HISTORY & PRODUCTION:

1912 - Vein located by I. Westburg and J. Domenzet (86).

1979 - Restaked by C. F. Davis (194).

Total recorded production: 219 oz gold, 9 oz silver (193)

RESOURCES: 300 tons, 0.3 oz gold/ton, 0.06 oz silver/ton.

OPERATING DATA:

A 40-ft adit with a 20-ft winze and a 35-ft adit were reported in 1916. Evidence of stripping, a trench at 2,050 ft, and a 105-ft crosscut with 40 ft of drifting were located by the Bureau of Mines at 2,000 ft in 1982.

GEOLOGIC SETTING:

Mineralization consists of a 1- to 28-in. wide quartz-carbonate vein averaging 8 to 10 in. where currently exposed along a N35°E striking 65°NW. dipping shear zone in extensively deformed slate and metasilstone generally striking N20°E and dipping 60°-65°NW. Portions of the vein pinch out entirely to be replaced by gouge up to 5-in. thick. Other sections have well-developed ribbon structure. Metallic minerals include arsenopyrite, pyrite, chalcopyrite, and galena. Numerous northeast-striking dikes occur in the general vicinity of this property. Some are up to 8-ft wide.

BUREAU WORK:

The general vicinity of this prospect and the Lansing Mine (S-163) was visited in 1981 at which time several veins were examined and sampled (5697 A & B). One Tomboy Ledge adit was mapped and sampled (7203-05) in 1982 (figure C-7). A trench was also sampled (7202, 7206) in 1982. Moderate mineral development potential for a small mine. Sample data are listed on table C-24.

REFERENCES:

50, 86-87, 90, 184, 191-194

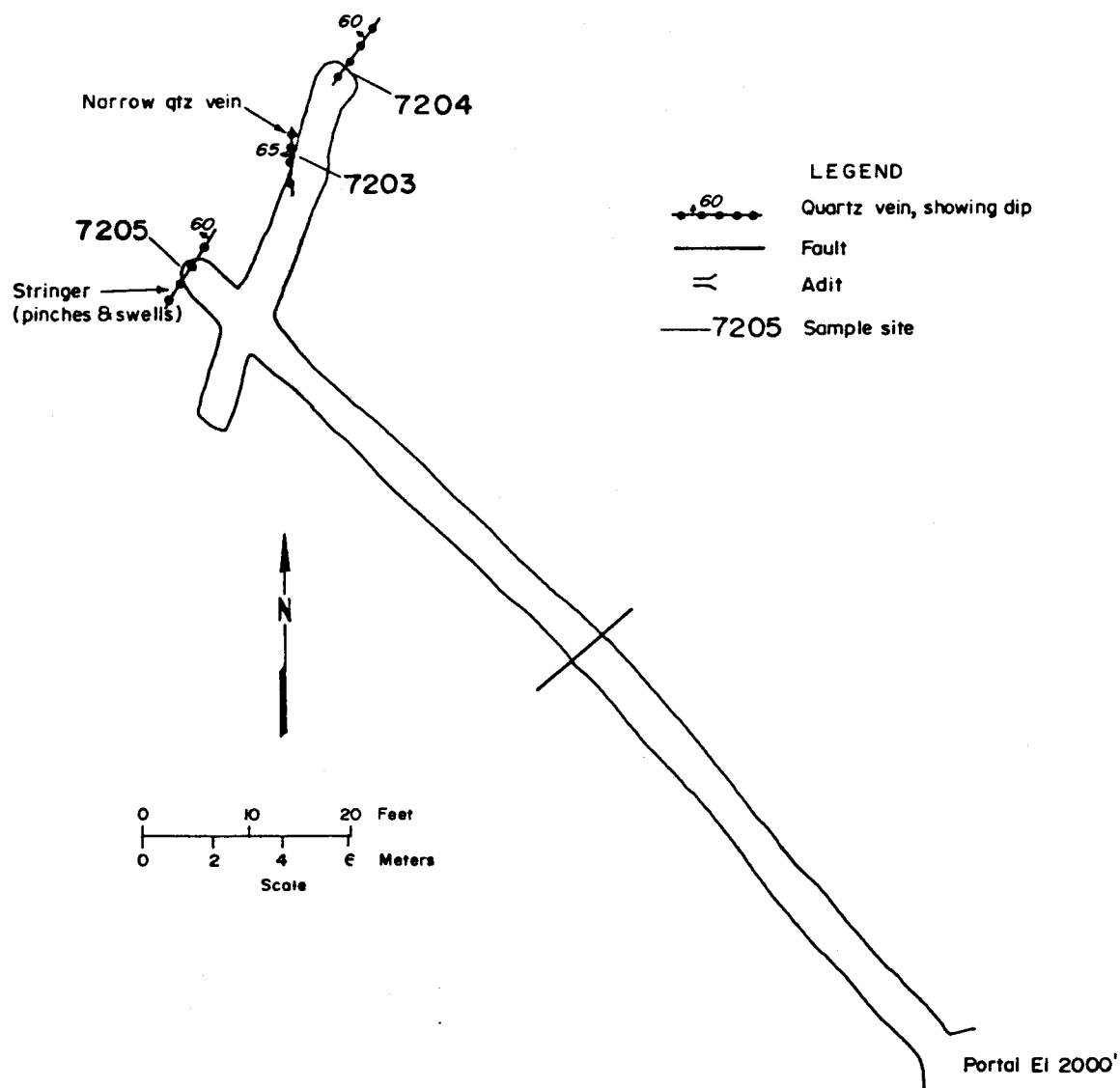


FIGURE C-7. Sample location map for the Tomboy Ledge Mine (S-162).

TABLE C-24. - ANALYTICAL RESULTS - Tomboy Ledge Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5697A	Q.V.	Chip	3"	0.03	<0.03	14	22	45	13	ND	ND	ND	ND	ND	ND	ND	Vein exposed at 1700 ft.
5697B	Q.V.	Chip	18"	0.04	<0.03	3	13	17	180	ND	ND	ND	ND	ND	ND	ND	Vein exposed at 1700 ft.
7202	Q.V.	Chip	8"	1.054	0.2	20	650	676	920	ND	ND	ND	ND	ND	ND	ND	Trench at 2050 ft sampled.
7203	Q.V.	Chip	2"	0.43	0.2	66	26	122	74	ND	ND	ND	ND	ND	ND	ND	Adit at 2000 ft.
7204	Gouge	Chip	5"	0.04	0.5	105	33	413	195	ND	ND	ND	ND	ND	ND	ND	Adit at 2000 ft.
7205	Q.V.	Chip	4"	0.38	0.3	48	12	193	585	ND	ND	ND	ND	ND	ND	ND	Adit at 2000 ft.
7206	Q.V.	Chip	3"	17.1	3.2	13	220	61	3500	ND	ND	ND	ND	ND	ND	ND	Trench at 2050 ft.

* ounces per ton
ND no data

NAME (other names): Lansing Mine,
(Hidden Treasure,
Homestake 1-4,
Blue Fox Group)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4
Meridian: Seward

SE 1/4 Sec 16
NW 1/4 Sec 15 T 9N R 6E

Geographic: This property is located 2,000 ft inland from
the head of Pigot Bay between 400 and 700 ft
above sea level

REFERENCE NUMBERS:

Map
S-163

Kx
271

Tysdal
135

MAS
NA

BLM
AA020084-86
AA029333-36
AA036281-84

MS
NA

HISTORY & PRODUCTION:

1913 - Jack Irving and J. D. Hamilton located the Hidden Treasure claim
(145).

1914 - C. Peterson located the extension of the vein and staked the
Homestake claim. B. F. Millard optioned the Hidden Treasure for
\$100,000. Crosscut begun, vein 1 intersected 40 ft from portal.
Shaft sunk (145).

1916 - Drifting.
140-ft crosscut driven on the Homestake claim; vein not intersected
(145).

1917 - Both properties dropped and later abandoned (145).

1932 - Relocated by G. W. Gilson and C. Peterson (145).

1938 - Optioned to Superior Mines, Inc.
Mill building constructed and machinery installed.
Preliminary report written by J. C. Roehm (145).

1973 - Relocated by F. S. Pettyjohn (194).

Recorded production: 81 oz gold, 24 oz silver (193).

RESOURCES: 500 tons - 0.1 oz gold/ton, 0.02 oz silver/ton.

OPERATING DATA:

Roehm (145) visited the workings in 1938 and described the development
work and equipment. "No. 1 vein is developed by a 40-ft shaft, several
old cuts and a 90-ft crosscut with 110 ft of drift at an elevation of
520 ft. No. 3 vein is developed by a 140-ft crosscut tunnel at an
elevation of 1,600 ft."

A collapsed mill is located a distance of 400 ft below the lower tunnel at an elevation of 370 ft. Roehm (145) states: "A jig-back aerial tram extends from the mill to the tunnel. The mill building is 16 x 28 ft with an additional 40-ton ore bin on the upper end. The machinery consists of a Straub crusher, 3 x 4-ft Straub ball mill, 15-ton capacity, a hydraulic classifier, a Gibson amalgamator followed by plates, and a Wilfley table. Flotation cells are to be added later. The mill is to be powered by a 20 hp Fairbanks Morse diesel engine. An R. 40 Ingersoll-Rand 3-stage compressor run by a 40 hp Fairbanks Morse diesel is to be installed within the mill to furnish air for the mine. An American saw mill located near the beach furnishes the necessary timber from the abundant growth in the valley floor. New camp buildings are under construction at the mill site. The small creek near the camp is to be developed for water power which will be seasonal only. The mill is expected to be in operation by October."

GEOLOGIC SETTING:

Several mineralized quartz veins striking northeasterly and dipping 50-60° to the north are located on this property. They are spacially associated with the Port Wells Fault. Numerous other veins and felsic dikes occur in the vicinity but appear to lack significant mineralization.

The geologic setting and mineralization of this deposit are capably described by Roehm (145):

"The formations noted in the vicinity of the claim group range from black crinkled phylites to argillites, and impure slates, all of which are schistose and considerably altered. Several acid dike boulders were noted in the creek below the veins, but no dikes were noted in close proximity. The quartz veins are confined to the crinkled graphitic phyllite band on this group. Three veins have been found. One is a parallel vein and the other is possibly a continuation of the first."

Roehm goes on to mention that the 520-ft "Drift exposes a quartz lense 50 ft in length which also has a width from a few inches to 18 in, averaging 12 in. The walls are free with considerable gouge-filling on both walls. The quartz is banded, folded and curled, with graphitic bands containing the greater portion of the mineralization. The better values are contained in the widest portions. C. Peterson reported that an average of \$43 in gold and silver per ton was obtained from this lense along the tunnel in channel sampling. On the surface above the tunnel this lense has a length of 90 ft, as shown in the cuts, and an average width of 18 in. Gold values, some amounting to \$100 per ton, were reported from these cuts."

"No. 2 vein is a parallel vein to No. 1 and was discovered in the crosscut tunnel at a point 40 ft in from the portal. This vein is not exposed on the surface, but has the same strike as No. 1 and dips 65° N. No work has been done on this vein which is only exposed across the width of the tunnel, and its width varies from 6 to 8 in. The quartz and mineralization is similar to No. 1 vein."

"No. 3 vein was not seen by the writer, but was reported outcropping at an elevation of 1600 ft, and it is believed to be the continuation of No.1 vein. It was reported exposed over a distance of 700 ft and the ore is in spots and kidneys, some of which are high grade. Its reported width is 6 to 10 in. Average values of \$100 per ton in gold were also reported. A crosscut tunnel was driven below the vein. This has a reported length of 140 ft and an additional 40 more feet is required to cut the vein."

"A larger lense, possibly over 100 ft in length, is located on No. 1 vein below the tunnel, approximately 400 ft. Several old rock cuts have been made across this lense and nearly two feet of good looking ore showing free gold was noted in one trench."

"The metallic minerals noted in the veins consisted of pyrite, galena, sphalerite, arsenopyrite, and free gold. Most of the mineralization is contained along the bands and in seams in the quartz. It has an irregular distribution along the vein, most abundant in the widest quartz sections. The sulfides are extremely fine. The gangue minerals consist of white milky to hard bluish gray quartz, calcite, chlorite, sericite, graphite and numerous pieces of wall rock."

"A specimen of quartz, T.D.M. 120, taken from the larger lenses of No. 1 vein 400 ft southwest of the tunnel, shows clearly two generations of quartz. the earlier quartz is the larger crystalline type of milky white color, with well formed crystals with distinct edges. The younger type is a grayish blue in color, and contains fine and indistinct crystal faces with an abundant amount of wall rock included as seams with an irregular and curled appearance. Free gold shows in the specimen in the younger quartz. A slide of the younger quartz shows under the microscope the mineralization confined to the crinkled irregular fractures in the quartz, showing it of a later age than the quartz. Calcite and chlorite also are associated with the extremely fine crystals of the sulfides. Mineralization as an original constituent of the quartz is lacking in this thin section."

BUREAU WORK:

The Bureau mapped (fig. C-8) and sampled (7018-25) the 520-ft level of workings in 1979. Data are listed in table C-25. Available data suggest that the mineralization is low in grade but potential exists for large tonnages. Several other quartz veins and two prospects were examined above the mine site in 1981 and 1982 (see Tomboy Ledge, S-162). Moderate mineral development potential for a small mine.

REFERENCES:

6, 50, 79, 145, 184, 191-194

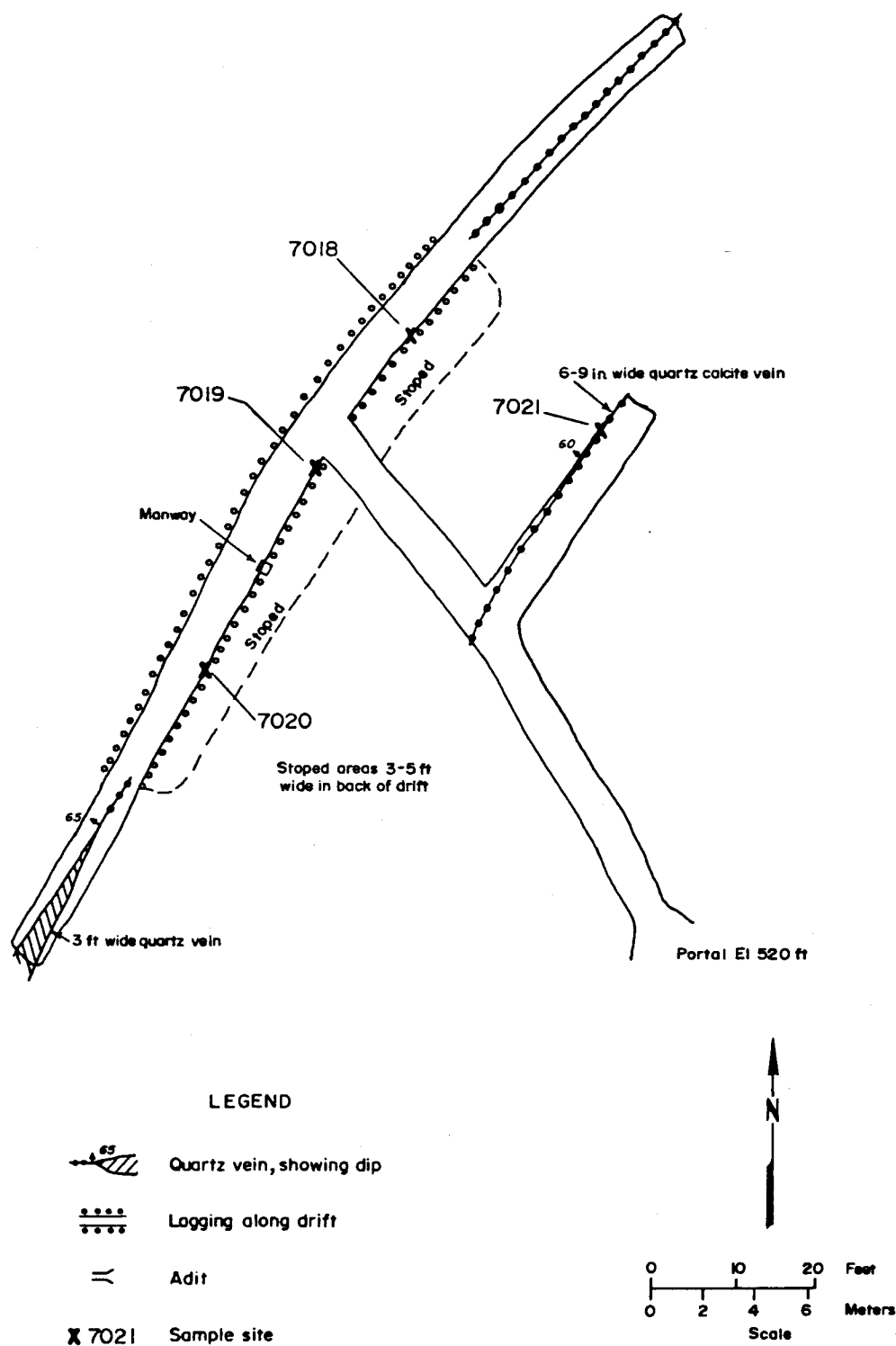


FIGURE C-8. Sample location map for the Lansing Mine (S-163).

TABLE C-25. - ANALYTICAL RESULTS - Lansing Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7018	Q.V.	Grab	NA	1.5	0.4	60	30	110	250	ND	ND	ND	3	ND	ND	ND
7019	Q.V.	Grab	NA	3.6	0.4	55	50	135	650	ND	ND	ND	3	ND	ND	ND
7020	Q.V.	Grab	NA	3.9	0.2	40	45	115	450	ND	ND	ND	2	ND	ND	ND
7021	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7022	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7023	Metased	Grab	NA	ND	<1	200	10	<200	<500	ND	ND	ND	ND	ND	ND	ND
7024	Metased	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7025	Q.V.	Grab	NA	3.8	1.4	85	70	95	1800	ND	ND	ND	7	ND	ND	ND

ND no data

NAME (other names): Dunklee & Reilly Prospect
(see also S-320)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4 1/4 Sec 16 T 9N R 6E
 Meridian: Seward
 Geographic: This prospect reportedly occurs on the north
 side of Pigot Glacier stream valley at an
 elevation of 700 ft (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-164	191	136	NA	AA020084-86	NA

HISTORY & PRODUCTION:

1913 - Originally located by J. J. Reilly and E. A. Dunklee (86).

1974 - May have been relocated as the Lansing 1-3 claims by C. R. Diebold
(194).

No reported production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Development in 1913 was reported to consist of a short adit, stripping
and a trail from the prospect to the head of Pigot Bay (86).

GEOLOGIC SETTING:

Johnson (86) discusses the geology and mineralization as follows:

"The country rock is argillite cut by acidic dikes. The vein lies
in a small well-defined fissure, which cuts the argillites and a
9-ft dike. The fissure strikes S63°W and dips 60°N. It is
traceable for about 250 ft. The average width is probably less than
6 in., but the vein shows from 1 to 24 in. of quartz in different
places. The walls are free and in one place 3 in. of gouge was
observed. Secondary banding parallel to the walls is evident in
places. The ore contains quartz, calcite, chalcopryite, gold,
pyrrhotite, galena, arsenopyrite, and sphalerite."

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development
potential.

REFERENCES:

6, 50, 86, 89, 96, 184, 191, 194

NAME (other names): Passage Canal
Occurrence

COMMODITIES: Au, Mo

LOCATION: Quadrangle: Seward D-4 NE 1/4 Sec 31 T 9N R 6E
Meridian: Seward
Geographic: This occurrence is located on the north side
of Passage Canal approximately 1/2 mi west
of Logging Camp Bay at high tide level.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
<u>S-165</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1981 - Discovered by the Bureau in 1981.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a gold and molybdenite-bearing pegmatitic vein hosted by the Passage Canal Pluton. Anomalous bismuth was also detected in a sample (5711G) of the pegmatite.

BUREAU WORK:

Data from samples collected are listed in table C-26. Mineralization identified is too limited to be economically significant. However, the occurrence indicates that the Passage Canal Pluton, as well as, the Billings Glacier Pluton contains some molybdenum mineralization and suggests that additional evaluation of the areas is warranted. Low mineral development potential.

REFERENCES:

This report.

TABLE C-26. - ANALYTICAL RESULTS - Passage Canal Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Bi	
5711F	Felsic Pluton	Grab	NA	<.03	1	10	11	42	<10	ND	<2	ND	ND	<5	<5	ND	ND
5711G	Fel Plut	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Molybdenite-bearing peg.
5711G	Fel Plut	Grab	NA	2.5	ND	5	5	5	ND	ND	150	ND	ND	ND	ND	1000	Analysed by USGS.

ND no data

NAME (other names): Lone Star Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-4
Meridian: Seward

1/4 Sec 25 T 9N R 5E

Geographic: This prospect is reported to be located in a small cirque 2 mi northwest of Logging Camp Bay at an elevation of about 1,000 ft (89). It may also be located near the head and on the south side of Pigot Bay.

REFERENCE NUMBERS:

Map
S-166

Kx
269

Tysdal
137

MAS
136

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1916 - Originally located by Charles and Lorene Davis (89).

No reported production.

RESOURCES: ND

OPERATING DATA:

A 100-ft crosscut and a 50-ft drift were reported to be on the property in 1916 (89).

GEOLOGIC SETTING:

Mineralization is reported to consist of quartz vein (184).

No other data is available.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 89, 184, 191-192

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward D-5 NW 1/4 Sec 26 T 9N R 5E
Meridian: Seward

Geographic: This occurrence is located on the west side of Seth Valley at an elevation of 800 ft about 3/4 mi from the head of Poe Bay.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
<u>S-167</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1982 - Discovered by Kurt Stuwe and reported to the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a 3-in. wide quartz vein containing considerable galena and pyrite.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

This report.

NAME (other names): Portage Bay Mine

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D5

NW 1/4 Sec 15 T 9N R 5E

Meridian: Seward

Geographic: The mine workings are located at an elevation of 1,550 ft at the head of Poe Valley. Remnants of support buildings occur near the head and along the west side of the valley at 300 ft above sea level.

REFERENCE NUMBERS:

Map
S-168

Kx
34,341

Tysdal
138

MAS
244

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1928 - Located by Dominic Vietti and partners (173).

1933 - Acquired by Portage Gold Mines Ltd. (138).

1935-40 - Development work (173).

1935 - Mine report written by Dr. W. V. Smitheringale (173).

1936 - Preliminary report written by J. C. Roehm (138).

1965 - Mine report written for Bigitte Mining and Consulting Co., Ltd. by Robert Steiner (174).

Total Recorded Production: 490 oz gold, 60 oz silver (193).

RESOURCES: According to company records: 10,000 tons containing 0.6 oz gold/ton.

OPERATING DATA:

Workings consist of a 278-ft crosscut, a 345-ft drift, (figure C-9) with approximately 220 ft of stoping and 240 ft of raises. One 160-ft raise reaches the surface at about 1,700 ft above sea level. Several cases of unopened dynamite are present at the east end of the drift. According to a report by Roehm (138) in 1936:

"This company owns a 20 hp diesel McCormick-Deering tractor which is used in hauling supplies from the beach to the camp and part way to the mine. The mine is operated with a 2-stage air-cooled Ingersoll Rand compressor. This is type 40M with 186 ft air displacement and delivers 150 ft³. This is run by a 30 hp Gardner diesel with belt drive. Gardner-Denver machines with detachable bits are used in the mine. Timber is lacking in the vicinity of the mine. However, within half a mile of the beach an abundance is found. A seasonal water power site could be developed from the glacial stream which has approximately a 50-ft fall within 200 ft of the beach."

GEOLOGIC SETTING:

Roehm (138) also described the geology and mineralization of the area:

"The geology in this area is very favorable for gold deposition due to the existence of a slate and granite contact that shows considerable mineralization. This contact is located along the east side of the valley in a northerly direction cutting the schistosity of the slates at nearly a right angle. Several light greenish to gray dikes extend from the contact into the slates at various angles. The slates consist of wide bands of black graphitic slates, interbanded narrow graywacke and slates of a more argillaceous nature. Along and in the vicinity of these dikes small quartz veins have been found. The main showing on this group consists of a banded quartz lense with an exposed length of 150' and an average width of 12 in. The strike of this lense is N60°E. and dips 58° to 60° NW. The slate formation strikes N70°E and dips 69°-70°NW. This gives a difference of 10° in both strike and dip between vein and formation. The vein is enclosed in a strong shear which contains a gouge of highly crumpled slates 3 ft wide. This gouge contains the quartz lenses which vary between the walls of the gouge. The average length of these lenses are 20 to 25 ft and they vary in width from a few inches to 20 in, as they occur along the drift. Usually barren spaces of 10 to 15 ft exist between the lenses. Where the crosscut tunnel hits the vein, a dike of greenish color was found striking N40°E and dipping NW. This dike was cut by the vein with only a few feet displacement. At a point 22 ft east of the crosscut a raise was started on a small lense. This raise is directly under the larger surface outcrop. The quartz widened from a few inches to 12 in. at the top 30 ft above. Later reports stated this raise encountered a dike of greenish nature paralleling the vein with the vein showing a greater width and higher values."

"The milky white banded graphitic quartz contains a 1 pct mineralization of (in order of abundance) pyrite, pyrrhotite, galena, sphalerite, chalcopyrite, and free gold. The mineralization and also the gold values were spotty and occur both in the quartz and along the graphitic bands. The lense on the surface over its exposed length 150 ft and average 12-in. width was reported to average one and a half ounces of gold per ton. A 35-ft section of this exposed length was reported to average between 2 and 3 oz. Free gold can be seen in several places along the drift and the average assay was reported good."

BUREAU WORK:

The Bureau examined, sampled (4991-4995, 5458-5461), and drew a sketch map (fig. C-9) of the main workings in 1980 and collected a pan concentrate sample (4996) from the small drainage southwest of the portal. The surface exposure at 1,750 ft was briefly examined and sampled (5692 A-E) in 1981.

Previous reports have been optimistic concerning the potential for development of this property. Smitheringale (173) concludes:

"The results of work during 1935 are favorable and sufficient to warrant the installation of machinery to further the rapid exploration of the vein at depth."

In 1965 Steiner (174) recommended:

"The existence of economical quantities of gold had been proven by former operation. The present conditions existing in the area warrant an intensive exploration program, aimed at a substantially greater development of the property than was carried out previously."

Bureau sampling indicates that the vein contains spotty but generally low grade values of gold. Data are listed in table 27. However, samples could only be collected from material left behind by the original miners. The vein has good strike length and continuity up dip to the surface. Should the vein also be continuous at depth, significant reserves could exist. Other quartz veins were visible above and to the east of the current workings near the contact zone between a granodiorite stock and the metasediments. Bureau investigators agree with the statement made by Robert Steiner (174): "It is thus inferred that further exploration of the contact zone will most certainly disclose the existence of additional quartz vein systems, capable of carrying gold mineralization." Additional evaluation is warranted. Moderate mineral development potential for a small mine.

REFERENCES:

6, 50, 87, 138, 166-168, 170, 173-174, 184, 191-193

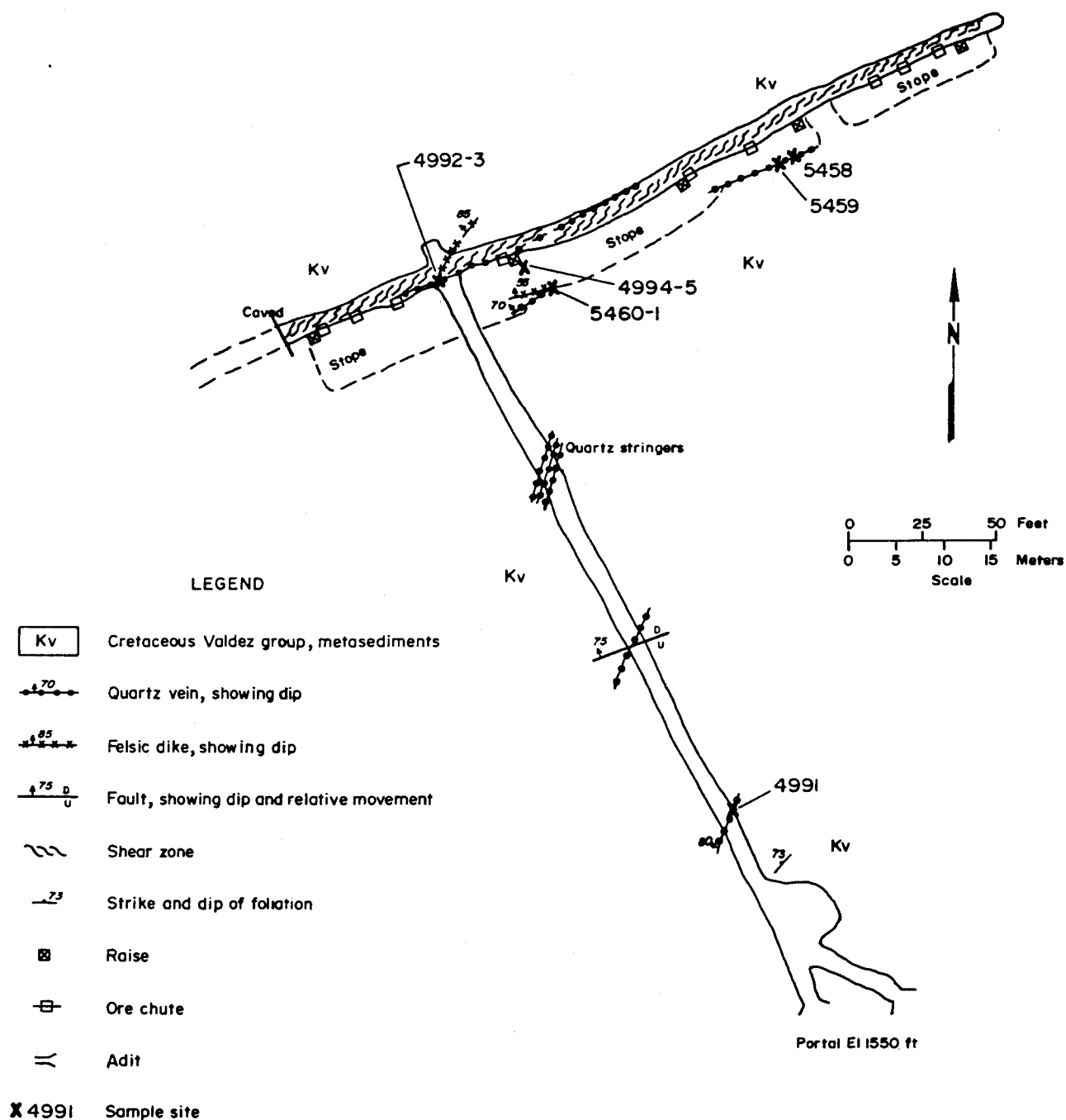


FIGURE C-9. Sample location map for the Portage Bay Mine (S-168).

TABLE C-27. - ANALYTICAL RESULTS - Portage Bay Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Te	
4991	Q.V.	Chip	6 in.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1550 ft level
4992	Q.V.	Chip	8 in.	0.3	1.6	30	490	590	250	ND	ND	ND	ND	<5	ND	ND	1550 ft level
4993	Metased	Chip	18 in.	0.01*	<.02*												
4994	Q.V.	Chip	18 in.	0.25	0.3	50	21	100	38	ND	<2	ND	ND	<5	14	<1	1550 ft level
4995	Metased	Chip	18 in.	0.45	2.4	89	33	74	110	ND	ND	ND	ND	<5	ND	ND	1550 ft level
4995	Metased	Chip	12 in.	0.35	0.85	34	26	91	100	ND	ND	ND	ND	5	ND	ND	1550 ft level
4996	Alluvium	Pan Conc	2 pans	11.31	6.0	27	25	100	ND	ND	ND	ND	ND	<5	ND	ND	10 colors.
5458	Q.V.	Grab	NA	.015*	.02*												
5458	Q.V.	Grab	NA	0.75	0.38	40	11	50	125	ND	3	ND	6	5	8	<1	1550 ft level stope.
5459	Q.V.	Chip	24 in.	.013*	<.02*												
5459	Q.V.	Chip	24 in.	0.4	0.35	50	20	50	30	ND	ND	ND	ND	ND	ND	<1	1550 ft level raise.
5460	Q.V.	Chip	14 in.	0.6*													
5460	Q.V.	Chip	14 in.	16.6	5.6	40	190	50	120	ND	ND	ND	ND	ND	ND	<1	1550 ft level raise.
5461	FeI Plut	Grab	NA	0.2	1.1	7	22	53	130	ND	ND	ND	ND	ND	ND	<1	1550 ft level raise.
5692A	FeI Plut	Chip	18 in.	<.03	0.1	5	22	37	27	ND	ND	ND	ND	ND	ND	ND	1700 ft level
B	Q.V.	Channel	4 in.	2.5	1.3	58	34	135	89	ND	ND	ND	ND	ND	ND	ND	1700 ft level
				.294*	<.2*												
C	Q.V.	Chip	8 in.	14.6	5.3	10	78	180	580	ND	3	ND	ND	<5	10	ND	1700 ft level
D	Q.V.	Chip	4 in.	.03	0.8	16	105	78	100	ND	ND	ND	ND	ND	ND	ND	Visible gold in sample.
E	Ore dump	Pan Conc	1/2pan	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1700 ft level. Visible gold in sample.

* ounces per ton
ND no data

NAME (other names): Billings Glacier COMMODITIES: Mo
Molybdenum Occurrence

LOCATION: Quadrangle: Seward D-5 1/4 Sec 28& 29 T 9N R 5E
Meridian: Seward

Geographic: Located near the terminus of Billings Glacier
about 1 1/2 mi north of Passage Canal.
Mineralization has been identified between
elevations of 400 ft and 1,150 ft along the
eastern side of Billings Glacier and between
600 ft and 750 ft along the west side of the
glacier. Due to the steep terrain and wasting
glacial ice, much of the are of mineralization
is relatively inaccessible for sampling.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-169	NA	NA	NA	AA045836-	NA
				AA0455883	

HISTORY & PRODUCTION:

1981 - Discovery, examination and sampling of the Billings Glacier
Molybdenum Occurrence by the Bureau. Open File Report 141-81
published.

Area staked by Forty Mile Association as the Surprise 1-48 claims.

No production.

RESOURCES: 37,500,000 tons, <0.1 pct molybdenum.

OPERATING DATA:

No workings present.

GEOLOGIC SETTING:

The Billings Glacier molybdenum-copper occurrence is hosted in a biotite
quartz monzonite stock of probable mid-Tertiary age. The stock is
locally exposed over an area measuring roughly 2,000 x 2,500 feet though
much of it remains ice covered. The age of this pluton has not yet been
determined but is likely similar to that of the Passage Canal pluton
located 3 mi east of Billings Glacier which has been dated at 36.6 ± 1.0
m.y.

Some alteration is present and can be recognized by its lighter color
due to the increased quartz content, seritization of K-spar,
destruction of biotite, and coarser texture. Near the contacts,
spheroidally weathered xenoliths occur which upon inspection are found

to consist of plagioclase and quartz with minor disseminated grains of pyrite and molybdenite. The rapid weathering of the xenoliths, which produces bowl shaped depressions in the quartz monzonite, may be due to their increased plagioclase content.

The country rock to the intrusive consists of thermally metamorphosed and silicified (hornfels) interbedded sands and silts with occasional lenses of conglomerate and calcareous siltstones or marls. The bedding, which generally parallels foliation, is locally well developed and strikes northeast with steep dips to the northwest. Many of the sandier interbeds have been stretched and boudined and some are highly brecciated.

A well-developed set of parallel N65-80°E striking low angle (to 25°) southeast dipping, left-lateral faults occurs along the eastern contact between the pluton and adjacent hornfels. Apparent left-lateral offsets of hydrothermal veins of up to 5 ft have been measured along one of these faults. Some of them have well-developed shear zones up to 18-in. thick.

Pyrite, molybdenite, and minor chalcopyrite appear to be the most abundant sulfide minerals in the pluton. The molybdenite is generally restricted to a 200 to 300-ft wide zone of the stock that is parallel to the contact. The molybdenite occurs as (1) disseminated masses up to 1 1/2-in. across in the stockwork veins, (2) as small disseminated grains in the spheroidally weathering portions of the stock, and as (3) fracture fillings where they are usually best developed within 50 ft of the contact.

Surface exposures of molybdenite occur between 400 and 1,150 ft above sea level through a width of 300 ft and can be traced along both contacts for a combined strike length of 2,000 ft.

Small high-grade gold-bearing quartz veins and gold-bearing placer deposits, presumably derived from the veins as a result of glacial erosion and fluvial processes, are the major locatable mineral deposits in the area surrounding the Billings Glacier pluton (see S-168, S-171, and S-172).

BUREAU WORK:

Molybdenite was discovered in the Billings Glacier pluton in 1981.

Rock and stream sediment samples were collected for chemical analyses. Each Bureau rock sample of the stock generally consisted of about 10-12 lbs of walnut-sized chips collected from an area of about 200-300 square ft and analyzed at TSL Labs in Spokane. Data are listed on table C-24. Duplicate grab samples consisting of 1-2 lbs of chips taken from approximately the same sample locations, were analyzed at the USGS's Elemendorf laboratory. Results are listed on tables C-28 and C-29. All Bureau sampling sites in the vicinity of Billings Glacier, with the exception of 2346, 2347, and 4910 collected in 1979 and 1980 about 1 mile north of the mouth of Billings Glacier, are located on figure 10 (see also property S-170, S-171, and S-172).

Data received to date indicate that the grade of the Billings Glacier molybdenum prospect is low, but selected rock samples (5712F, 5819B) contained 2,000 and 1,480 ppm Mo respectively. Other granitic samples contained 98 ppm molybdenum or less. Copper values of up to 90 ppm (5712D) were obtained from samples of the pluton, however, most values were generally less than 50 ppm. Higher copper values, up to 150 ppm (5712B), were found in samples of nearby hydrothermal veins. Gold and silver are present in trace amounts. These data are preliminary and are not believed to be representative due to the small sample size and the tendency to refrain from collecting samples in areas where visible molybdenite was common in order to prevent over optimistic evaluation.

Preliminary evaluation based upon limited field work and the presently available chemical data indicates that the Billings Glacier molybdenum-copper prospect is low in grade but has potential for moderate tonnages. This occurrence is the first significant mineralization found in association with Tertiary plutons of the Prince William Sound Region, Alaska. Additional field and analytical studies of these plutons now appears to be warranted. Low mineral development potential.

REFERENCES:

77, 194

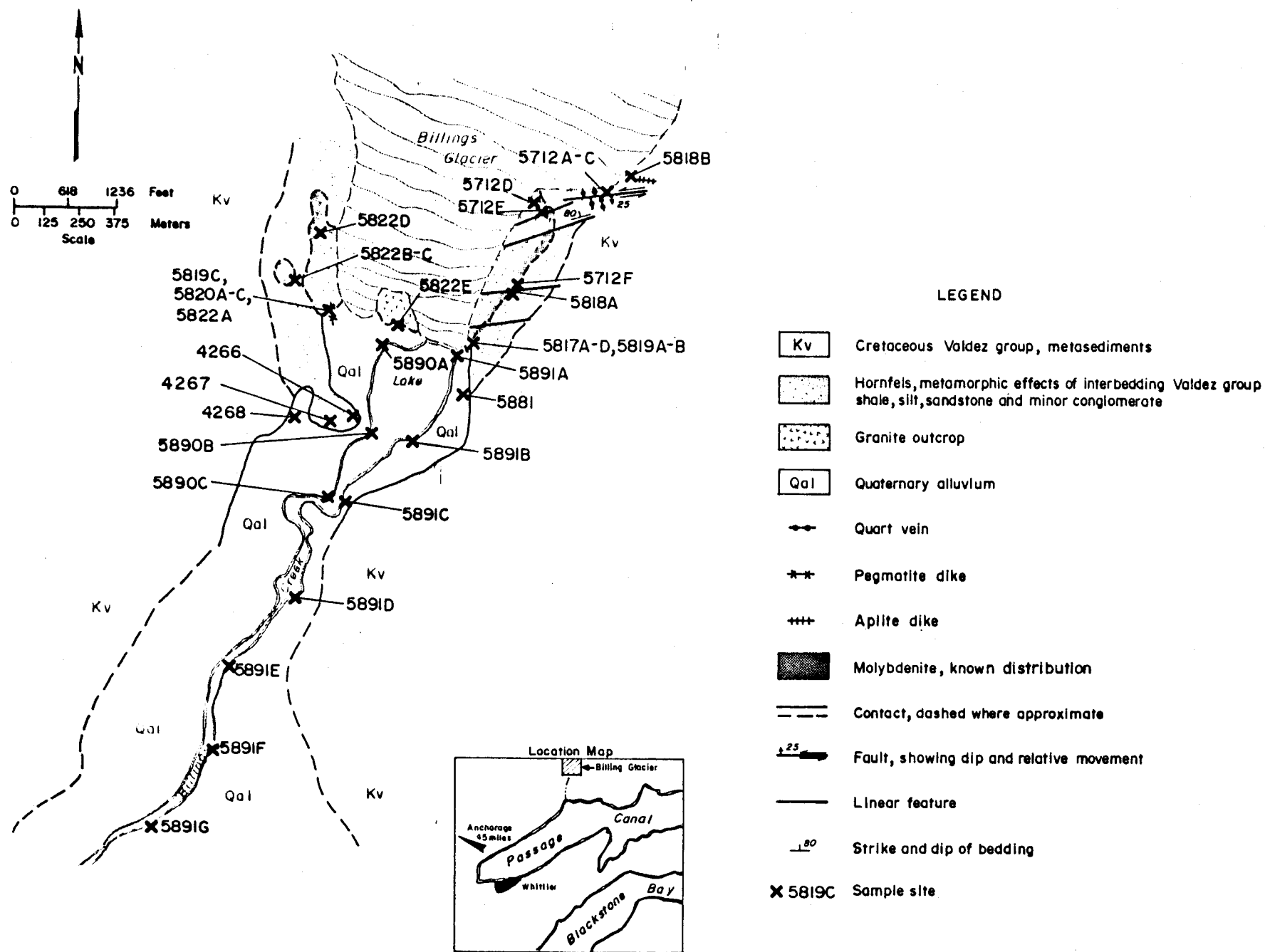


FIGURE C-10. Sample location map for the Billings Glacier molybdenum and Billings Glacier quartz occurrences (S-169 and S-170).

TABLE C-28. - ANALYTICAL RESULTS - Billings Glacier Molybdenum Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5712A	Q.V.	Grab	NA	<.05	<.5	10	5	10	<200	<5	<5	<5	<100	<10	<50	ND	
B	"	"	NA	<.05	3	150	5	10	<200	<5	<5	<5	<100	10	700	ND	
C	"	"	NA	.05	<.5	20	15	20	<200	<5	<5	5	<100	10	<50	ND	
D	Granite	"	NA	<.05	<.5	35/90	15	30	<200	<5	<5	<5	<100	10	<50	ND	
E	"	"	NA	<.05	5/.7	15/45	20	15/25	<200	<5	<5/7	<5	<100	10	<50	ND	
F	"	"	NA	<.05	1.5	40	20	25	<200	<5	2000	<5	<100	20	<50	ND	
5817	Granite	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5818A	Pegmatite	Grab	NA	<0.03	0.5	11	24	41	ND	ND	<2	ND	ND	<5	32	ND	
B	Felsic Dike	Grab	NA	<.03	1.1	43	16	19	ND	ND	<2	ND	ND	<5	17	ND	
5819A	Granite	Grab	NA	<.03	1.2	46	21	69	ND	ND	98	ND	ND	<5	1416	Altered no visible moly.	
B	Granite	Grab	NA	<.03	20.5	45	145	68	ND	ND	1450	ND	ND	<5	<5	Altered w/visible moly.	
5820A	Clay	Grab	NA	0.07	<.03	54	43	160	95	ND	<2	ND	ND	<5	6	Clay in Pegmatite.	
B	Pegmatite Dike	Grab	NA	2.23	8	56	230	25	8600	ND	12	ND	ND	<5	<5	ND	
5822A	Granite	Grab	NA	<.05	<.5	20	10	35	<200	<5	<5	5	<100	10	<50	ND	
B	"	"	NA	<.05	<.5	25	10	35	<200	<5	<5	5	<100	10	<50	ND	
C	"	"	NA	<.05	<.5	35	10	35	<200	<5	<5	5	<100	10	<50	ND	
D	"	"	NA	<.05	<.5	35	10	40	<200	<5	<5	5	<100	<10	<50	ND	
E	"	"	NA	<.05	<.5	35	10	40	<200	<5	<5	5	<100	10	<50	ND	
5712A	Q.V.	Chip	12 in.	<.03	<.03	7	7	14	<10	ND	<2	ND	ND	ND	ND	ND	
B	Q.V.	Chip	NA	0.03	1.6	130	16	35	50	ND	2	ND	ND	ND	ND	ND	
D	Granite	Chip	NA	0.05	0.5	36	18	39	45	ND	<2	ND	ND	ND	<5	ND	
E	Granite	Chip	NA	0.08	1.6	30	18	36	18	ND	36	ND	ND	ND	<5	ND	
F	Granite	Chip	NA	0.03	1.3	14	21	42	<2	ND	76	ND	ND	ND	31	ND	
5822A	Granite	Bulk Chip	NA	0.03	0.5	15	15	49	<10	ND	2	ND	ND	<5	<5	ND	
B	"	"	NA	<.03	0.1	26	13	42	<10	ND	<2	ND	ND	8	8	ND	
C	"	"	NA	0.03	<.03	24	12	46	12	ND	41	ND	ND	<5	<5	ND	
D	"	"	NA	0.05	0.1	73	12	73	28	ND	<2	ND	ND	<5	<5	ND	
E	"	"	NA	<.03	0.2	22	13	67	<10	ND	8	ND	ND	5	5	ND	

* ounces per ton
ND no data

NAME (other names): Billings Glacier Quartz COMMODITIES: Quartz Crystals
Occurrence

LOCATION: Quadrangle: Seward D-5 NE 1/4 Sec 29 T 9N R 5E
Meridian: Seward
Geographic: This occurrence is located on the west side
and near the terminus of Billings Glacier at
an elevation of approximately 450 ft.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
<u>S-170</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1981 - First discovered and sampled by the Bureau. Open
File Report 141-81 published.

Surprise 1-48 claims located in area by Forty Mile Association.

Approximately 300 lbs of specimen grade quartz collected.

RESOURCES: ND

OPERATING DATA:

A small pit has been hand dug for the purpose of removing quartz crystals.

GEOLOGIC SETTING:

Mineralization consists of a pegmatitic vein up to 12-ft wide containing a clay filled vug with euhedral, doubly terminated quartz crystals up to 18-in. long. The pegmatite also contains cleavelandite and muscovite. The quartz crystals are translucent and commonly coated with muscovite.

BUREAU WORK:

Several crystals were collected and returned to the Anchorage Field Office for display. Clay collected from the quartz-filled pocket was analysed by emission spec. The results are listed on table C-30. High mineral development potential for specimen grade quartz crystals.

REFERENCES:

TABLE C-30. - ANALYTICAL RESULTS - Billings Glacier Quartz

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)														Descriptions
				Al	Sb	As	Ba	Be	Bi	B	Ca	Cd	Cr	Co	Nb	Cu		
5810A	Clay	Grab	NA	6%	ND	ND	1000	ND	ND	20	3000	ND	100	ND	ND	40	ND	
				Ga	Fe	La	Pb	Li	Mn	Mg	Mo	Ni	P	Ag	Si	Na		
				20	4%	ND	ND	ND	200	8000	ND	50	ND	ND	72%	10000	ND	
				Sr	Ta	Sn	Ti	V	Yt	Zn	Zr							
				ND	ND	ND	1000	100	10	ND	ND						ND	
			</															

ND no data

NAME (other names): Golden Giant Prospect,
(Collins, Fish and
Barry) COMMODITIES: Au

LOCATION: Quadrangle: Seward D-5 SE 1/4 Sec 29 T 9N R 5E
Meridian: Seward

Geographic: This occurrence is located on the east side
and near the toe of Billings Glacier.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-171	187	139	243	AA036321- AA036324	NA

HISTORY & PRODUCTION:

1912 - Located by Collins, Fish, and Barry (86).

1979 - Evidence of assessment filed by F. S. Pettyjohn (194).

1981 - Area staked by 40 Mile Association.

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings located.

GEOLOGIC SETTING:

The mineralization is a 1 1/2- to 5-ft wide dike in contact metamorphosed metasediments spacially associated with the Billings Glacier pluton. The dike can be traced several thousand feet. Similar dikes are well-exposed on the west side of Billings Creek on a small knob 1/4 mile south of the glacier. These dikes are recemented by quartz-carbonate veins containing arsenopyrite and small amounts of sphalerite, galena, and gold. Portions of the dikes are highly altered. One quartz vein sampled contained high tungsten values (4267).

BUREAU WORK:

Work done in the Billings Glacier area resulted in the discovery of molybdenum mineralization in the Billings Glacier stock (S-169) large quartz crystals in a pegmatite associated with the stock, (S-170) and anomalous placer gold values in Billings Creek (P-41). Areas of previously reported mineralization as well as recently exposed areas of potential mineralization were examined and sampled in 1979, 1980 and 1981. Sample results pertinent to the Golden Giant occurrence are listed in table C-31. Low mineral development potential.

REFERENCES:

6, 50, 86, 185, 191-192, 194

TABLE C-31. - ANALYTICAL RESULTS - Golden Giant Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
2346	Alluvial	StrSed	NA	0.07	<1	30	15	75	<500	10	<2	50	<100	<10	<50		ND
2347	Alluvial	StrSed	NA	0.06	<1	30	15	75	<500	15	<2	50	<100	<10	<50		ND
4266	Fel Plut	Grab	NA	<.02	.2	30	35	30	30	<5	<2	5	<100	30	<50		ND
4267	Q.V.	Grab	NA	.09	.2	200	15	<200	200	30	<2	70	<100	50	700		ND
4268	Alluvial	StrSed	NA	<.02	ND	25	15	80	10	5	<2	100	<100	<10	<50		ND
		Pan															
4910	Alluvial	Conc	NA	0.79	2.7	20	26	90	ND	ND	ND	ND	ND	ND	ND		ND
5890A	Alluvial	StrSed	NA	<.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
5890B	Alluvial	StrSed	NA	<.05	ND	30	20	70	ND	ND	ND	ND	ND	ND	ND		ND
5890C	Alluvial	StrSed	NA	<.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
5891A	Alluvial	StrSed	NA	0.1	ND	30	20	70	ND	ND	ND	ND	ND	ND	ND		ND
5891B	Alluvial	StrSed	NA	2.5	ND	25	15	65	ND	ND	ND	ND	ND	ND	ND		ND
5891C	Alluvial	StrSed	NA	<0.5	ND	30	20	65	ND	ND	ND	ND	ND	ND	ND		ND
5891D	Alluvial	StrSed	NA	0.1	ND	35	15	65	ND	ND	ND	ND	ND	ND	ND		ND
5891E	Alluvial	StrSed	NA	1.5	ND	30	15	65	ND	ND	ND	ND	ND	ND	ND		ND
5891F	Alluvial	StrSed	NA	<.05	ND	30	15	65	ND	ND	ND	ND	ND	ND	ND		ND
5891G	Alluvial	StrSed	NA	<.05	ND	20	15	60	ND	ND	ND	ND	ND	ND	ND		ND
		Placer															
7222	Alluvial	Dredge	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		0.0014 oz/hour recovered.

239.

* ounces per ton
ND no data

NAME (other names): Bullion Ledge Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-5

SE 1/4 Sec 29 T 9N R 5E

Meridian: Seward

Geographic: This property is reported to be on the east side of Billings Creek approximately 3/4 mi from shore.

REFERENCE NUMBERS:

Map
S-172

Kx
T86

Tysdal
T40

MAS
242

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911 - Located by Albert Nordstrom, Teening Carlson and George Furmen (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

Mineralization consists of quartz stringers in a belt of slate reported to be 3,000-ft long and 1,100-ft wide. The stringers are 1- to 18-in. wide and spaced at intervals of 1 to 3 ft. Similar veins examined by the Bureau contained minor arsenopyrite, chalcopyrite, galena, and sphalerite and are believed to be low grade.

BUREAU WORK:

This specific property was not examined. Similar mineralization was sampled approximately 1/2-3/4 mile north of the reported location of this occurrence. Results from samples collected nearby are included in table C-31. (See Golden Giant Group, S-171). Undetermined mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

NAME (other names): Upper Carmen River Occurrence COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-5 SW 1/4 Sec 19 T 9N R 5E

Meridian: Seward

Geographic: This occurrence is located on the divide
between the two forks of the Carmen River and
Billings Creek at an elevation of 3000 ft.

REFERENCE NUMBERS:

Map
S-173

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

None.

RESOURCES: ND

OPERATING DATA:

None.

GEOLOGIC SETTING:

Mineralization consists of a vertical up to 3-ft wide hematite-stained quartz vein striking N10°-20°E hosted by highly folded well-bedded slate and metasandstone. This vein has a strike length exposure of about 20 ft. Other veins occur in the immediate area. Sulfides identified include arsenopyrite, pyrite, and chalcopyrite.

BUREAU WORK:

This occurrence was briefly examined and sampled in 1982. One sample (7234) contained trace amounts of gold and silver. Sample results are listed on table C-32. Low mineral development potential.

REFERENCES:

This report.

TABLE C-32. - ANALYTICAL RESULTS - Upper Carmen River Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7234	QV	Grab	NA	0.092	0.570	30	<200	110	55	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Whittier Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-5

1/4 Sec 11? T 8N R 4E

Meridian: Seward

Geographic: This occurrence is reported to be located on the north side of Passage Canal, north of Whittier (184).

REFERENCE NUMBERS:

Map
S-175

Kx
184

Tysdal
142

MAS
126

BLM
NA

MS
NA

HISTORY & PRODUCTION:

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

Searched for but not located in 1981. Undetermined mineral development potential.

REFERENCES:

6, 14, 184, 191-192

NAME (other names): Hillside, Banta, and Sullivan Occurrence COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-5 NE 1/4 Sec 1 T 8N R 4E
 Meridian: Seward
 Geographic: The Hillside vein is reported to occur at an
 elevation of 1,000 ft near the head of the
 western tributary to Billings Creek (86).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-174	181,185	<u>141</u>	241,245	AA029913- AA029916	NA

HISTORY & PRODUCTION:

1913 - Hillside vein located by J. P. Hansen and J. Young (86).

1914 - Quartz vein discovered by Banta and Sullivan (87).

1973 - Relocated by F. S. Pettyjohn (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported to consist of quartz veins in metasandstone containing pyrrhotite, chalcopyrite, sphalerite, galena, and gold. The vein is reported to be 30-ft long and up to 3-ft wide (86). Float examined contains minor chalcopyrite and pyrrhotite.

BUREAU WORK:

The area was reconnoitered from the air in 1982 and float was examined in the stream draining this valley. Numerous hematite stained quartz veins occur along the valley walls especially at the head of the valley near the glacier. Undetermined mineral development potential.

REFERENCES:

6, 50, 86-87, 184, 191-192, 194

NAME (other names): Earnest King Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-5

NE 1/4 Sec 15 T 8N R 4E

Meridian: Seward

Geographic: This occurrence is reportedly located near the tip of Learnard Glacier at an elevation of about 700 ft on the north side of Passage Canal (86).

REFERENCE NUMBERS:

Map
S-176

Kx
182

Tysdal
143

MAS
246

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1913 - Located by Earnest King (86).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

This is one of numerous 3- to 36-in. wide quartz veins in the general area. Most parallel the N-N20°E striking vertically dipping interbedded slate and metasandstone host rocks. This vein is reported to have a maximum width of 1 ft and an exposed strike length of 100 ft (86).

Float samples contain small amounts of arsenopyrite, pyrite, chalcopyrite, and galena (see also S-179).

BUREAU WORK:

Float samples believed to be derived from this prospect were sampled in 1981. Trace amounts of antimony, gold and silver were detected. Low mineral development potential.

REFERENCES:

6, 50, 86, 184, 191-192

NAME (other names): Emerald Bay Occurrence

COMMODITIES: Au?, Ag

LOCATION: Quadrangle: Seward D-5

NW 1/4 Sec 9 T 8N R 5E

Meridian: Seward

Geographic: This occurrence is located on the south side of Passage Canal 1/3 mi east of the mouth of Emerald Bay.

REFERENCE NUMBERS:

Map
S-177

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

None.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a 2- to 6-in. wide quartz vein containing pyrite and pyrrhotite.

BUREAU WORK:

This vein was briefly examined and sampled in 1981. Data from 2 samples 5735 A and B are listed on table C-33. Low mineral development potential.

REFERENCES:

This report.

TABLE C-33. - ANALYTICAL RESULTS - Emerald Bay Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5735A	Q.V.	Chip	6 in.	<0.03	0.1	33	24	55	12	ND	ND	ND	ND	ND	ND	ND
5735B	Q.V.	Chip	6 in.	0.03	0.2	28	11	40	<10	ND	ND	ND	ND	ND	ND	ND

ND - No data

NAME (other names): Singleton, O'Neil
Occurrence

COMMODITIES: Au?

LOCATION: Quadrangle: Seward D-5 1/4 Sec 15 T 8N R 5E
Meridian: Seward
Geographic: These claims are located along the ridge
separating Shotgun Cove from Blackstone Bay.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-178	405	146	76	AA029612- AA029619	NA

HISTORY & PRODUCTION:

1973 - Located by W. and K. Tiede (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

Mineralization consists of several thin quartz veins spacially associated with the Port Wells Fault in sheared metasiltstone and sandstone having a foliation striking N40°E and dipping steeply NW. Several unmineralized felsic dikes occur nearby.

BUREAU WORK:

This property was searched for from the air and by boat in 1980 and 1981. Significant mineralization was not located in the vicinity of these claims. However, minor mineralization was located along structural trend 7 miles to the southwest near Northland Glacier (see S-182). Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192, 194

NAME (other names): Cove Creek Occurrence COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-5 SE 1/4 Sec 13 T 8N R 4E
Meridian: Seward
Geographic: This occurrence is located in the middle of
the access road to the small bay at the mouth
of Cove Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>S-T79</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

None.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of two quartz veins hosted by slate and metasandstone. One vein is 2- to 3-in. wide and contains pyrite. The second, vein which crops out in the road bed, is 4- to 16-in. wide and contains pyrite, pyrrhotite, and chalcopyrite.

BUREAU WORK:

These veins were briefly examined and sampled by the Bureau in 1981. Because of their low grade they are believed to have little commercial value. Results are listed on table C-34. Low mineral development potential.

REFERENCES:

This report.

TABLE C-34. - ANALYTICAL RESULTS - Cove Creek Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5735C	Q.V.	Grab	NA	0.09	0.1	5	5	34	260	ND	ND	ND	ND	ND	ND	ND	ND
5735D	Q.V.	Grab	NA	0.03	0.1	11	11	39	<10	ND	ND	ND	ND	ND	ND	ND	ND
5735E	Q.V.	Grab	NA	<.03	0.7	22	83	37	<10	ND	ND	ND	ND	ND	ND	ND	ND
5735F	Q.V.	Grab	NA	<.03	0.3	17	15	37	<10	ND	ND	ND	ND	ND	ND	ND	Road bed.
5735G	Q.V.	Grab	NA	<.03	0.2	16	31	78	20	ND	ND	ND	ND	ND	ND	ND	Road bed.
5735H	Q.V.	Grab	NA	<.03	0.1	14	8	42	<10	ND	ND	ND	ND	ND	ND	ND	Road bed.
5735I	Q.V.	Grab	NA	2.9	0.4	18	16	49	13	ND	ND	ND	ND	ND	ND	ND	Road bed.

ND no data

NAME (other names): Portage Pass Mining Co. COMMODITIES: Au?
Occurrence

LOCATION: Quadrangle: Seward D-5 1/4 Sec 21 T 8N R 4E
Meridian: Seward
Geographic: This occurrence is reported to be located on
the northwest side of Portage Pass 1/2 mi
northeast of Divide Lake (14).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-180	259	145	135	NA	NA

HISTORY & PRODUCTION:

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

No geologic data. This vein is likely similar to others examined in the
area (see S-176).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 14, 88, 184, 191-192

NAME (other names): Portage Pass Occurrence

COMMODITIES: Cu?

LOCATION: Quadrangle: Seward D-5

1/4 Sec 20 T 8N R 4E

Meridian: Seward

Geographic: This occurrence is located on the north side of Portage Glacier one mile east of Divide Lake reportedly near the base of the south slope of Portage Shoulder (14).

REFERENCE NUMBERS:

Map
S-181

Kx
NA

Tysdal
144

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1939 - Occurrence reported by Barnes (14). He also discussed several other occurrences in the area.

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings. Barnes (14) discussed the known mining developments in the area.

"There are no active mining developments in the Portage Pass area. An old claim at the head of Passage Canal includes the mineralized vein associated with the large diorite dike exposed in the bluffs south of the bay. Very little development work was done on this claim, and so far as known no workable deposits have been found. Some mineralization has occurred at a few other places in the area, notably near the base of the south slope of Portage Shoulder and at the mouth of Placer Creek, but none of these occurrences appeared promising as sources of valuable minerals.

The discovery of a copper lode "on the north side of the Portage Glacier Pass" was reported in 1915, but no development work is known to have been done on it. The nearest active mining development is a gold-lode mine on the north side of Passage Canal about 8 miles from its head. This property is reported to have yielded some excellent prospects in gold."

GEOLOGIC SETTING:

No geologic data. This vein is likely similar to others examined in the area (see S-176, S-180).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

14, 184

NAME (other names): Northland Glacier
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward C-5 NW 1/4 Sec 23 T 7N R 4E
Meridian: Seward
Geographic: This occurrence is located along the north-
west side of a small ridge north of Northland
Glacier.

REFERENCE NUMBERS:

Map
S-182

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

None.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of en echelon quartz veins and vein stockworks striking N10-15°W and N40°E striking vertical quartz veins containing pyrrhotite and minor chalcopyrite. Podiform masses of quartz contain up to 15 pct weathered sulfide. The veins are thin and discontinuous, locally hematite stained and extremely vuggy at the surface. These veins are spacially associated with the southwest extension of the Port Wells Fault and are similar to those exposed in the vicinity of the Lansing Mine.

BUREAU WORK:

The Northland Glacier area was sampled (5700 A-D, 5699) in 1981. Placer samples collected from creeks draining this area contained anomalous gold values. Results are listed in table C-35. Low mineral development potential.

REFERENCES:

This report.

TABLE C-35. - ANALYTICAL RESULTS - Northland Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5700A	Q.V.	Grab	NA	0.03	0.3	39	31	23	15	ND	ND	ND	ND	ND	ND	ND
5700B	Q.V.	Grab	NA	<.03	0.3	84	26	40	19	ND	<2	ND	ND	ND	ND	ND
5700C	Q.V.	Grab	NA	0.03	<0.03	17	10	23	<10	ND	<2	ND	ND	ND	ND	ND
5700D	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5699	Alluvium	Placer	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sulfides and 10 colors recovered from 0.1 yd ³ sample.

ND no data

NAME (other names): Kings River Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-5

NW 1/4 Sec 24 T 5N R 3E

Meridian: Seward

Geographic: This occurrence is located near the toe of a glacier located above the west headwater fork of the Kings River at an elevation of 2,400 ft.

REFERENCE NUMBERS:

Map
S-183

Kx
NA

Tysdal
NA

MAS
NA

BLM
AA043731 -
AA043740

MS
NA

HISTORY & PRODUCTION:

1980 - Coarse placer gold and sulfide mineralization discovered near the headwaters of the Kings River by the Bureau.

1981 - Claims located by Kelly Keisling and Dennis Dewane (194).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

The mineralization consists of numerous fractured tabular felsic plutons intruded into carbonaceous locally hematite-stained slates and metasandstones. The dikes vary from 1- to 5-ft thick with up to 15 pct quartz-calcite veins containing arsenopyrite, chalcopyrite, pyrite, and pyrrhotite occupying the fractures. The plutons are locally discordant but in general strike parallel to the metasediments at N35°E and dip 55-80°NW. Other quartz veins occur in the area, one of which is reported to contain visible gold. Significant concentrations of placer gold were identified in the Kings River below this occurrence.

BUREAU WORK:

Placer and lode samples were collected in this area during the 1980 field season. Table C-36 lists the analytical results from three rock samples (5380, 5382, 5383). Additional reconnaissance is recommended in this area because of the lack of previous prospecting activity and the presence of coarse gold in the Kings River. Low mineral development potential.

REFERENCES:

194

TABLE C-36. - ANALYTICAL RESULTS - Kings River Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5380	Q.V. Fel Plut	Grab	NA	0.75	3.8	9	19	19	1100	ND	ND	ND	5	ND	ND	ND	ND
5382	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5383	Met Sed	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Kings Bay Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward B-7

1/4 Sec 10 T 4N R 4E

Meridian: Seward

Geographic: A overgrown road believed to be related to this prospect was identified just north of the mouth of the Kings River.

REFERENCE NUMBERS:

Map
S-184

Kx
180

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1900 - Placer claim filed nearby (6).

1981 - General description of mine location obtained from local miner.

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings are believed to exist.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

Evidence of mining in the form of a road or trail was identified from the air in 1981 by a Bureau crew. However, neither workings or mineralization were located. Undetermined mineral development potential.

REFERENCES:

6, 191

NAME (other names): Wolverine Glacier Occurrence COMMODITIES: Au?, Ag

LOCATION: Quadrangle: Seward B-6 NE 1/4 Sec 10 T 3N R 3E
 Meridian: Seward
 Geographic: This occurrence is located near the toe of
 Wolverine Glacier on the southwest side.

REFERENCE NUMBERS:

Map Kx Tysdal MAS BLM MS
S-185

HISTORY & PRODUCTION:

None.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of fractured, vertically dipping, tabular felsic plutons striking N20° to 40°E. Quartz and calcite, locally containing pyrrhotite, pyrite, and chalcopryite, occur in the fractures. These plutons are part of a north-northeasterly striking belt extending at least to Blackstone Bay. Most of the veins appear to be barren. Anomalous concentrations of placer gold were located in Wolverine Creek in 1980.

BUREAU WORK:

This occurrence was located and briefly examined by the Bureau in 1980. Results from samples (4953, 4956) are listed in table C-37. Low mineral development potential.

REFERENCES:

This report.

TABLE C-37. - ANALYTICAL RESULTS - Wolverine Glacier Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4955	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample lost during shipment.
4956	Q.V.	Grab	NA	<.03	2.5	38	52	79	28	ND	ND	ND	ND	ND	ND	

NAME (other names): W. Talus Bay Occurrence

COMMODITIES: Cr

LOCATION: Quadrangle: Seward A-6

1/4 Sec 14 T 2S R 1E

Meridian: Seward

Geographic: This occurrence is located approximately 3/4
mi west of Talus Bay at an elevation of 1,500
ft.

REFERENCE NUMBERS:

Map
S-186

Kx
NA

Tysdal
104

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Tysdal describes the mineralization as occurring in the marginal phase of a gabbro near its contact with sheeted dikes. One sample contained 1,000 ppm chromium.

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Talus Bay Occurrence

COMMODITIES: Cr, Ni

LOCATION: Quadrangle: Seward A-6

1/4 Sec 13 T 2S R 1E

Meridian: Seward

Geographic: This occurrence is located at the head of
Talus Bay.

REFERENCE NUMBERS:

Map
S-187

Kx
NA

Tysdal
102

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Tysdal describes the mineralization as a shear zone several yards wide in gabbro. One sample contained 1,500 ppm chromium and 300 ppm nickel.

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): N. Talus Bay Occurrence

COMMODITIES: Cr, Ni

LOCATION: Quadrangle: Seward A-6

1/4 Sec 12 T 3S R 1E

Meridian: Seward

Geographic: This occurrence is located approximately 1/2 mi north of the head of Talus Bay at an elevation of 1,500 ft.

REFERENCE NUMBERS:

Map
S-188

Kx
NA

Tysdal
101

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

The mineralization is described as being in a serpentized dunite possibly along a fault zone. A sample contained 5,000 ppm chromium and 3,000 ppm nickel.

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Day Harbor Occurrence

COMMODITIES: Cr, Ni

LOCATION: Quadrangle: Seward A-6

1/4 Sec 7 T 2S R 2E

Meridian: Seward

Geographic: This occurrence is located approximately 4 mi from the head of Day Harbor on the north shore at an elevation of approximately 1,000 ft.

REFERENCE NUMBERS:

Map
S-189

Kx
NA

Tysdal
97

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Tysdal describes the mineralization as a serpentized dunite, a sample of which contained 3,000 ppm chromium and 5,000 ppm nickel.

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Copper Chief, Iron Cap
Real Thing Prospects

COMMODITIES: Cu

LOCATION: Quadrangle: Seward A-7 1/4 Sec 10 T 2S R 1E
Meridian: Seward
Geographic: These prospects occur at the head of Thumb
Cove near Spoon Glacier along the base of a
high cliff.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-T90	55	98	74	NA	NA
	166	99	80		
		100	81		

HISTORY & PRODUCTION:

1908 - Staked by S. E. Likes and A. H. Frazer (64).

1955 - Possibly a portion restaked by John Knudsen as the Lucky Mona
Mine (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings reported.

GEOLOGIC SETTING:

The Copper Chief deposit occurs along a 6-ft wide shear zone in pillow basalt which contains quartz veinlets with disseminated pyrite, chalcopyrite, hematite, and epidote. The shear zone strikes N37°W and dips 35°S. The Iron Cap deposit consists of disseminated sulfides including chalcopyrite and pyrite with magnetite traceable for 4,500 ft along the glacier. The Real Thing deposit is described as a 10-ft wide massive sulfide vein 450- to 650-ft long containing chalcopyrite with irregular patches of pyrite on one side of the vein and magnetite with scattered chalcopyrite on the other side.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 64, 108, 184, 191-192

NAME (other names): Day Harbor Prospect

COMMODITIES: Cu

LOCATION: Quadrangle: Seward A-6

1/4 Sec 5? T 2S R 2E

Meridian: Seward

Geographic: This prospect is reported to occur on Day Harbor 4 mi southwest of the head of the bay (65).

REFERENCE NUMBERS:

Map
S-191

Kx
T74

Tysdal
96

MAS
75

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1900 - Approximate year of location (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

A small amount of work has been reported.

GEOLOGIC SETTING:

Mineralization is reported to consist of disseminated sulfides in a 4-ft wide shear zone between gabbro and peridotite. Some coarse gabbro occurs in the zone which contains pyrrhotite, pyrite, and possibly small amounts of chalcopyrite.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 65, 108, 184, 191-192

NAME (other names): Godwin Glacier Occurrence COMMODITIES: V, Cu

LOCATION: Quadrangle: Seward A-6 1/4 Sec 30 T 1S R 2E
 Meridian: Seward

Geographic: This occurrence is located on the east side of a stream draining Godwin Glacier and emptying into Day Harbor, at an elevation of about 1,400 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>S-192</u>	<u>NA</u>	<u>95</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization is reported to be a small iron-stained disseminated sulfide-bearing zone in medium grained gabbro. A sample contained 100 ppm copper and 2,000 ppm vanadium (184).

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): 4th of July Creek
Occurrence

COMMODITIES: Cu, Zn

LOCATION: Quadrangle: Seward A-6
Meridian: Seward

NE 1/4 Sec 14 T 1S R 1E

Geographic: This occurrence is located at an elevation of
2,500 ft at the head of Fourth of July Creek.

REFERENCE NUMBERS:

Map
S-193

Kx
NA

Tysdal
94

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization is reported to consist of disseminated pyrite in an
iron-stained zone in pillow basalts. A sample contained 300 ppm copper
and 530 ppm zinc (184).

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Redman and Guyot Occurrence

COMMODITIES: Cu

LOCATION: Quadrangle: Seward A-7

1/4 Sec 10 T 1S R 1E

Meridian: Seward

Geographic: This occurrence is reported to occur at the head of Godwin Creek just south of Godwin Glacier at an elevation of 2,700 ft (64).

REFERENCE NUMBERS:

Map
S-194

Kx
T68

Tysdal
93

MAS
78

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1908 - Originally staked by W. L. Redman and Samuel Guyot (64).

No reported production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a massive sulfide vein up to 9-ft wide with a heavily iron-stained gossan containing malachite, azurite, and chalcopyrite.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 64, 108, 184, 191-192

NAME (other names): No. 69 Prospect, (Godwin,
Shaw, Denbreu et.al.)

COMMODITIES: Cu, Au

LOCATION: Quadrangle: Seward A-7
Meridian: Seward

1/4 Sec 34 T 1N R 1E

Geographic: This prospect is reported to occur on the
north side of Godwin Glacier at an elevation
of 2,400 ft (64).

REFERENCE NUMBERS:

Map
S-195

Kx
T62

Tysdal
92

MAS
77

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1907 - Originally staked by L. F. Shaw, John Deubruel and G. Bouchaert
(64).

1966 - Restaked by A. W. Smith (6).

1981 - Restaked by E. E. Ellis (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

Little work has been done.

GEOLOGIC SETTING:

Mineralization is reported to consist of a massive sulfide vein
containing solid pyrrhotite. and minor chalcopyrite. A quartz vein up
to 8-ft wide containing copper and gold is reported to occur nearby (64).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 64, 108, 184, 191-192

NAME (other names): Rusty Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward A-7

1/4 Sec 12 T 1S R 1W

Meridian: Seward

Geographic: This occurrence is reported to occur near the mouth of Fourth of July Creek on the north side.

REFERENCE NUMBERS:

Map
S-196

Kx
371

Tysdal
91

MAS
82

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1961 - Originally staked by Walter Plohaus (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Resurrection Bay
Mining Co. Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward A-7 SE 1/4 Sec 9 T 1S R 1W
Meridian: Seward
Geographic: This prospect is located on the west side of
Resurrection Bay 1/3 mi south of Seward
between 10 ft and 200 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-197	43	90	92	NA	NA

HISTORY & PRODUCTION:

1911-1912 - Development work reported (64).

1953 - Relocated by Archie Yoder as the Ashland Gold Mine (6).

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Four adits are reported to occur at elevations of 10, 70, 120, and 220 feet respectively (64). A 10-ft winze occurs in the 70 ft level, the lower adit was 100-ft long and the 120-ft level was 15-ft long in 1912.

GEOLOGIC SETTING:

Apparently several quartz veins were prospected during the development of this property. They are described as quartz-calcite veins and stringers reaching a maximum width of 3 ft along shear zones in black slate, slate and metasandstone. They generally strike N50°E and dip vertically. Metallic minerals include arsenopyrite, sphalerite, pyrite, chalcopyrite, galena, and gold.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 64, 108, 184, 191-192

NAME (other names): Northern Light Prospect
(Tozier-Lane)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward A-7

SE 1/4 Sec 9 T 1S R 1W

Meridian: Seward

Geographic: This patented property is reported to be at the southern edge of the alluvial fan on which the town of Seward has been built (108).

REFERENCE NUMBERS:

Map
S-198

Kx
143

Tysdal
90

MAS
92

BLM
NA

MS
981

HISTORY & PRODUCTION:

1907 - Originally located by A. C. Gould, Charles Hewitt and F. S. Conner (108).

1911 - Deeded to Herbert Tozier (108).

1912 - Development work reported. Patented (108).

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings in 1912 were reported to consist of a 165-ft adit with a small winze at 100 ft above sea level, a 12-ft shaft near the portal and 2 short adits below the 100-ft level (108).

GEOLOGIC SETTING:

Mineralization is reported to consist of several quartz veins occupying well-developed nearly parallel joints in a large massive metasandstone bed (108). One vein, 3- to 14-in. wide, strikes N55°W and dips 81°NE at the portal. A second vein, located 75 ft north of the portal in a small gulch, is 10-in. wide strikes N57°W and dips 85°NE. A third vein, located south of the portal strikes N75°W and dips 85°N. This vein is 8- to 14-in. wide and was traced 200 ft uphill. Numerous parallel quartz stringers parallel the bedding of a nearby 6-ft wide slate bed. Metallic minerals include chalcopyrite, pyrrhotite, pyrite, galena, sphalerite, arsenopyrite, and gold.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192

NAME (other names): Last Chance Prospect
(Kana Gold Mine)

COMMODITIES: Au

LOCATION: Quadrangle: Seward A-7 NW 1/4 Sec 10 T 1S R 1W
Meridian: Seward
Geographic: The workings are reported to be within the
city limits of Seward about 450 ft NW of the
original Seward High School (81).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-199	41,275	89	86,91	NA	NA

HISTORY & PRODUCTION:

1910-1915 - Adit reportedly driven (81).

1922(approx.) - Originally established as a 240 acre homestead by
Carlos Brownell who sold it to the city of Seward but
retained the mineral rights (81).

1941-41 - Mineral rights transferred to Carl Thomas and Jack Haynes.
Shaft sunk to 36 ft (81).

1958-59 - Minor development work.

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings in 1942 were reported to consist of a caved adit, an old shaft
10 to 18 ft deep and a new shaft 36 ft deep (81).

GEOLOGIC SETTING:

Mineralization is reported to consist of a fissure vein 60- to 74-in.
wide containing arsenopyrite, pyrite, and gold (81). The vein strikes
N50°E and dips 85°SE. The average grade of 17 samples collected by
Jasper (81) in 1957 was 0.14 oz gold/ton.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

1-3, 6, 81, 184, 191-192

NAME (other names): Cannibal and Dimpy, COMMODITIES: Au?
Lucky Mona, Caffel,
Laford, Elvira, Fanny,
George and others Occurrences

LOCATION: Quadrangle: Seward A-7 1/4 Sec 21,22 T 1N R 1W
Meridian: Seward
Geographic: Several groups of claims were located on the north
side of the Resurrection River west of the
Seward Highway.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-200	53,55	NA	NA	NA	NA
	64,72-74				

HISTORY & PRODUCTION:

1955 - Originally located by Jessie Ponko (Cannibal and Dimpy), John Knudsen (Lucky Mona), Henry Cuffel and Lou Laford (Caffel and Laford), Marilyn Ponko, Marshall Ponko Jr. and Marshal Ponko (Elvira, Fanny, George, Abby, Betty) (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191

NAME (other names): Mile 4 Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward A-7

SW 1/4 Sec 14 T 1N R 1W

Meridian: Seward

Geographic: This prospect is reported to occur at mile 4 on the Alaska Railroad 1/2 mi west of the tracks at an elevation of 65 ft.

REFERENCE NUMBERS:

Map
S-201

Kx
146

Tysdal
87

MAS
87

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1910 - Originally discovered by Nicholas Losness (85).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to consist of a 115-ft adit, 23-ft inclined shaft 3 ft above the adit, and 75 ft of surface stripping.

GEOLOGIC SETTING:

Mineralization is reported to consist of quartz stringers and pods up to 3-ft wide which are irregularly distributed in slate. Minerals include arsenopyrite, galena, sphalerite, pyrite, pyrrhotite, chalcopyrite, and gold. The gold is said to occur free and in the sulfides. High assays are reported from some of the narrower stringers.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 85, 108, 184, 191-192

NAME (other names): Seward Limestone
Occurrence

COMMODITIES: Limestone

LOCATION: Quadrangle: Seward A-7
Meridian: Seward

NE 1/4 Sec 14 T 1N R 1W

Geographic: This limestone occurrence is located near mile
4 of the Seward Highway on the west side of the
road.

REFERENCE NUMBERS:

Map
S-202

Kx
NA

Tysdal
86

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - Described by Tysdal (184).

No reported production.

RESOURCES: 600 tons

OPERATING DATA:

None.

GEOLOGIC SETTING:

Mineralization consists of a 4 1/2-ft thick, 10-ft wide, 190-ft long
limestone deposit exposed in the bed of a small intermittent stream.
The limestone is porous and quite pure, similar in appearance to the
Russian River limestone deposit (S-237).

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Mile 7 1/2 Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward A-7

1/4 Sec 2 T 1N R 1W

Meridian: Seward

Geographic: This prospect is reported to occur at
approximately 700 ft above sea level on Lost
Creek.

REFERENCE NUMBERS:

Map
S-203

Kx
T49

Tysdal
85

MAS
NA

BLM
AAU36309-
AA036312

MS
NA

HISTORY & PRODUCTION:

1980 - Evidence of assessment filed by F. S. Pettyjohn (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

The area was examined briefly in 1982. Evidence of claim staking was located but significant mineralization was not found. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191, 194

NAME (other names): Homestake Ledge Prospect **COMMODITIES:** Au, Ag, As

LOCATION: Quadrangle: Seward A-7 NE 1/4 Sec 35 T 2N R 1W

Meridian: Seward

Geographic: The workings are located in a small tributary gully on the east side of Lost Creek at an elevation of approximately 1,300 ft.

REFERENCE NUMBERS:

Map
S-204

Kx
T49

Tysdal
85

MAS
NA

BLM
AA036305-
AA036308

MS
NA

HISTORY & PRODUCTION:

1911 - 45-ft crosscut and stripping reported (108).

1979 - Evidence of assessment filed by F. S. Pettyjohn (194).

1982 - Relocated by David Moore (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

The crosscut portal is currently inaccessible. Evidence of stripping can be seen at the top of the gorge above the portal. A collapsed building is present at the portal site.

GEOLOGIC SETTING:

Mineralization exposed by stripping is reported to consist of stringers and lenses of quartz up to 14-in. wide in a 33-in. wide shear zone in slate. The stringers are reported to be short and discontinuous and the crosscut failed to intersect significant mineralization. This is one of several occurrences reported on Lost Creek, none of which have been successful producers.

BUREAU WORK:

The site of the Homestake Ledge was investigated in 1980 and again in 1982. Significant mineralization could not be found. The portal was collapsed. Results from 3 samples (7167-69) are listed on table C-38. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191, 194

TABLE C-38. - ANALYTICAL RESULTS - Homestake Ledge

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7167	Q.V.	Grab	NA	0.07	0.1	10	26	58	1300	ND	ND	ND	ND	ND	ND	Dump Sample.
7168	Alluvium	Pan Conc	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Trace of gold recovered.
7169		Q.V.	Grab	NA	2.44	0.5	4	19	39	9400	ND	ND	ND	ND	ND	Quartz boulder sampled.

279.

NAME (other names): Brewer Alaska Prospect COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Seward A-7 SW 1/4 Sec 26 T 2N R 2W

Meridian: Seward

Geographic: This property is located on Lost Creek at an elevation between 1,350 and 1,450 ft. The workings occur on the east side of the creek 10 ft above creek level. A collapsed cabin is present at the top of the cliff above the workings.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-205	149,393	85	NA	AA036317- AA036320	NA

HISTORY & PRODUCTION:

1911 - Discovered by J. W. Stevenson (86).

1912 - Development totaling 420 ft of adit and 300 ft of pits and trenches reported. 2-stamp mill installed. Several buildings erected (86).

1970 - Lenard Claim staked by Max Fackler (6).

1980 - Evidence of assessment filed by F. S. Pettyjohn (194).

1982 - Relocated by David Moore (194).

No recorded production. Minor production likely.

RESOURCES: 1,100 tons - 0.3 oz gold/ton, 0.3 oz silver/ton.

OPERATING DATA:

The main adit is currently accessible and consists of a 60-ft crosscut, 110 ft of drift and some stoping at an elevation of 1,350 ft. Two short adits with shallow winzes occur about 200 and 750 ft south of the main adit. All three portals are located on the east side of Lost Creek.

GEOLOGIC SETTING:

Mineralization consists of a 12- to 20-in. wide quartz vein intermittently traceable for at least 300 ft. The vein is generally parallel to a N-S striking blue-black slate host rock dipping steeply to the east although local slumping may cause a much lower dip. Minerals include arsenopyrite, galena, sphalerite and gold. Very fine gold particles were panned from quartz remaining in an ore chute. The vein has well-developed ribbon structure, is vuggy and contains calcite.

BUREAU WORK:

Three adits totaling approximately 220 ft of workings were located, reopened and sampled by a U.S. Bureau of Mines crew in 1982. Results from eight samples (7170, 7171, 7176-7181), listed in table C-39, indicate the vein is of relatively low grade. Sample locations are shown on figure C-11. Moderate mineral development potential for a small mine.

REFERENCES:

6, 25, 86, 108, 184, 191, 194

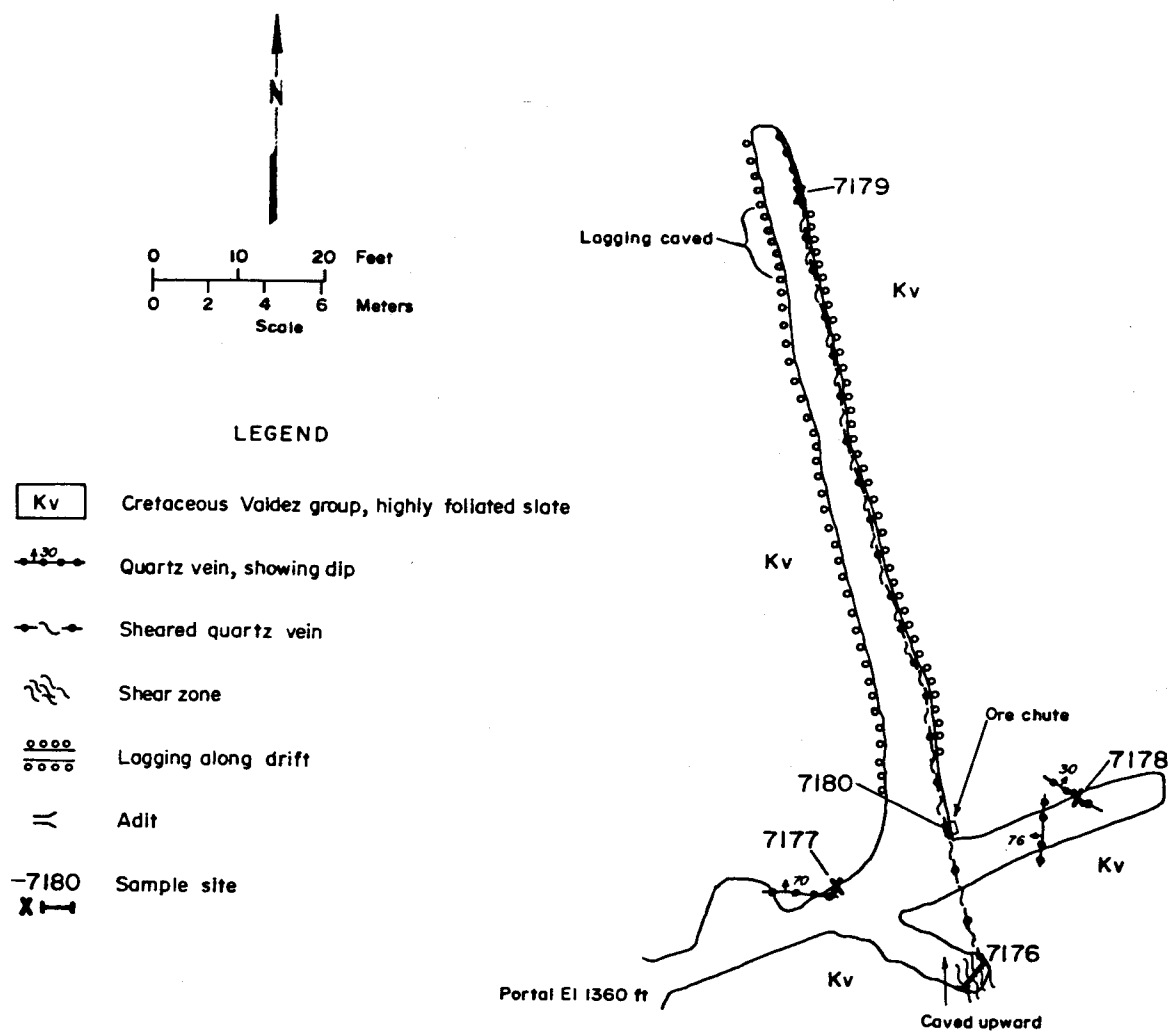


FIGURE C-11. Sample location map for the Brewer Alaska Prospect (S-205).

TABLE C-39. - ANALYTICAL RESULTS - Brewer-Alaska Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
7170	Q.V.	Chip	12 in.	28.5	0.4	42	110	180	4100	ND	ND	ND	ND	ND	ND	24 ft adit face.	
7171	Q.V.	Chip	10 in.	21.5	2.0	10	23	72	4700	ND	ND	ND	ND	ND	ND	24 ft adit surface.	
7176	Fault Gouge	Chip	30 in.	0.61	0.5	53	14	102	2900	ND	ND	ND	ND	ND	ND	Main adit. Main vein.	
7177	Q.V.	Grab	NA	<.03	<.1	5	9	46	4200	ND	ND	ND	ND	ND	ND	Main adit.	
7178	Q.V.	Grab	NA	0.06	0.8	34	25	89	43	ND	ND	ND	ND	ND	ND	Main adit.	
7179	Q.V.	Chip	5 in.	0.056*	0.3*	10	15	53	4400	ND	3	ND	4	ND	ND	Main adit. Main vein.	
7180	Q.V.	Grab	NA	0.316*	0.6*	31	41	91	2700	ND	3	ND	3	ND	ND	Main adit. Ore shoot.	
7181	Q.V.	Chip	36 in.	1.33	0.4	28	23	114	4700	ND	ND	ND	ND	ND	ND	26 ft adit face. Located 75 ft south of main adit.	

* ounces per ton

NAME (other names): Redman Creek Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward A-8

NE 1/4 Sec 31 T 2N R 2W

Meridian: Seward

Geographic: The veins described below occur on the north side of Redman Creek 1 mi west of the Resurrection River at an elevation of 2,900 ft.

REFERENCE NUMBERS:

Map
S-206

Kx
T04

Tysdal
NA

MAS
T04

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1900 - Original date of location (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

Mineralization examined by the Bureau consisted of three parallel quartz veins totaling 6-ft wide in a 40-ft wide hematite- limonite-stained zone striking N-S and dipping 50°W. Other similar zones occurred nearby. The host rock consists of slate and metasandstone striking north and dipping 50°W at the sample site. Fresh sulfide could not be found.

BUREAU WORK:

The original prospect was not examined. The nearby area was surveyed from the air and one of several stained zones sampled in 1981. Results from 2 samples (5271, 5272) are listed on table C-40. Anomalous gold values were recovered in a placer sample collected from Redman Creek in 1980. This area is within the Kenai Fiords National park which is not open to mineral entry. Low mineral development potential.

REFERENCES:

6, 108, 191-192

TABLE C-40. - ANALYTICAL RESULTS - Redman Creek Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5271	Q.V.	Channel	6 ft	0.23	1.5	48	15	65	ND	ND	ND	ND	ND	ND	ND	ND
5272	Metased	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Not assayed.

NAME (other names): Placer Creek Occurrence COMMODITIES: Au, Ag, Cu,
Pb, Zn

LOCATION: Quadrangle: Seward A-8, B-8 SE 1/4 Sec 23, 24 T 2N R 3W
Meridian: Seward

Geographic: Several mineralized zones occur near the head of Placer Creek. The one sampled by the Bureau occurs on the south side of the creek at an elevation of 1,500 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-207	T04	88	T04	NA	NA

HISTORY & PRODUCTION:

1900 - Approximate date of location.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

The mineralization consists of quartz veins, locally containing massive sulfide pods, in interbedded metasiltstones and calcareous metasandstones. Sulfides include galena, sphalerite, and chalcopyrite. The mineralized exposures located are very small.

BUREAU WORK:

A brief examination of this locality was made in 1980. The occurrence is within the Kenai National Moose Range which is closed to mineral entry. The high grade sample collected (5273, see table C-41) and the mineralized appearance of the region suggest the need for additional study. Moderate mineral development potential.

REFERENCES:

6, 108, 184, 191-192

TABLE C-41. - ANALYTICAL RESULTS - Placer Creek Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn		
5273	Q.V. M.S.	Grab	NA	19.5	389	12500	17500	26000	ND	ND	2	ND	ND	ND	ND	High grade massive sulfide pod.

NAME (other names): Grayson Lode Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward A-7

SE 1/4 Sec 22 T 2N R 1W

Meridian: Seward

Geographic: This prospect is located at an elevation of 1,900 ft on Lost Creek 1/8 mi east of the Lost Lake Trail.

REFERENCE NUMBERS:

Map
S-208

Kx
T49

Tysdal
NA

MAS
NA

BLM
AA036313-
AA036316

MS
NA

HISTORY & PRODUCTION:

1911-12 - Originally discovered (6).

1980 - Assessment filed by F. S. Pettyjohn. Claims do not cover the site described below (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

A small prospect pit and trench with small piles of quartz occur at the site.

GEOLOGIC SETTING:

The mineralization consists of a 12-in. wide vuggy quartz vein containing large disseminated crystals of arsenopyrite. The vein occurs along a north-south shear zone in slate and can be traced intermittently for 150 ft along strike.

BUREAU WORK:

A small prospect pit and trench were located and sampled by the Bureau in 1982. Data obtained from sample 7186 are listed on table C-42. The mineralization appears too spotty and too low grade to be of economic interest. Low mineral development potential.

REFERENCES:

6, 108, 191, 194

TABLE C-42. - ANALYTICAL RESULTS - Grayson Lode Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7186	Q.V.	Grab	NA	<0.03	1.9	6	15	21	1850	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Mizpah Ledge Prospect COMMODITIES: Au, Ag, As, Pb, Zn
(Kennedy, Pullen, Davis)

LOCATION: Quadrangle: Seward B-7 NE 1/4 Sec 15 T 2N R 1W
Meridian: Seward
Geographic: The Mizpah prospect is located on a small point of land on the east side of Lost Lake. The portal is located 35 ft from the shore of Lost Lake at an elevation of 1,920 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-209	T47	84	97, 108	NA	NA

HISTORY & PRODUCTION:

1911 - Located by Kennedy, Pullen, and Davis (85).

No reported production.

RESOURCES: 10 tons, 1 oz gold/ton and 0.5 oz silver/ton.

OPERATING DATA:

The workings consist of a 5x30-ft cut with a 28-ft adit located at its north end.

GEOLOGIC SETTING:

Mineralization consists of coarsely crystalline quartz stringers and pods up to 6-in. thick along a 2- to 4-ft wide shear zone in interbedded metasilstone and sandstone. The shear zone strikes N10°E and dips 70°E nearly parallel to the foliation of the host rock. Abundant sulfides are present including considerable arsenopyrite with lesser chalcopyrite, galena, sphalerite, and pyrite. Gold is reported to be found free in the quartz and in sulfides (85). Mineralization pinches out completely in the adit.

BUREAU WORK:

This prospect was briefly examined and mapped (fig. C-12) in 1982 at which time 3 samples were collected (7122, 7173 A & B). Data are listed in table C-43. The mineralized zone appears to be too limited in size to be of commercial interest unless it expands at depth. Moderate mineral development potential for a small mine.

REFERENCES:

6, 85, 108, 184, 191-192

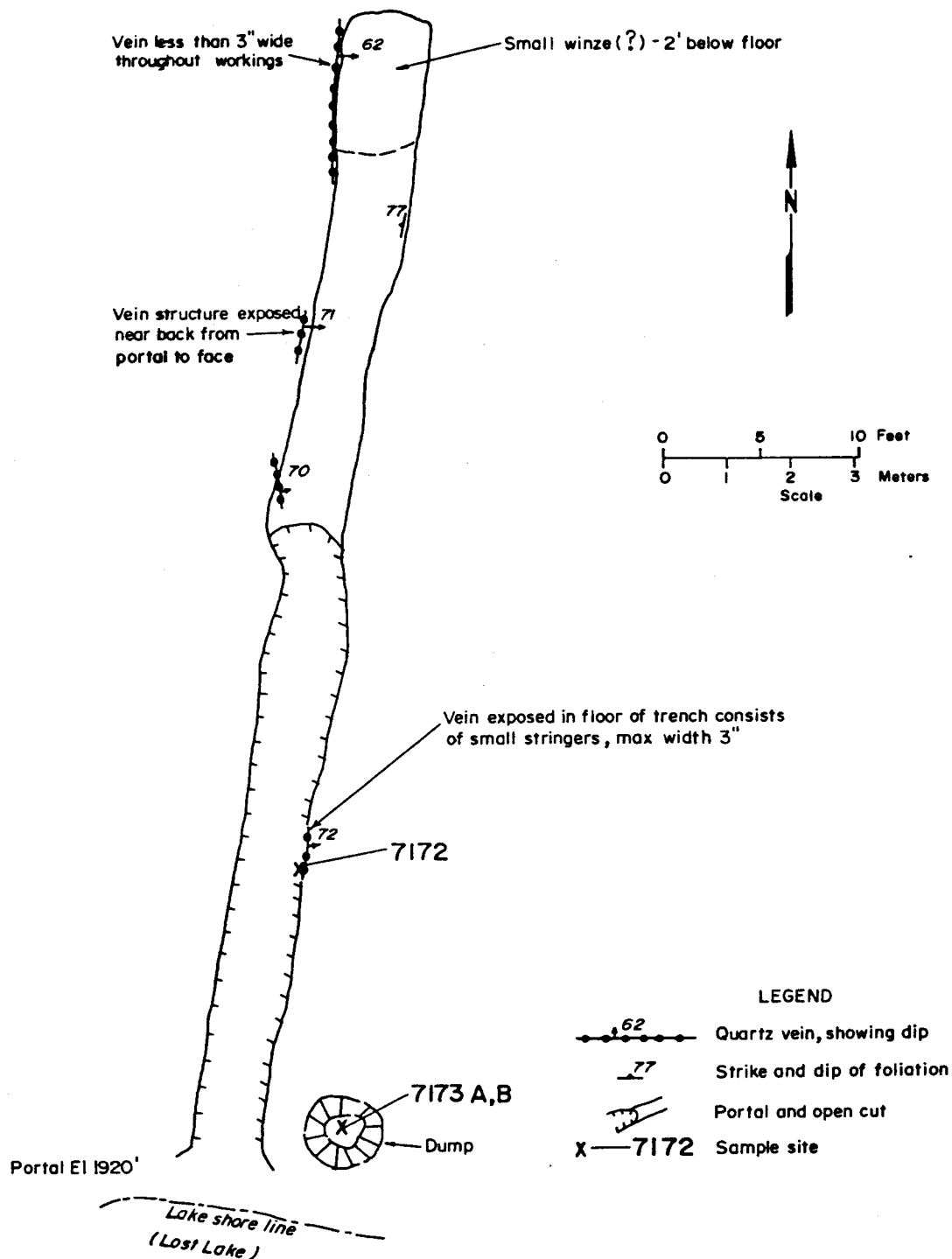


FIGURE C-12. Sample location map for the Mizpah Ledge Prospect (S-209).

TABLE C-43. - ANALYTICAL RESULTS - Mizpah Ledge Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
7172	Q.V.	Chip	4 in.	10.3	0.7	74	250	405	3500	ND	ND	ND	ND	ND	ND	ND	Vein sampled in trench.
7173A	Q.V.	Grab	NA	3.478*	2.8	110	4500	4200	6500	ND	4	ND	19	ND	ND	ND	High grade from dump.
7173B	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	High grade from dump.

* ounces per ton

NAME (other names): Hale, Peel, Lyngholm
Occurrence

COMMODITIES: Au?

LOCATION: Quadrangle: Seward B-7 1/4 Sec 1 T 2N R 1W
 Meridian: Seward
 Geographic: This occurrence is reported to be in the
 vicinity of Meridian Lake.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-210	T53	83	98	NA	NA

HISTORY & PRODUCTION:

1915 - Originally located by Hale, Peel, and Lyngholm (6).

1976 - Relocated by F. S. Pettyjohn (6).

No reported production.

RESOURCES: ND

OPERATING DATA: ND

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192

NAME (other names): Porcupine Quartz No. 1 Prospect COMMODITIES: Au, Ag
(Schoonover)

LOCATION: Quadrangle: Seward B-7 NW 1/4 Sec 10 T 2N R 1W
Meridian: Seward
Geographic: Located near the head of Porcupine Creek
at an elevation of approximately 2,000 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-211	T86	82	T00	NA	NA

HISTORY & PRODUCTION:

1911 - Adit reported to be present (85).

1958 - Relocated by George Ross and John Dryer (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

An adit has been reported but was not located by the Bureau.

GEOLOGIC SETTING:

Mineralization consists mostly of 1- to 15-in. wide quartz-calcite stringers and veins in nearly vertical interbedded slate and metasandstone striking N17°W. One vein is reported to be 9-ft wide and traceable for 125 ft, however, it could not be located. The veins contain chalcopyrite, galena, sphalerite, pyrite, and gold.

BUREAU WORK:

A 6-in. wide quartz vein generally striking N70°W and dipping 80°NE was located in the vicinity of this prospect in 1980. The vein pinches and swells along strike. The host rock is slate striking N-S and dipping steeply east.

Data for 3 samples (4949-4951) collected in the vicinity of this prospect are listed on table C-44. Low mineral development potential.

REFERENCES:

6, 85, 184, 191-192

TABLE C-44. - ANALYTICAL RESULTS - Porcupine Quartz No. 1 Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4949	Q.V.	Grab	NA	0.25	2.1	41	89	68	<10	ND	ND	ND	ND	ND	ND	ND
4950	Metased	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4951	Alluvial	Pan Conc	NA	0.11	3.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No visible gold in 2 pan concentrate.

NAME (other names): Porcupine Creek

COMMODITIES: Au, Ag?

Occurrence

LOCATION: Quadrangle: Seward B-7

SE 1/4 Sec 33 T 3N R 1W

Meridian: Seward

Geographic: This occurrence is located 1 mi west of Porcupine Creek and 3/4 mi southeast of the peak labeled 3722 at an elevation of 3,000 ft.

REFERENCE NUMBERS:

Map
S-212

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of several quartz veins containing minor quantities of sulfides. One vein examined in a small gulch is 1- to 3-ft wide and contains calcite and minor arsenopyrite. The host rock consists of an iron-stained slate along the footwall with foliation striking N10°E and dipping 85°E and a metasandstone on the hangingwall. Several barren veins were located in metasandstone north of the above described vein. Several 1- to 3-in. thick quartz veins striking N75°W and dipping 85°N were found 200 to 300 ft south and 200 ft above the previously described vein in a small gully. These veins contain considerable arsenopyrite and minor galena. The host rock is a metasandstone.

BUREAU WORK:

This occurrence was briefly examined and sampled in 1982. Table C-45 lists data from three samples collected (7187-7189). The data does not support field observations, suggesting that the samples may have been mishandled. Additional work is recommended in the area due to the presence of numerous quartz veins and staining and lack of previous work. Low mineral development potential.

REFERENCES:

This report.

TABLE C-45. - ANALYTICAL RESULTS - Porcupine Creek Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7187	Q.V.	Chip	24 in.	<0.03	0.3	6	6	20	<10	ND	ND	ND	ND	ND	ND	ND
7188	Q.V.	Chip	6 in.	0.03	0.4	24	5	43	<10	ND	ND	ND	ND	ND	ND	ND
7189	Q.V.	Chip	3 in.	<.005*	0.2*	18	9	9	<10	ND	ND	ND	ND	ND	ND	ND

* ounces per ton

NAME (other names): Overland Occurrence
(also see Primrose Mine)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7

SW 1/4 Sec 35 T 3N R 1W

Meridian: Seward

Geographic: The Overland Claim group extends along Porcupine Creek south of the Primrose Mine between elevations of 1,000 and 1,100 ft.

REFERENCE NUMBERS:

Map Kx Tysdal
S-213 486,490 NA

MAS
NA

BLM
AA024454-
AA024456

MS
NA

HISTORY & PRODUCTION:

1975 - Originally located by Richard Lynch (6).

1981 - Relocated as part of the Primrose Mine claims by David J. Moore (194).

No production.

RESOURCES: ND

OPERATING DATA:

Soil testing is reported to have occurred in 1977-78 (Richard Lynch, personal communication).

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Primrose Mine

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7

NW 1/4 Sec 35 T 3N R 1W

Meridian: Seward

Geographic: The Primrose Mine is located on Porcupine Creek at an elevation of 1,000 ft, 2 1/2 mi by trail from the Primrose Creek campground.

REFERENCE NUMBERS:

Map
S-214

Kx
T0

Tysdal
81

MAS
T01

BLM
AA045096-
AA045110

MS
NA

HISTORY & PRODUCTION:

1911 - Originally discovered and located by John Rice (6).
Some development work including surface trenching and construction of a 22-ft adit (108).

1912 - Primrose Mining Co. took over the claims.
Active development work including the construction of 2 adits and a 75 ft inclined shaft (108).

1914-18 - Chas. Hubbard obtained ownership of claims and did minor development work (32).

1918-26 - Minor development (32).

1931 - Optimistic report written by Jay Burnette (32).

1932 - Optimistic report written by H. E. Byram Consulting Mining Engineer (33).

1972 - Relocated by F. S. Pettyjohn (6).

1981 - Relocated by David J. Moore (194).

Reported production 4,000 + ounces of gold by 1931 (32).

Recorded production: 659 oz gold, 138 oz Ag (193).

RESOURCES: 1,300 tons, 1.42 oz gold/ton, 0.6 oz silver/ton (based upon previous data).

OPERATING DATA:

One cabin is still in use. At least two others are present but both are collapsed. Portions of the mill remain at creek level below the cabin. Three levels of workings totaling 450 ft are reported (33). None are currently accessible. A summary of assay values and smelter runs was made by Jay Burnette as part of his report in 1931 (32).

His comments are as follows:

"The average value per ton of the ore from this property on the Primrose claim approximates \$100.00 per ton net. A shipment made to the Tacoma smelter and including a pro-rated amount of ore from all surface ore appearing as outcroppings, ran 2.45 oz gold and 1.29 oz silver per ton, or \$50.64 per ton in gold. These shipments were made in order to derive from fair tonnage sampling, the average per ton of all ore taken from all ore disclosures.

Other shipments of ore to the smelter of from twelve to fifteen tons and which were taken from the general mine run, showed as follows:

5.20 ounces gold - (\$104.00)	NA2.39 oz silver (\$1.40 ton)
5.38 " " 107.60	2.22 " 1.33 "
5.67 " " 113.40	2.70 " 1.61 "
5.96 " " 119.00	2.67 " 1.60 "

A winze has been sunk on Veins Nos 6 and 7 to a depth of 50 ft from creek level. The first 10 ft of ore out of this shaft was shipped to the smelter and for the nine tons of ore extracted and shipped a gross value of \$105.29 per ton was realized, or approximately \$100.00 per foot in depth. Some of this ore at the surface and at 10 ft in depth assayed \$300.00 per ton. Ore assays at the bottom of this shaft (50 ft) ran \$436.11 and \$654.36 per ton.

A mill test was made at the property in August 1930, running through some of the ore (five tons) taken from the above mentioned shaft, which was taken out in the ordinary course of development or just a general run of mine ore. This ore plated about \$38.00 per ton in free gold and ran nearly \$800.00 per ton in concentrate. The general average per ton was a little over \$100.00 and as only part of the saving devices were installed, much of the values were lost."

GEOLOGIC SETTING:

Martin, et.al. (108), describes the geologic setting and mineralization at the Primrose Mine as follows:

"The interbedded slate and graywacke in the creek bottom strikes N17°W and has a vertical dip. On the canyon walls, however, surficial creep of the beds has caused an inclination of the upper part of the lode and country rock toward the creek and has resulted in a false dip of the beds away from the creek and a strike approximately parallel to the course of the canyon. The quartz stringers at the surface dip 35°-40°E, and at a depth of 40 ft in the incline shaft therein is said to stand nearly vertical and to strike about N30°E. At this depth the stringers are reported to converge into a nearly solid vein 7 ft thick with well-defined walls.

The gangue in the stringers is quartz, coarsely crystalline in some of the larger stringers and showing interlocking crystals in places at the center of the veins. Some calcite occurs with the quartz as a gangue mineral. Arsenopyrite is the most abundant sulfide and occurs in association with the other sulfides, sphalerite, chalcopyrite, galena, and pyrite. The gold occurs free in the quartz and also in intimate association with the sulfides."

At the portal of the upper level visited by the Bureau in 1982, the host rocks consist of highly fractured incompetent slate and metasiltstone striking N60°E and dipping 55°SE. This attitude is believed to reflect slumping. The quartz vein exposed at the portal is 8- to 10-in. wide within a 3-ft wide shear zone striking N60°E and dipping 55°SE. The quartz contains some carbonate and has a well developed ribbon structure caused by dark carbonaceous appearing bands along which fine sulfides and gold have formed. Sulfides are abundant and include arsenopyrite, pyrite, chalcopyrite, galena, sphalerite, and pyrrhotite. Malachite and covellite are also present. The vein is highly oxidized and breaks freely away from its walls. Gouge is well-developed along both walls. Small vugs containing clear, euhedral quartz crystals are present.

BUREAU WORK:

The Bureau briefly examined and sampled the Primrose vein in 1982 where it is exposed above the portal of the upper level. An attempt was made to reopen the upper level but was abandoned due to caving. Data from the 3 samples (7174-7175) collected are listed in table C-46. Additional work is highly recommended on this property. The current workings should be reopened and sampled in detail if possible. High potential for a small mine.

REFERENCES:

6, 25, 32-33, 85, 87-90, 108, 164-165, 171, 184, 191-194

TABLE C-46. - ANALYTICAL RESULTS - Primrose Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions		
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W			
7174	Q.V.	Cont Chip	10 in.	1.572*	0.6*	150	970	365	9200	ND	4	ND	7	ND	ND	Upper level portal		
7175A	Q.V.	Channel	6 in.	1.166*	0.6*	260	620	213	3500	ND	4	ND	4	ND	ND	"	"	"
7175B	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	"	"	"

* ounces per ton

NAME (other names): Porcupine, Graystone, COMMODITIES: Au
Homestake Ledge Prospects

LOCATION: Quadrangle: Seward B-7 1/4 Sec ²⁶ 23 & 24 T 3N R 1W
Meridian: Seward
Geographic: The Porcupine vein occurs 1 1/2 mi from the
mouth of Porcupine Creek at its junction with
Primrose Creek. The Graystone and Homestake
Ledges occur on Porcupine Creek 1/2 mi from
its mouth.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-215	4T3	80	T02	AA34T94	NA

HISTORY & PRODUCTION:

1911 - Graystone Ledge and Homestake Ledge located by Edward Frederick
(108).

1973 - Relocated by Roger Dixon (6).

1980 - Evidence of assessment filed by Roger Dixon (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

An open cut is reported to have been made on the Homestake Ledge (108).

GEOLOGIC SETTING:

Mineralization at the Porcupine prospect consists of a 6- to 9-in. wide quartz-calcite vein striking N23°E and dipping 80°E. Minor gouge occurs along the walls of the vein. The host rock is slate and metasandstone. Metallic minerals include arsenopyrite, galena, sphalerite, pyrite, pyrrhotite, and gold (108).

The Graystone Ledge deposit is reported to consist of a vertically dipping felsic dike striking N33°E which contains very little mineralization. The Homestake Ledge is located near the Graystone Ledge and contains a few scattered discontinuous quartz stringers containing arsenopyrite, pyrite, and pyrrhotite (108).

BUREAU WORK:

None. Reports suggest that the mineralization is too low grade and/or limited in extent to have significant value. However, high grade lode gold mineralization does occur at the nearby Primrose Mine (S-214). The area should be examined in some detail though the dense forest cover makes prospecting difficult. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192, 194

NAME (other names): Peak 5309 No. 1
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward B-7

NE 1/4 Sec 23 T 3N R 2W

Meridian: Seward

Geographic: This occurrence is located in a small gulch on the east-southeast side of Peak 5309 at an elevation of 3,000 to 3,500 ft.

REFERENCE NUMBERS:

Map
S-216

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the U.S. Bureau of Mines.

No production.

RESOURCES: ND

OPERATING DATA:

None.

GEOLOGIC SETTING:

Mineralization consists of several N20-60°E striking veins in N10-20°W striking steeply dipping interbedded slates and metasandstones. Veins vary from 2- to 48-in. thick, locally contain calcite and euhedral quartz crystals to 3/4-in. long in vugs, and are occasionally banded. Metallic minerals identified include minor amounts of pyrite, pyrrhotite, chalcopyrite, and galena. Galena was found only in float (7122). A second group of longitudinal quartz-calcite veins were also examined. These veins tend to be less vuggy and contain no euhedral quartz crystals. Pyrite and a possible sulfosalt were identified (7124). Considerable structural deformation has occurred in this area. Coarse placer gold was collected from Ship Creek east of this occurrence.

BUREAU WORK:

Several traverses were made on Peak 5309 during the summer of 1982. Potentially mineralized quartz veins were described and sampled. Results from 7 samples (7118-7124) collected during the traverse from the top to the base of Peak 5309 on the east-southeast flank are listed on table C-47. Low mineral development potential.

REFERENCES:

This report.

TABLE C-47. - ANALYTICAL RESULTS - Peak 5309 No. 1 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	Mn	
7118	Metased	Grab	NA	0.03	0.1	52	10	100	13	ND	6	ND	ND	ND	ND	ND
7119	Q.V.	Chip	48 in.	<0.03	0.3	34	20	42	<10	ND	ND	ND	ND	ND	ND	ND
7120	Metased	Grab	NA	0.15	0.2	63	12	87	<10	ND	ND	ND	ND	ND	600	ND
7121	Q.V.	Chip	12 in.	<0.03	<0.1	8	7	25	<10	ND	ND	ND	ND	ND	ND	ND
7122	Q.V.	Grab	NA	<0.03	0.7	7	215	14	<10	ND	ND	ND	ND	ND	ND	Galena-bearing float.
7123	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	" "
7124	Q.V.	Grab	NA	<0.03	<0.1	8	5	27	49	ND	ND	ND	ND	ND	ND	Chip of 3 longitudinal veins.

NAME (other names): Peak 5309 No. 2
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward B-7
Meridian: Seward

1/4 Sec 22 T 3N R 2W

Geographic: At least three large visible quartz veins occur on the west-southwest flank of Peak 5309 between elevations of 3,000 and 3,600 ft.

REFERENCE NUMBERS:

Map
S-217

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a 6-in. to 6-ft wide quartz vein averaging 2-ft wide over an exposed length of approximately 300 ft between 3,400 and 3,600 ft above sea level. The vein strikes N-N20°E and dips 60-70°E. Poorly developed ribbon structure occurs in some portions of the vein and the quartz is vuggy especially near the top of the exposure. Minor arsenopyrite, pyrite, and malachite were identified in the upper section of the vein. Lower portions of the vein appear barren and contain numerous angular blocks of country rock. The host rock consists of interbedded metasiltstone and slate. Well-developed striations and chatter marks occur on the hanging wall side of the vein indicating a reverse right lateral component of movement. The striations rake 15° to the north. A second set of 1- to 3-in. wide quartz veins striking N40°E and dipping 65°SE are likely filling tensional fractures developed during faulting along the main vein. All of the veins lack carbonate. Similar veins to those described above occur to the east but all appear relatively barren.

BUREAU WORK:

Several veins were examined and sampled during a traverse along and down the west-southwest flank of Peak 5309. Results from 4 samples (7182-7185) are listed on table C-48. Low mineral development potential.

REFERENCES:

This report.

TABLE C-48. - ANALYTICAL RESULTS - Peak 5309 No. 2 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
7182	Q.V.	Chip	8 in.	<0.03	0.2	140	55	40	<10	ND	ND	ND	ND	ND	ND	Mineralized portion of vein.	
7183	Q.V.	Chip	3 ft	<0.03	<0.1	12	11	41	<10	ND	ND	ND	ND	ND	ND	ND	
7184	Q.V.	Grab	NA	0.05	0.5	30	30	75	<10	ND	ND	ND	ND	ND	ND	ND	
7185	Q.V.	Grab	NA	<0.03	0.8	21	7	31	<10	ND	ND	ND	ND	ND	ND	ND	

NAME (other names): Peak 5309 No. 3
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward B-7 1/4 Sec 15 T 3N R 2W
Meridian: Seward
Geographic: This occurrence is located on the west-northwest flank of Peak 5309 above the lower ice field at an elevation of approximately 4,100 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-218	NA	NA	NA	NA	NA

HISTORY & PRODUCTION:

1982 - Examined and sampled by the U.S. Bureau of Mines.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of several parallel vuggy hematite-stained quartz-calcite veins containing small euhedral quartz crystals and numerous rock fragments. The veins generally parallel but locally crosscut well-bedded hematite-stained metasilstone striking N55°E and dipping 55°SE at the sample location. Several veins in this area have significant strike lengths in excess of 300 ft but are generally less than 1-ft thick. Fresh sulfides were not identified in the veins. The heaviest staining occurs in the adjacent, highly deformed, sulfide-bearing country rock.

BUREAU WORK:

A brief examination was made of 3 subparallel quartz veins from which a composite sample (7125) was collected. Results are listed in table C-49. Significant mineralization was not identified. Low mineral development potential.

REFERENCES:

This report.

TABLE C-49. - ANALYTICAL RESULTS - Peak 5309 No. 3 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
7125	Q.V.	Grab	NA	<0.03	0.1	27	11	44	<10	ND	ND	ND	ND	ND	ND	3 veins sampled.	

NAME (other names): Devil Club Ledge, and
Lakeside Prospects

COMMODITIES: Au

LOCATION: Quadrangle: Seward B-7 NE 1/4 Sec 30 T 3N R 1E
Meridian: Seward
Geographic: The Devil Club Ledge is reported to occur
270 ft above Kenai Lake between mile 17 and 18
on the railroad (184). The Lakeside Prospect
occurs nearby.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>S-219</u>	<u>T56</u>	<u>79</u>	<u>T06</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1900 - Approximate time of original location (6).

No production.

RESOURCES: ND

OPERATING DATA:

Several open cuts are reported to occur on the Devil Club Ledge (184).
Thirty feet of stripping are reported on the Lakeside Claims (184).

GEOLOGIC SETTING:

The Devil Club Ledge mineralization consists of 2 veins lying along joint planes in a slate host rock. One 15-in. wide vein is nearly vertical and is reported to have been traced 75 ft along its N80°W strike (184). The second vein parallels the first with a width of 4 to 8 in. Both contain arsenopyrite.

The Lakeside deposit reportedly consists of a 4- to 10-in. wide vein striking north and dipping 50°E (184). Minor arsenopyrite and pyrite occur in the vein.

BUREAU WORK:

Searched for but not located in 1980. A possible trail is visible from the highway near the Primrose trailhead at an elevation in excess of 500 ft. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192

COMMODITIES: Au

Geographic: The Brown Bear prospect is located near the head of Kenai Lake on the east side of the highway approximately 150 ft above the lake.

REFERENCE NUMBERS:

Map Kx Tysdal MAS BLM MS
S-220 T55 78 T05 NA NA

HISTORY & PRODUCTION:

1912 - Minor development work reported (184).

No reported production.

RESOURCES: ND

OPERATING DATA:

Several feet of adit were reported (184) to have been driven in 1912.

GEOLOGIC SETTING:

The mineralization consists of a 1 1/2- to 5-in. wide locally banded quartz calcite vein striking N12°E and dipping 45°E approximately parallel to the foliation of the black slate host rock. The metallic minerals include arsenopyrite, galena, sphalerite, and gold.

BUREAU WORK:

Searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192

COMMODITIES: Au, Ag, As

Meridian: Seward

Geographic: This property is located on the east side of Kenai Lake 1 mi north of Victor Creek at an elevation of approximately 1,700 ft.

REFERENCE NUMBERS:

Map S-221	Kx T58	Tysdal TT	MAS T09	BLM AA046908- AA046922	MS NA
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HISTORY & PRODUCTION:

1907 - Originally discovered and located by C. E. and J. W. Stevenson (184).

1911 - Underground development at main and upper level (184).

1912 - Extension of main adit to 200 ft and additional crosscutting and drifting at the upper level (184).

1927 - Relocated (6).

1959 - Relocated (6).

1982 - Relocation by Forty Mile Association (194).

Recorded production 65 oz gold (193).

RESOURCES: 7,400 tons, 0.023 oz gold/ton, 0.225 oz silver/ton.

OPERATING DATA:

Workings consist of an accessible 200-ft adit at 1,680 ft and an inaccessible 40-ft crosscut with 25 ft of drift at 5,000 ft.

GEOLOGIC SETTING:

Mineralization consists of a 1 1/2- to 6-ft wide coarsely crystalline quartz vein along a predominantly N60°E striking nearly vertical to 80° north dipping shear zone in slate and metasandstone. However, at the portal the vein strikes N75°W for about 70 ft before it is deflected to its more normal NE strike (figure C-13). Foliation in the slate strikes N30°-40°E and dips 80°NW. The vein is cut off twice by well defined N-S vertical fault zones exposed in the main adit (figure C-13). Metallic minerals include arsenopyrite, chalcopyrite, galena, pyrite, sphalerite, and gold. Gouge occurs along the walls of the vein. The vein is 2 1/2-ft wide at the face. Arsenopyrite occurs in much of the wall rock. Stevenson's Gulch, a small south flowing tributary to Victor Creek, which drains the upper workings, pans fine gold.

BUREAU WORK:

The Bureau mapped and sampled the main level (fig. C-13) and examined the upper workings in 1980. Results from 10 samples (5279-5286, 5300, 5301) are listed in table C-50. The vein appears to be low in grade but has good continuity along strike. Moderate mineral development potential for a small mine.

REFERENCES:

6, 108, 184, 191-194

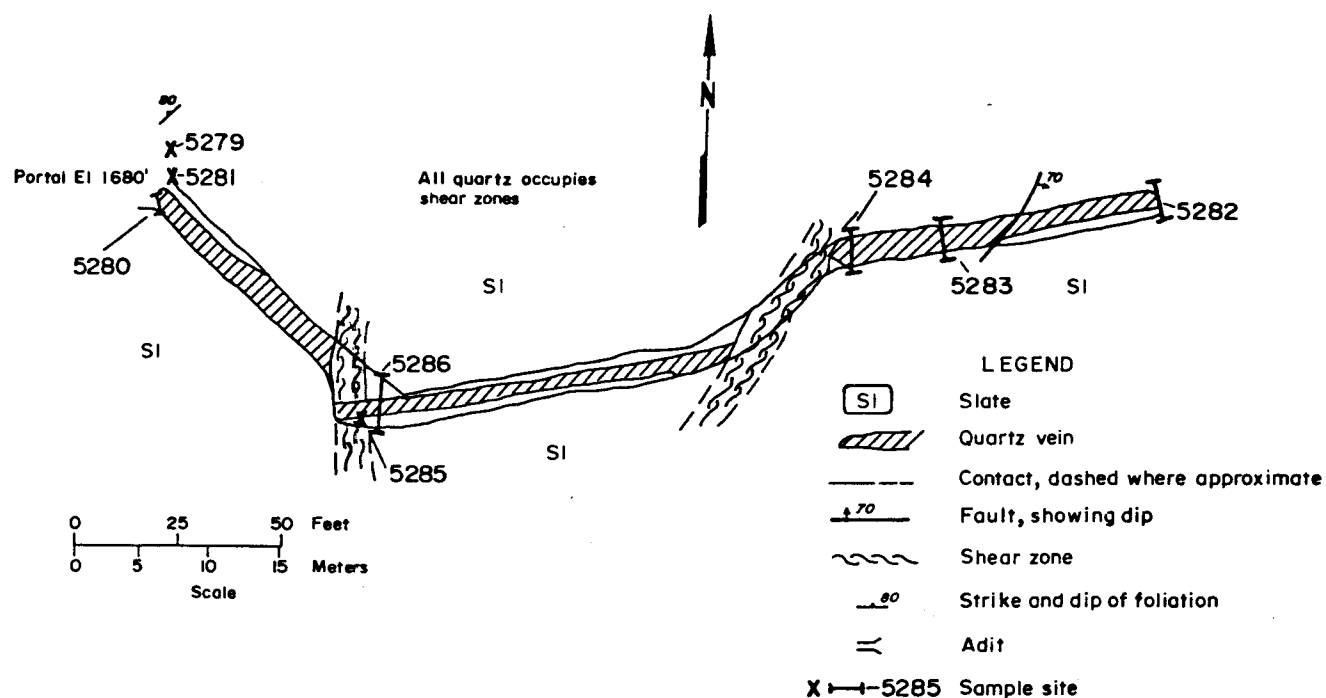


FIGURE C-13. Sample location map for the Seward Bonanza Prospect (S-221).

TABLE 50. - ANALYTICAL RESULTS - Seward Bonanza Prospect (Kenai Lode)

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5279	Q.V.	Grab	NA	0.25	1.2	79	145	165	245	ND	<2	ND	ND	ND	ND	Main adit.
5280	Q.V.	Chip	24 in.	3.1	3.2	81	153	140	190	ND	2	ND	ND	ND	ND	" "
5281	F.W. Metased	Chip	14 in.	0.2	3.1	ND	ND	ND	210	ND	ND	ND	ND	ND	ND	" "
5282	Q.V.	Chip	30 in.	0.2	1.4	58	65	93	2950	ND	ND	ND	ND	ND	ND	Main adit face.
5283	Q.V.	Chip	64 in.	0.28	25	47	162	72	3500	ND	ND	ND	ND	ND	ND	Main adit.
5284	Q.V.	Chip	50 in.	0.38	0.62	40	14	58	1300	ND	ND	ND	ND	ND	ND	" "
5285	Q.V.	Chip	18 in.	4.9	10	52	920	530	10000	ND	<2	ND	ND	ND	ND	" "
5286	Q.V.F.W. Metased	Chip	72 in.	0.05	1.8	105	29	670	1650	ND	<2	ND	ND	ND	ND	Main adit.
5300	Q.V.	Grab	NA	0.4	0.95	ND	ND	ND	25	ND	ND	ND	ND	ND	ND	Upper workings.
5301	Alluvial	PanCon	NA				ND	ND	ND	ND	ND	ND	ND	ND	ND	Stevenson's gulch. 8-10 colors/pan recovered.

NAME (other names): Andy Simons Mountain

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7
Meridian: Seward

SW 1/4 Sec 33 T 4N R 1E

Geographic: This occurrence is located near the northern end of Andy Simons Mountain at an elevation of 5,100 ft.

REFERENCE NUMBERS:

Map
S-222

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

No production.

RESOURCES: 50 tons, 0.076 oz gold/ton, 0.2 oz silver/ton.

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

The mineralization consists of a 1- to 1 1/2-ft thick vertical quartz vein striking N65°E in north striking metasilstone and slate. Metallic minerals include chalcopryite, galena, pyrite, and sphalerite. Malachite staining occurs occasionally. Similar veins occur nearby but appear to be unmineralized. A northwest striking set of barren appearing quartz veins also exist in the area.

BUREAU WORK:

The Bureau located and sampled the vein in 1980. Additional work may be warranted due to the presence of numerous quartz veins which appear to have some continuity along strike. Data from samples 5298 and 5299 are listed in table C-51. Low mineral development potential.

REFERENCES:

This report.

TABLE C-51. - ANALYTICAL RESULTS - Andy Simons Mountain Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5298	Q.V.	Grab	NA	1.95	8.6	92	625	660	13	ND	ND	ND	ND	ND	ND	ND
5299	Q.V.	Grab	NA	2.6	5.5	295	424	550	10	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Dunrovin Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-6

SW 1/4 Sec 23 T 4N R 1E

Meridian: Seward

Geographic: The Dunrovin prospect is located on Falls Creek at an elevation of 2,400-2,600 ft.

REFERENCE NUMBERS:

Map
S-223

Kx
342

Tysdal
73

MAS
96

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1965 - Originally located (6).

No reported production.

RESOURCES:

OPERATING DATA:

No evidence of workings were identified. Two camp sites were located in the area.

GEOLOGIC SETTING:

Mineralization could not be located near the campsites. However, at an elevation of 2,600 ft in a canyon section of Falls Creek a 6-in. to 4-ft wide quartz vein striking N10°W and dipping 70°W was located. The vein could be traced for 35 ft along strike and 30 ft vertically up the canyon wall. The vein appears to have been dragged along a fault at its southern exposure where it thickens appreciably prior to being cut off, and to pinch out along strike to the north. Visible sulfides include pyrite and pyrrhotite. No gold could be recovered by panning the crushed quartz.

BUREAU WORK:

The main camp and the above described vein were located in 1980 and 1982 respectively. Results of a sample collected from the vein (7158) are listed on table C-52. Low mineral development potential.

REFERENCES:

6, 184, 191-192

TABLE C-52. - ANALYTICAL RESULTS - Dunrovin Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7158	Q.V.	Chip	6 in.	0.07	0.5	28	3	15	<10	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Falls Creek Mine
(California-Alaska)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7

NE 1/4 Sec 21 T 4N R 1E

Meridian: Seward

Geographic: This mine is located in the center of Falls Creek valley at an elevation of 2,100 ft, 1,200 ft below the workings of the Skeen-Lechner Mine (fig. C-14).

REFERENCE NUMBERS:

Map
S-224

Kx
60

Tysdal
72

MAS
113

BLM
AA036345-50
AA043719-23

MS
NA

HISTORY & PRODUCTION:

1905 - Claims located by F. P. Skeen and John Lechner.
Property bonded to E. O. Ingalls.
Property assigned to C. D. Lane.
Ninety feet of adit driven, 20-ft winze sunk 60 ft from portal.
Property reverted to original owners (108).

1908 - Property deeded to California-Alaska Mining Co.
Winze extended to 40 ft, 140 ft of drifts completed.
Development stopped due to heavy water flow (108).

1909-10 - Arrastre mill operated (5 oz recovered) (108).

1911 - 2-stamp mill erected, 90 tons of ore milled (108).

1912 - Workings dewatered and sampled.
Mill operated briefly on ore obtained from the Skeen Lechner property (83).

1956 - Preliminary Property Examination Report written by M. W. Jasper (83).

Total recorded production is 65 oz of gold and 13 oz of silver (193).
Additional production is likely; some may have been included with that from the Skeen-Lechner property as both were operated by the same mining company.

RESOURCES: ND

OPERATING DATA:

Workings, reported to total 860 ft (fig. C-15), are currently inaccessible (83). The mill was destroyed by an avalanche in 1981.

GEOLOGIC SETTING:

Mineralization is reported to consist of an 8-in. to 4-ft wide vein along a vertical 5-ft wide shear zone striking N50°E in slate and metasandstone striking N10°E and dipping 75°E (184). Metallic minerals include arsenopyrite, galena, pyrite, sphalerite, and gold. Free gold is associated with narrow bluish quartz stringers along with fine sulfides. A 12-ft wide altered dike occurs nearby.

BUREAU WORK:

The mill site was visited in 1980 and 1982. One vein exposure located across the creek from the mill site above what appears to be a caved portal was sampled (4823). This is not believed to be an exposure of the mined vein system described above as it strikes N55°W and dips moderately to steeply northeast. However the values obtained are encouraging. The workings should be reopened and sampled. Figure C-15 is a copy of an old mine map showing the Falls Creek mine workings compiled by M. W. Jasper (83) in 1956. Data are listed in table C-53. Undetermined mineral development potential.

REFERENCES:

6, 65, 83, 84, 108, 136, 184, 191-194

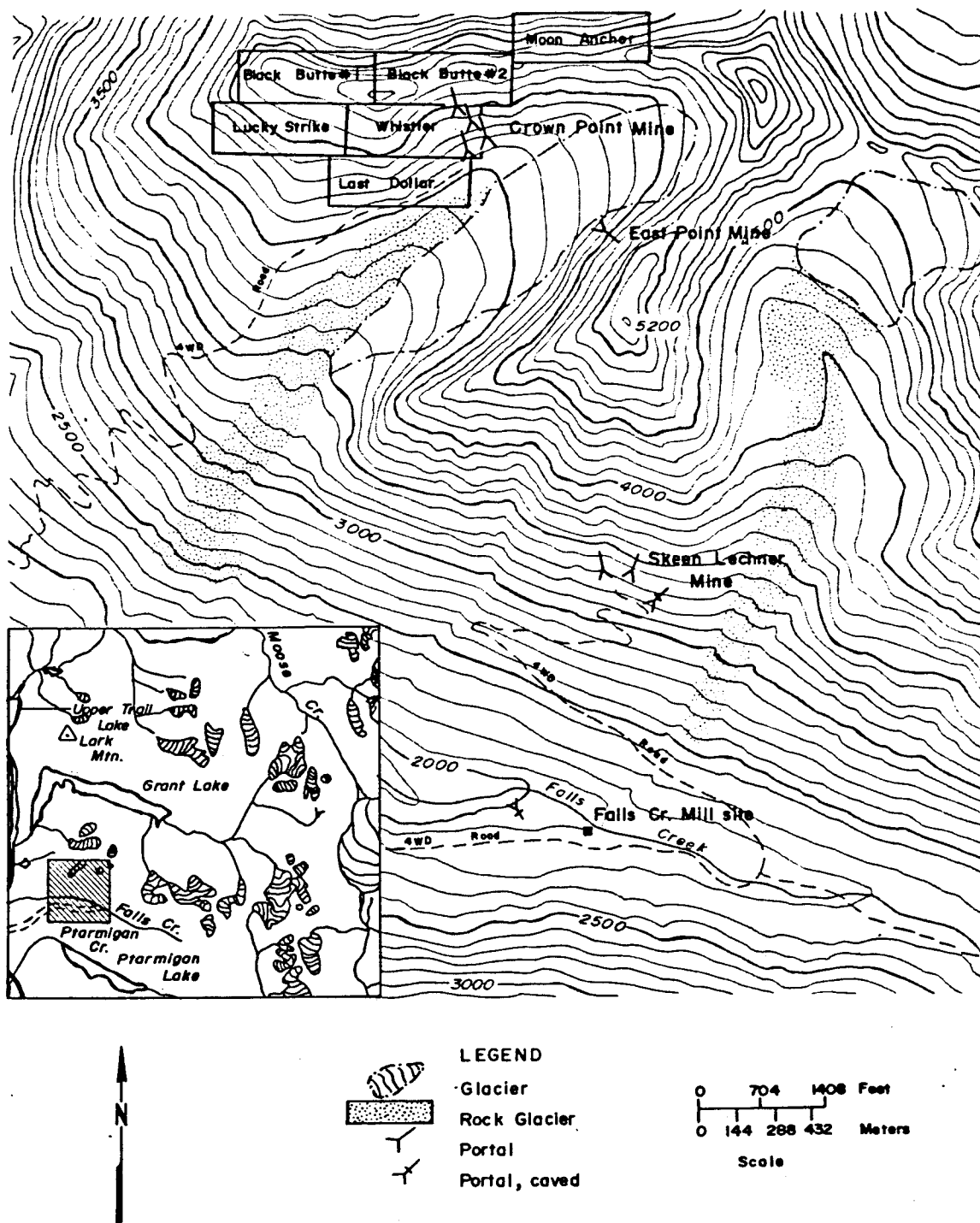


FIGURE C-14. Location map for the Falls Creek, Skeen Lechner, East Point, and Crown Point Mines (S-224, S-225, S-226, S-227).

321.

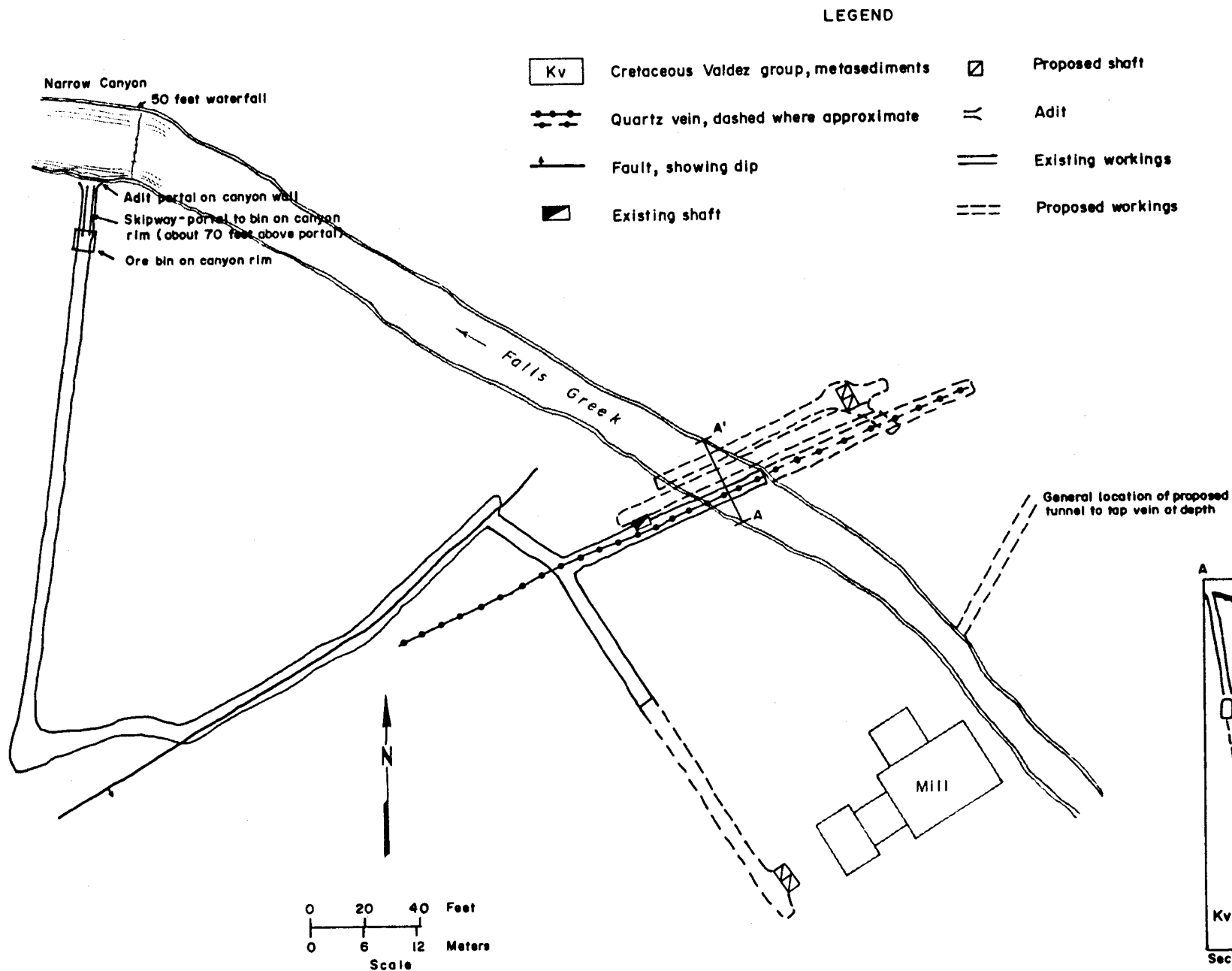


FIGURE C-15. Sketch map of the Falls Creek Mine (S-224 [after M. W. Jasper, 1956 (83)]).

TABLE 53. - ANALYTICAL RESULTS - Falls Creek Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4823	Q.V.	Chip	6 ft	3.25	2.4	50	46	50	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Skeen-Lechner Mine COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7 NE 1/4 Sec 16 T 4N R 1E
Meridian: Seward

Geographic: The Skeen-Lechner Mine is located approximately 3 mi east of the Seward Highway on the north side of Falls Creek at an elevation of 3,200 ft (fig. C-14). An unmaintained, presently overgrown, and partially eroded mine road, once used to transport supplies to the mine, could be rebuilt to provide access. However, the route extends through terrane having extreme avalanche danger and could not be safely maintained on a year round basis.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-225	14, 163	71	116	AA036345-50	NA
				AA043719-23	

HISTORY & PRODUCTION:

- 1907 - Originally located by F. P. Skeen and L. F. Lechner (83).
- 1910 - Development work of the 3,210 ft level begun by F. L. Ballaine and J. A. Nelson (83).
- 1911 - Property deeded to Skeen-Lechner Mining Co. Continued development of 3,210 ft level (108).
- 1912 - Development begun at the 3,140 ft level. Total development reported to be 1,000 ft by Johnson (108), approximately that shown on figure C-16 in the lower and middle levels.
- 1939 - Property acquired by Mel Horner and deeded to the Falls Creek Mining Co. which also owned the Falls Creek Mine (83).
- 1940-50 - Minor development of the 3,260 ft level by the Falls Creek Mining Co. (83).
- 1956 - Preliminary mineral examination report written by M. W. Jasper (83). This report is based upon company data and contains a map which is the basis for figure C-14.

Total recorded production: Gold 1,786 oz, silver 502 oz. Some of this may have come from the Falls Creek Mine (193).

RESOURCES:

10,000 tons, 0.82 oz gold/ton, 0.3 oz silver/ton.

Based upon the measurements given below, approximately 13,700 tons of identified resources have been developed by the workings as shown on

figure C-16. Allowing for the prior removal of 3,700 tons of quartz to account for previous production, a net resource of 10,000 tons should remain in the mine.

	<u>Lateral Extent</u>	<u>Dip Extension</u>	<u>Thickness</u>	<u>Volume</u>	<u>Tonnage</u>
Upper vein	200 ft	170 ft	2 ft	68,000 ft ³	5,500 tons
Lower vein	360 ft	140 ft	2 ft	100,800 ft ³	8,200 tons
				TOTAL	13,700 tons

Average grade of 1/3 to 1 oz of gold/ton may be present with the possible existence of high grade ore shoots which would help to increase this average.

OPERATING DATA:

Two veins have been developed by three levels of workings (figs. C-16 and C-17) at elevations of 3,140, 3,210, and 3,260 ft. The middle level is currently accessible and the others are caved at their portals though the upper level can be entered through a raise which intersects the surface.

According to company data (Jasper, 83) total workings at the end of 1950 were nearly 2,000 ft divided as follows:

<u>Vein</u>	<u>Level</u>	<u>Cross-cuts</u>	<u>Drifts</u>	<u>Raises</u>	<u>Winzes</u>	<u>Totals</u>
upper	3,260 ft	----	----	----	----	----
lower	3,260 ft	18 ft	204 ft	70 ft	5 ft	297 ft
upper	3,210 ft	122 ft	193 ft	125 ft	5 ft	445 ft
lower	3,210 ft	----	----	----	----	----
upper	3,140 ft	74 ft	38 ft	175 ft	----	287 ft
lower	3,140 ft	<u>300 ft</u>	<u>422 ft</u>	<u>170 ft</u>	<u>70 ft</u>	<u>962 ft</u>
	TOTALS	514 ft	857 ft	540 ft	80 ft	1,991 ft

Apparently, not all of this footage was placed on the company mine map (fig. C-16).

GEOLOGIC SETTING:

Martin, et. al. (108) accurately described the upper and lower veins as follows. A cross section (A-A, fig. C-16) showing the veins relationship to the 3,210 ft level is included for reference.

"The upper vein, occupying a fissure in the massive graywacke, strikes N15°W and dips 45°E. About midway of its present known length it is offset 40 ft on the tunnel level by a vertical fault fissure striking N56°E. The sheared zone along the fault plane is 12 to 23-in. wide and is filled with crushed country rock containing fragments of vein quartz.

Slickensides are visible on this included vein quartz and on the walls of the fault fissure. In the tunnel this vein is well defined, varies in width from 20 to 45-in. and shows 1 to 4-in. of gouge on both walls. The outcrop shows much less quartz, 28-in. being the maximum measurement made, and in places the fissure filling is a sheared arsenopyrite impregnated graywacke containing only a few narrow quartz stringers. The lower vein lies about 90 ft southwest of the upper vein and has a strike of N45°W and a dip of 65°NE. It measured 46-in. at the original discovery, near the mouth of the upper tunnel. In the lower tunnel, the width of the vein varied from 1 ft to 4 ft, averaging about 2 ft. Gouge shows on both walls."

Martin, et. al (108) also describes characteristics of the ore and compares it with that of adjacent properties including the Crown Point (Kenai-Alaska) (S-227) and Falls Creek (California-Alaska) (S-224).

"The fissure filling of the two veins is massive white quartz, somewhat shattered and jointed. Faint indications of secondary banding are seen in some places. Only a few small crystal-lines cavities are noticeable in the vein quartz. At the western end of the outcrop of the upper vein, the quartz occurs as a network of stringers in the shattered country rock, the graywacke being considerably iron-stained. The quartz stringers here are frozen tightly to the graywacke, and narrow rusty bands, showing the former position of iron sulfides lie along the contact. The country rock is impregnated with iron sulfides at several places along the vein.

Sulfides are somewhat more abundant in these veins than in those of the Kenai-Alaska Gold Co., but they are not nearly so plentiful as in the vein on the adjacent property of the California-Alaska Mining Co. Native gold occurs in association with arsenopyrite and galena and in specimen gold was embedded in an arsenopyrite grain. The gold and sulfide appear as small grains, no large masses being observed in either vein."

BUREAU WORK:

The Bureau examined, sampled, and mapped accessible portions of this mine in 1980 and 1982. Data for 22 samples (4824-4837, 7132-7138, 7140) are listed on table C-54.

Based upon the operating history and production records available, it is doubtful that the Skeen-Lechner property was worked at a profit. However, due to the current high gold prices and collection of samples containing significant concentrations of gold by the Bureau in 1980, additional exploration of the property appears warranted. Sample 4835, collected over a thickness of 18-in. of quartz and including 6-in. of country rock from a surface exposure of the upper vein (fig. C-16) assayed over 10 oz gold/ton and nearly one ounce silver/ton. The grade of the remaining quartz samples collected from

the upper quartz vein averaged less than 0.5 oz gold and 0.25 oz silver/ton (table C-54). The 1980 and 1982 examinations of the property were restricted to sampling portions of the upper vein exposed in the 3,210 ft level and at the surface. A minimum evaluation program would involve extensive underground channel sampling in at least the two upper levels and trenching on the surface to identify lateral extent of the veins. Closely spaced samples would be required due to the sporadic and discontinuous nature of the high-grade ore shoots reported to occur on the property. Drilling should be done to ascertain continuity at depth if channel and trench samples are encouraging.

Should sufficient enough grade and tonnage be identified in the mine by future evaluation to warrant development, the hazardous nature of the terrain must be considered. Though subsurface work could be performed year round, the avalanche danger in the area is extreme during the winter and spring seasons and could prevent the safe transportation of miners to and from the mine. A seasonal operation might have to be developed. High mineral development potential for a small mine.

REFERENCES:

6, 25, 64-65, 83, 85-87, 89, 108, 171, 184, 191-194

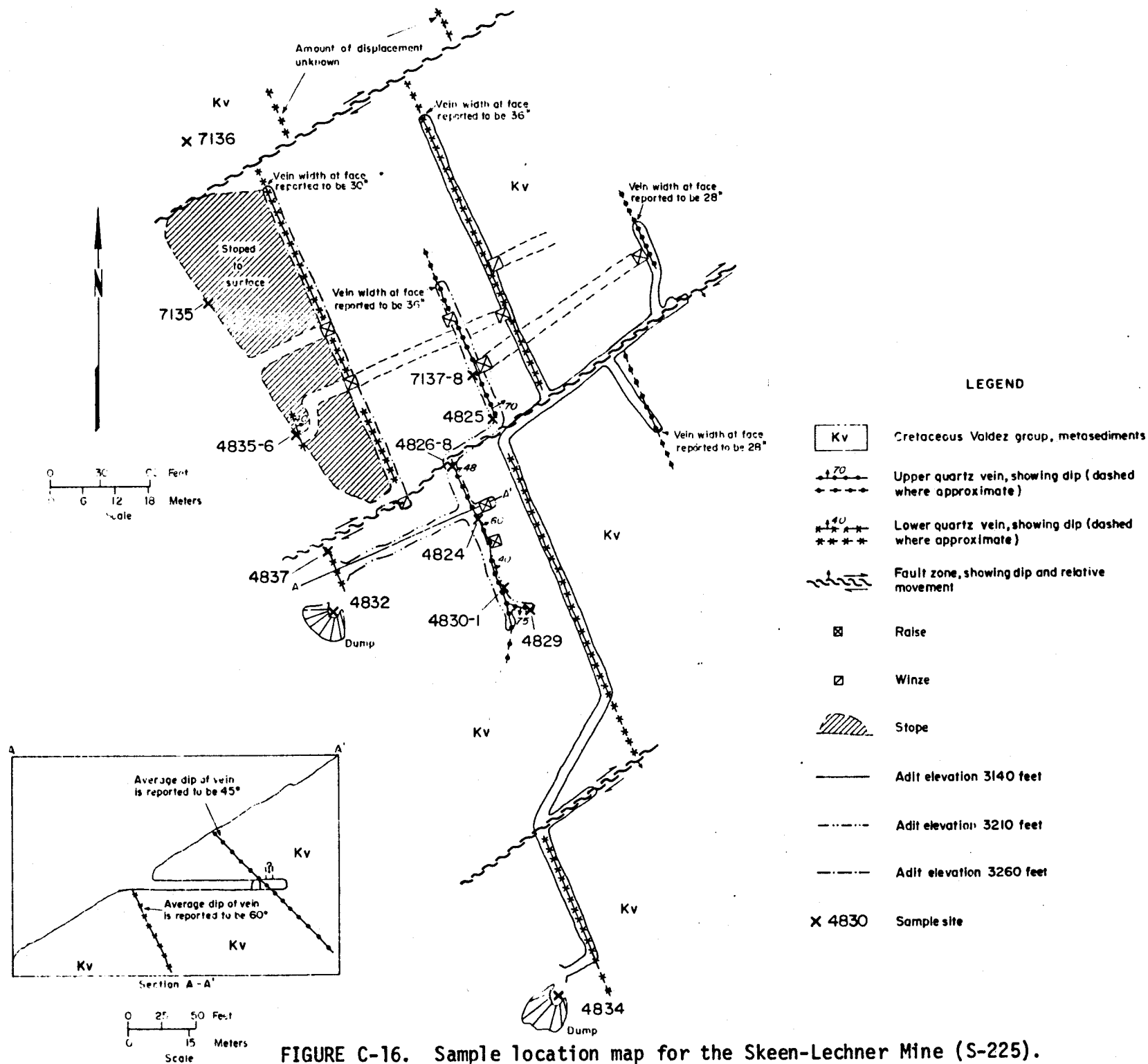


FIGURE C-16. Sample location map for the Skeen-Lechner Mine (S-225).

TABLE C-54. - ANALYTICAL RESULTS - Skeen-Lechner Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	Te	
4824	Q.V.	Chip	54 in.	0.38	2.0	40	10	30	2000	ND	ND	ND	ND	ND	ND	Upper vein 3210 ft level.
4825	Q.V.	Chip	24 in.	17	5.9	38	90	40	ND	ND	ND	ND	ND	ND	ND	Upper vein 3210 ft level.
4826	Q.V.	Chip	36 in.	<.03	1.7	40	5	40	ND	ND	ND	ND	ND	ND	ND	-----"
4827	Q.V.	Chip	18 in.	0.85	2.8	35	15	50	ND	ND	ND	ND	ND	ND	ND	-----"
4828	H.W. Metased	Chip	18 in.	<0.03	2.1	36	14	60	ND	ND	ND	ND	ND	ND	ND	-----"
4829	Q.V.	Chip	48 in.	0.10	1.9	40	14	80	ND	ND	ND	ND	ND	ND	ND	-----"
4830	Q.V.	Chip	48 in.	0.1	1.4	32	55	80	ND	ND	ND	ND	ND	ND	ND	-----"
4831	Metased	Chip	18 in.	0.1	3.4	35	26	250	ND	ND	ND	ND	ND	ND	ND	-----"
4832	Q.V.	Grab	NA	35	16	43	650	150	ND	ND	ND	ND	ND	ND	ND	-----"
4833	Mill Feed	Grab	NA	31	9.3	37	135	100	10000	ND	ND	ND	ND	ND	ND	Mill site.
4834	Q.V.	Grab	NA	12.5	5.2	35	70	150	ND	ND	ND	ND	ND	ND	ND	Upper vein dump. 3260' level.
4835	Q.V.	Chip	24 in.	360.0	30.0	28	450	80	ND	ND	ND	ND	ND	ND	ND	Upper vein 3260 ft level.
4836	Q.V.	Select Chip	2 in.	29.0	9.7	30	160	210	ND	ND	ND	ND	ND	ND	ND	-----"
4837	Q.V.	Chip	36 in.	0.27	1.0	30	10	55	ND	ND	ND	ND	ND	ND	ND	Upper vein 3210 ft level.
7132	Q.V.	Chip	14 in.	3.322	0.6	8	300	105	870	ND	3	ND	3	ND	5	Upper vein 3260 ft level.
7133	Q.V.	Chip	15 in.	0.054	0.2	<1	76	43	380	ND	<2	ND	3	ND	ND	-----"
7134	Q.V.	Grab	NA	.0029 oz	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Panned 3260 ft level.
7135	Q.V.	Chip	3 in.	0.554	0.4	<1	24	13	260	ND	ND	ND	ND	ND	ND	ND
7136	Q.V.	Chip	6 in.	<.005	0.3	4	<1	26	15	ND	ND	ND	ND	ND	ND	ND
7137	Quartz Debris	Grab	NA	.0012 oz	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Panned upper vein 3210 ft level.
7138	Q.V.	Grab	NA	<.005	0.2	4	8	84	610	ND	ND	ND	ND	ND	ND	Upper vein 3210 ft level.
7140	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Upper vein 3260 ft level.

* ounces per ton

** 0.0029 oz recovered from approximately 7 lb of debris collected in the 3,260 ft level.

*** 0.0012 oz recovered from amalgamating pan concentrate from 7 lb of debris collected in stope.

NAME (other names): East Point Mine

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7

SE 1/4 Sec 9 T 4N R 1E

Meridian: Seward

Geographic: The workings and mill are located near the Crown Point Mine approximately 3 miles east of the Seward Highway at an elevation of 4,500 ft about one mile north of Falls Creek (fig. C-14). A switchback road leads up to the glacier below the mine but considerable work would be required to make it suitable for continued use by 4-wheel drive or tracked vehicles.

REFERENCE NUMBERS:

Map
S-226

Kx
T2

Tysdal
74

MAS
95

BLM
AA033273-
AA033277

MS
NA

HISTORY & PRODUCTION:

1924 - Reported development of the vein by John Dryer, a packer for the Crown Point Mine (128).

1940-45 - Recovery of about 379 oz from a surface excavation near the present site of the cookhouse (128).

1954-56 - Development and mining performed by Patrick Bogan and partners who erected the current structures on site (128).

1960 - Report by William A. O'Neill, Registered Consulting Mining Engineer (128).

1981 - Assessment filed by Patrick Bogan.

Total recorded production: 1,725 oz gold, 479 oz silver (193).

RESOURCES:

>3,700 tons, 2.35 oz gold/ton, 0.5 oz silver/ton based upon O'Neill report (128).

OPERATING DATA:

The subsurface workings, reported to consist of 100 ft of drift, 70 ft of winze and stoping, are currently inaccessible due to caving at the portal and the reported presence of water (ice?) in the workings. The remaining surface structures consisting of living quarters and mill have been badly damaged by rock falls from the vertical cliff face above. The mine is in an extremely hazardous location because of rock falls and the steep glacial and bedrock slopes which must be negotiated to reach it.

GEOLOGIC SETTING:

O'Neill (128), who was able to examine the mine in 1960, has written the only available description of the East Point vein.

"This is a fissure vein in slate bedrock that strikes N55°E and dips 45°-60°SE. It is strong, persistent vein, which can be traced on the surface of the cliff face for several hundred feet. Other veins are also visible along the mountain above this vein.

The vein cuts the bedding of the country rock between twenty and thirty degrees. The stoped area of the vein was about 6-ft thick though it pinches at both faces of the lower drift. The width of the vein at the northeast face is 8-in. and at the southwest face it is 12-in. The mineralization is somewhat banded in a moderately hard white quartz. Other minerals visible are arsenopyrite and pyrite."

Data from smelter returns and samples collected by O'Neill and the Bureau indicate that the East Point vein is high-grade. The weighted average of 6 shipments made to the Tacoma Smelter in 1955 and 1956 as summarized by O'Neill was 4.92 oz gold/ton and 1.37 oz silver/ton.

BUREAU WORK:

Brief examinations of the property were made in 1980 and again in 1982. Falling rock made the visits extremely risky. The vein was exposed after some digging approximately 50 ft north of the compressor. There the vein is 4-in. wide, strikes N25-30° E, and dips 40°SE. The quartz contains disseminated grains and veinlets of pyrite, arsenopyrite, minor galena, sphalerite, and gold.

The past production history, sample data, and a discussion with Mr. Bogan indicate that this property has considerable promise and that additional exploration is warranted. Preliminary evaluation should include geologic mapping to establish the relationship between the East Point, Crown Point, and Skeen-Lechner veins, reopening of the portal to allow for detailed subsurface sampling of the vein, and sampling of the vein at the surface. The unsafe nature of the terrain cannot be overemphasized. Protective measures, including the use of climbing gear, hard hats, and rock shelters should be taken.

Data from three samples collected by O'Neill in 1960 and two samples (4838, 7139) collected by the Bureau are tabulated in table C-55. High mineral development potential for a small mine.

REFERENCES:

6, 85, 108, 118, 128, 184, 191-194

TABLE C-55. - ANALYTICAL RESULTS - East Point Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Te	
4838	Q.V.	Grab	NA	200	3.5	30	350	70	10000	ND	ND	ND	ND	ND	ND	--	Assorted quartz from mill.
7139	Q.V.	Chip	4 in.	* 2.204	* 0.8	3	78	37	3800	ND	4	ND	7	ND	ND	<5	Vein exposed 50 ft north of portal.
1054	Q.V.	Grab	NA	* 0.16	* 0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	O'Neil sample.
1055	Q.V.	Chip	12 in.	* 0.01	* 1.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	----"----
1056	Q.V.	Chip	8 in.	* 5.85	* 2.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	----"----

* ounces per ton

NAME (other names): Crown Point Mine
(Kenai Alaska)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7 NW 1/4 Sec 9 T 4N R 1E
Meridian: Seward

Geographic: The Crown Point Mine is located on the north side of Falls Creek approximately 3 miles southeast of Moose Pass (fig. C-14). The original mill was located at 1,700 ft above sea level on a small tributary to Falls Creek. A trail led up to the mine workings located on the Black Butte vein which crops out on the west side of a small cirque glacier between elevation of 4,100 and 4,600 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-227	358	70	114	AA044496- AA044516	NA

HISTORY & PRODUCTION:

- 1906 - Original location of the Black Butte vein by J. W. and C. E. Stevenson (108).
 - 1907 - Location of the Moon Anchor veins (108).
 - 1910 - Black Butte vein optioned and developed by T. W. Hawkins, Charles E. Brown, James R. Hayden, and John Adams. Property deeded to Kenai Alaska Gold Co. (108).
 - 1911 - Development on the Black Butte vein and installation of a 630-ft aerial tram with 5 ton/hr capacity and a 5-stamp mill (108).
 - 1911-16 - Continuous operation and production (1,852 oz gold, 428 oz silver) (193).
 - 1935-41 - Property reopened and operated by the Crown Point Mining Co. (193). (Reported production of 1,273 oz gold, 206 oz silver).
 - 1955-56 - Minor development by Anson Houldsberry (6).
 - 1958-59 - Minor development by Edward Nielson (6).
 - 1981 - Location notice filed by Bertha Midyett and Louis Knudson (194).
- Total recorded production: Gold 3,145 oz, silver 634 oz (193).

RESOURCES:

Black Butte vein (western extension) 30,000 tons, 0.365 oz gold/ton, 0.1 oz silver/ton.

Stoping of the Black Butte vein has been extensive. Only a few pillars remain which might be capable of supporting a small high-grading operation. Resource calculations are possible for the pillar sampled in the east end of the 4,320 ft level where the mineralization averages 6-in. thick over a strike length of 40 ft. Assuming that the vein continues up dip for 30 ft with an average grade of 2 oz of gold/ton (based upon samples 5293, 5302, 5303, 5684) an inferrable resource of approximately 100 oz of gold remains in the pillar. The best opportunity for blocking out enough reserves to support a small operation for a period of 5 years or more (i.e. 3,000 tons/year production) would be to explore the western extension of the Black Butte vein or attempt to locate the eastern faulted-off extension of this vein by drilling.

OPERATING DATA:

Four working levels occur at elevations of 4,170, 4,320, 4,450, and 4,550 ft (fig. C-17). The two lower adits are mostly accessible, the 4,450 level is caved within 50 ft of the portal and the 4,550 ft level is caved at the portal. Extensive stoping occurred between the three upper levels. The lower level appears to have been used primarily for haulage.

GEOLOGIC SETTING:

Johnson (108) discussed the structural characteristics of the ore deposit in some detail.

"Three veins have been discovered on this property, the Black Butte vein, now being developed, and two smaller veins on the Moon Anchor claim.

The Black Butte vein occupies a fissure, formed during or after the folding of the slate-graywacke series. The strike of the fissure as shown by the plan of the mine workings (fig. C-17) is slightly curved, varying from N50° to S83°E. The dip ranges from 65°SE to 90°. On the surface the vein has been traced for more than 1,500 ft. The width of the fissure filling ranges from 5 to 48-in., the average width being from 20 to 30-in. The fissure filling consists of crushed and decomposed country rock with numerous lenses and stringers of quartz which locally fill the entire fissure. The width of the quartz masses varies from 1 to 30-in. Twenty measurements on several of the quartz lenses gave an average width of 11 in. Larger and more continuous bodies of quartz have been found in the east end of the lower drift than in the west end, and most of the development work of 1911 was done in that part of the mine. Considerable movement has taken place along this fissure since the vein quartz was deposited, as is shown by the slickensided quartz surfaces within the vein, the close jointing in the quartz, and the lenticular nature of some of the quartz masses. Slickensides are also noticeable in the slate close to the veins.

No development work has been done on the veins on the Moon Anchor claim and little is known regarding their size or extent. Both veins apparently occupy fissures, one of which strikes a little south of east and has a vertical dip. This vein is traceable about 200 ft. The width of the quartz filling of these veins varies from 1 to 2-ft."

Johnson (108) also described the mineralization present. "The quartz gangue, as a rule, is massive and compact. The veins on the Moon Anchor claim, however, contain a few small cavities lined with well-developed quartz crystals. The vein quartz is milky-white except where discolored by decomposition products of the sulfides. Calcite occurs in the veins in small quantities. The close rhombohedral jointing of the quartz gives the ore a checked appearance.

The ore is free-milling. The gold is very fine and is rarely visible to the unaided eye. The sulfides, arsenopyrite, galena, and sphalerite, form less than 1 pct of the ore. The gold is found both free and in close association with or included in the sulfides, which are fine and widely scattered through the quartz gangue. Many of the joint surfaces of the quartz are rusty and when cleaned show much fine gold, left by the decomposition of the gold-bearing sulfides."

Additional characteristics of possible significance were identified during an examination of the property by the Bureau and USGS in July, 1980. The Black Butte vein was developed along a fault zone which has apparently offset a well-defined sandstone bed by nine feet in a right-lateral sense. The vein itself is consistently offset in a left-lateral sense by northeast-striking fractures. Muscovite was identified in the Black Butte vein which should allow the vein to be dated by K-Ar methods.

BUREAU WORK:

The Bureau examined, sampled, and mapped the accessible workings during 1980 (figs. C-17 and C-18). In 1981, a bulk (300 lbs) sample (5684) was collected from the 4,320 ft level to determine grade and metallurgical characteristics. In 1982, approximately 50 lbs of debris from the floor of the 4,320 ft level was collected, panned, and amalgamated (7141).

Quantitative analyses for samples collected from the Crown Point Mine are summarized in table C-56. Sample locations are indicated on figures C-17 and C-18. The average grade of the samples collected from the Black Butte vein is nearly 1 oz gold/ton and 0.26 oz silver/ton. The highest grade samples were collected from the east end of the 4,320 ft level (fig. C-18) (samples 5293, 5202, 5203, 5684) from a pillar which remains between the 4,320 and 4,450 ft levels. The Black Butte vein was traced on the surface for about 1,000 ft west of the upper mine workings. Samples 5288 and 5308 were collected 50 and 500 ft west of the upper workings, respectively. Both contain high enough values (8.6 ppm gold, 14.0 ppm silver) to indicate that the western extension of the Black Butte vein deserves additional attention. The east end of the vein is cut off by a northeast striking high angle fault of undetermined net slip. An eastern extension of the vein was not located during the course of this investigation nor apparently by previous owners. We did not evaluate the two veins reported to crop out on the Moon Anchor claim (fig. C-14) but sample 5309 containing 0.08 ppm gold is likely from one of them.

REFERENCES:

6, 24-25, 64-65, 85-86, 88-90, 108, 164-166, 171, 184, 191-194

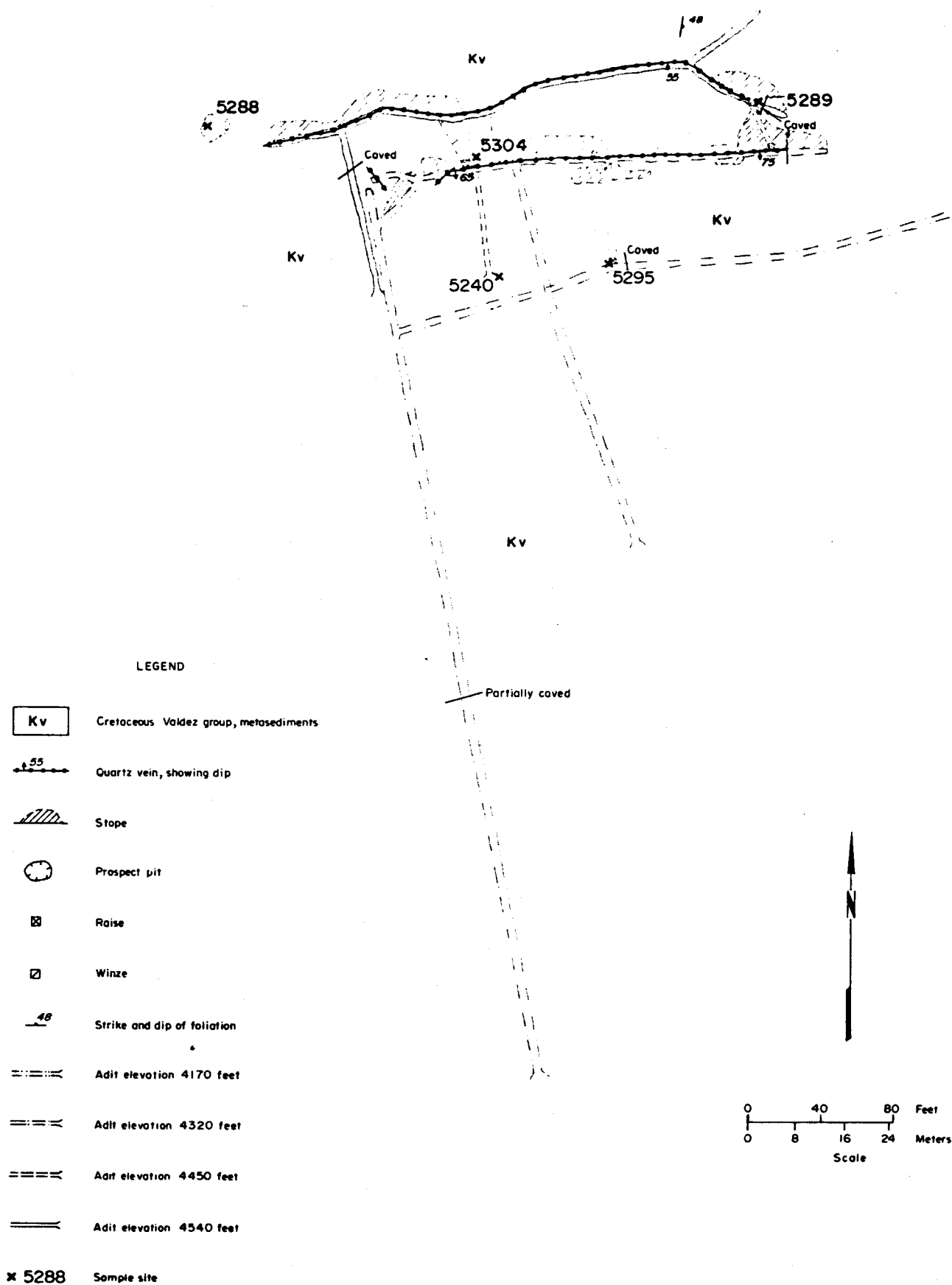


FIGURE C-17. Sketch map showing Crown Point Mine (S-227) workings and locations of samples collected from all levels except the 4,320 ft level.

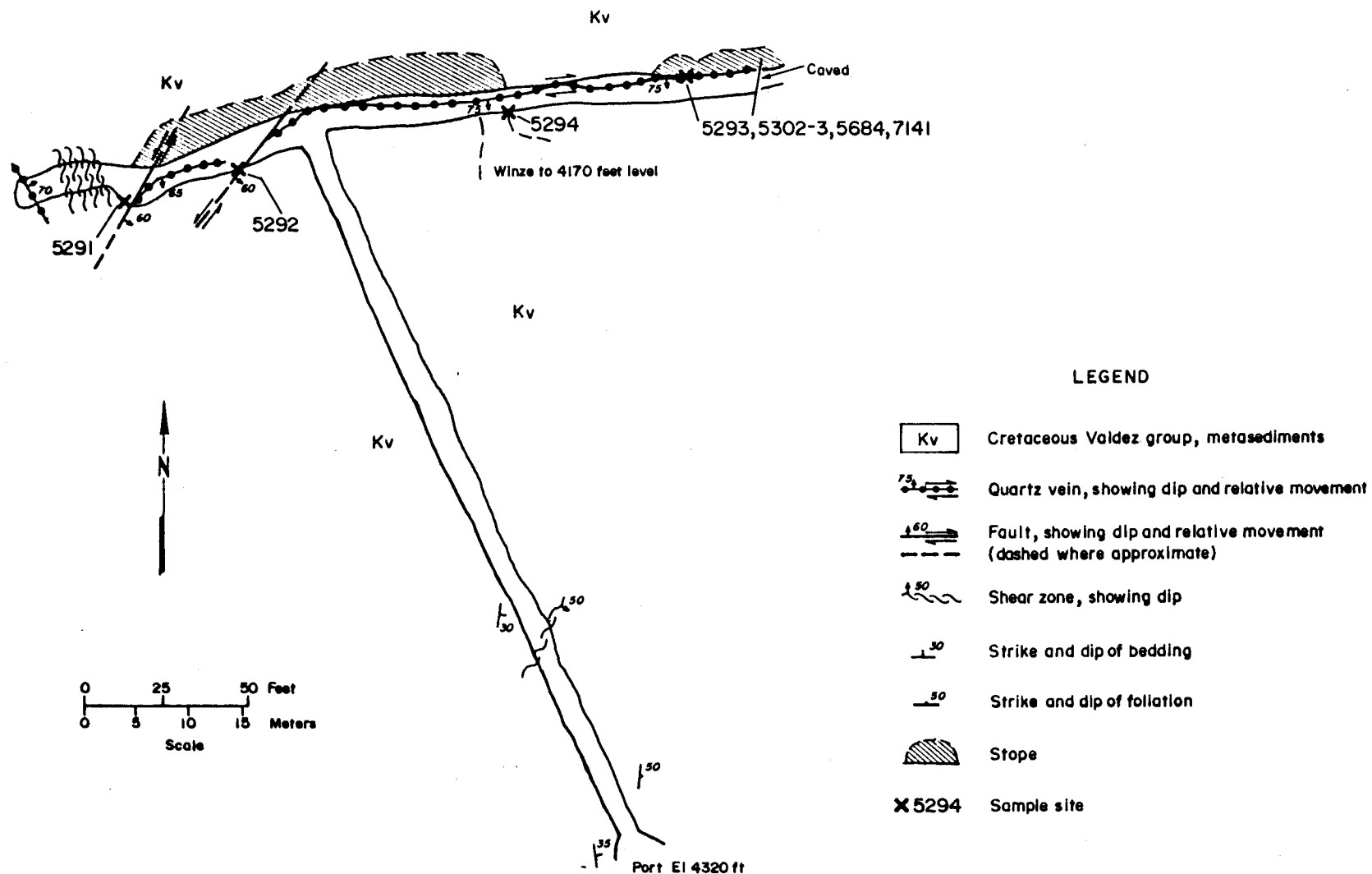


FIGURE C-18. Sample location map for the 4,320 ft level of the Crown Point Mine (S-227).

TABLE C-56. - ANALYTICAL RESULTS - Crown Point Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5288	Q.V.	Chip	18 in.	8.6	4.1	40	37	110	880	ND	ND	ND	ND	ND	ND	4550 ft level.
5289	Metased Q.V.	Chip	20 in.	30.0	8.1	38	54	115	690	ND	ND	ND	ND	ND	ND	4550 ft level.
5290	Q.V.	Grab	NA	25 1*	11.5	24	103	53	340	ND	ND	ND	ND	ND	ND	4450 ft level.
5291	Q.V.	Chip	12 in.	13	4.4	44	47	145	1850	ND	ND	ND	ND	ND	ND	4320 ft level.
5292	Q.V.	Chip	10 in.	19	5.4	28	41	25	690	ND	ND	ND	ND	ND	ND	4320 ft level.
5293	Q.V.	Chip	6 in.	97	19.5	23	156	58	600	ND	ND	ND	ND	ND	ND	4320 ft level.
5294	Q.V.	Chip	26 in.	34	9.5	37	152	69	900	ND	ND	ND	7	ND	ND	4320 ft level.
5295	Q.V.	Grab	NA	5.1	1.6	32	56	43	450	ND	ND	ND	ND	ND	ND	4170 ft level.
5302	Q.V.	Grab	NA	55	14.5	63	217	120	480	ND	ND	ND	ND	ND	ND	HW side vein 4320 ft level.
5303	Q.V.	Grab	NA	39	9.5	29	103	32	775	ND	ND	ND	ND	ND	ND	FW side vein 4320 ft level.
5304	Q.V.	Grab	NA	29	7.2	27	56	26	740	ND	ND	ND	ND	ND	ND	4450 ft level.
5307	Q.V.	Grab	NA	.08	1.0	29	6	24	615	ND	ND	ND	5	ND	ND	Not on main vein system.
5308	Q.V.	Grab	NA	14.0	4.5	ND	ND	ND	170	ND	ND	ND	ND	ND	ND	West of upper portal.
5309	Q.V.	Chip	6 in.	0.08	1.4	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	West of upper portal.
5684	Q.V.	Channel	8 in.	2.2*	0.51*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4320 ft level, 300 pound bulk sample.
7141	Metased Q.V.	Grab	NA	** 0.0058	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Debris from floor to be panned.

* ounces per ton

** 0.0058 oz was recovered from approximately 50 lbs of debris collected from the floor of the 4320-ft level by panning and amalgamating the concentrate.

NAME (other names): Sollars Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward B-7

SE 1/4 Sec 34 T 5N R 1E

Meridian: Seward

Geographic: The prospect is reported to occur on the south side of Grant Lake at an elevation of 1,500 ft (182).

REFERENCE NUMBERS:

Map
S-228

Kx
167

Tysdal
69

MAS
TT9

BLM
AA046878-
AA046881

MS
NA

HISTORY & PRODUCTION:

1981 - Relocated by Forty Mile Association (194).

No recorded production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported to consist of quartz veins in slate and graywacke containing only trace amounts of gold (182).

BUREAU WORK:

This prospect was searched for but not located in 1980 and 1982. A small, possibly man-made cave was found near the reported location of the prospect. No mineralization was identified. Undetermined mineral development potential.

REFERENCES:

6, 85, 182, 184, 191-192, 194

NAME (other names): Grant Lake Occurrence

COMMODITIES: Ag, Cu

LOCATION: Quadrangle: Seward B-8

SE 1/4 Sec 26 T 5N R 1E

Meridian: Seward

Geographic: This occurrence is located on the north side of Grant Lake 1 1/2 mi north of the cabin site at the east end of the lake, at an elevation of 3,000 ft.

REFERENCE NUMBERS:

Map
S-229

Kx
NA

Tysdal
67

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by the USGS (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization is associated with a brownish red schist which has developed along a shear zone apparently associated with the Placer River Fault. Abundant quartz veinlets are reported to be present. Assays reported by Tysdal (184) are as follows:

Ag-3 ppm, Cr-500 ppm, Ni-100 ppm, Zn-200 ppm, Co-300 ppm, Cu-1000 ppm, V-700 ppm.

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Moose Creek Occurrence COMMODITIES: Mn?

LOCATION: Quadrangle: Seward C-6 SW 1/4 Sec 30 T 5N R 2E

Meridian: Seward

Geographic: This occurrence is located on a ridge top at an elevation of about 5,000 ft west of the headwaters of Moose Creek (184).

REFERENCE NUMBERS:

Map
S-230

Kx
NA

Tysdal
68

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

The mineralization consists of a reddish-brown, iron-stained zone extending several 10's of meters up the mountainside in greenschists. One sample assayed 3,000 ppm manganese, 70 ppm chromium, and 60 ppm zinc (184).

BUREAU WORK:

None. Low mineral development potential.

REFERENCES:

184

NAME (other names): Case Mine
(Grant Lake)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-7 1/4 Sec 29 T 5N R 1E
Meridian: Seward
Geographic: The Case Mine is located on the north side of Grant Lake approximately 1 3/8 miles east of the village of Moose Pass. The property is accessible from Moose Pass by using a boat to cross Trail Lake at a point approximately 1/2 mile south of the railroad bridge and continuing nearly 2 1/2 miles over a poorly developed road to the mine camp. Cabins, one of which is still in use, were constructed during the 1930's near the lake shore at 700 ft above sea level. An overgrown trail leads from the mine workings located about 1/2 mile to the north-northeast.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-231	21	66	112	AA015031	2243
				AA015035	
				AA016701	

HISTORY & PRODUCTION:

- 1911 - Originally located by J. F. Case and E. E. Whitney (6).
- 1912-14 - Activity at the mine reported by USGS publication (87).
- 1933-40 - Recorded production (193).
- 1949 - Recorded production (193).
- 1968-69 - Examined by U.S. Forest Service geologist, Garrett (63).
- 1973 - Mineral survey completed.
- 1978 - Examined by U.S. Forest Service geologists, Hoekzema, Moulton.
- 1979 - Examined by U.S. Forest Service geologist, Halloran (69).
- 1980 - Examined and sampled by Anson L. Renshaw, Consulting Mining Engineer.
- 1981 - Assessment filed by Grant Lake Development Co (194).
- Total recorded production: Gold 792 oz, silver 123 oz (193).

RESOURCES:

270 tons, 0.78 oz gold/ton, 0.2 oz silver/ton in upper workings.

Data available indicates that portions of the east-west striking veins contain significant, though spotty, values of gold and silver. Not enough data is present to calculate meaningful reserves for this deposit. Values may continue in the west drift at depth and along strike. Some tonnage might be developed between the upper and main level east of the fault especially if grades, indicated at the 1,600 ft portal, continue along strike to the east.

OPERATING DATA:

Three adits occur at elevations of approximately 1,500, 1,540, and 1,600 ft in a well-developed gully. The lower level consists of a 10-ft adit along a quartz vein pinching from 3 ft at the bottom of a 6 ft face to 1 1/2-in. at the top. The main workings at 1,540 ft above sea level consist of 170 ft of workings, 30 ft of which have been stoped to the surface (fig. C-19). The upper level consists of about 40 ft of drift.

GEOLOGIC SETTING:

Quartz veins exposed at the Case Mine occur in interbedded slate and graywacke. Foliation, which is best developed in the slate, is nearly vertical and strikes north-south. Three sets of quartz veins occur in the area. One set generally parallels foliation and usually occurs along well-developed longitudinal fault zones. One of these has been drifted along in the main working level for nearly 100 ft (fig. C-19). This fault zone dips about 70°W and appears to be barren. Graywacke is exposed along the footwall and slate along the hangingwall. The fault displaces the main mineralized structure discussed below by up to 35 ft in a left-lateral sense. The second set of veins occur along northwesterly striking 60°-65°NE dipping faults offsetting the main E-W mineralized structure right laterally by up to 5 ft (fig. C-19). They appear to be barren and are discontinuous in nature.

The third set of veins, of which two are exposed in the present workings, contain significant mineralization. They strike N70°E to E-W and dip steeply to the south (60°-80°). One of these veins is developed in the main working level by about 100 ft of drift, 30 ft of which has been stoped to the surface, and in the upper level by 40 ft of drift. The vein pinches and swells along strike from 0- to 36 in. and averages about 14- to 16-in. thick overall. The vein contains arsenopyrite, pyrite, galena, and chalcopyrite though much of it appears barren or contains only arsenopyrite. Apparently this vein was formed along a previously developed fracture in the metasediments. However, mineralization is generally best developed along slickensided surfaces of the quartz indicating some post mineral faulting. In the main (1,540 ft) level, the significant gold values appear to have been deposited west of the longitudinal fault and in slate. Significant values have not been reported from quartz exposed east of the fault in the east drift where it is hosted by graywacke.

However, one sample (5328) of quartz collected by the Bureau at the portal to the upper level where the vein is in graywacke contained 1.11 oz gold/ton indicating that the graywacke can be a favorable host for gold-bearing mineralization, at least adjacent to the longitudinal fault zone. A second mineralized vein, striking E-W and dipping 70°S, has been developed by a 10 ft drift located at 1,500 ft above sea level about 150 ft south of the main workings. Garretts' sample of this vein, (G1), collected in 1968, assayed 0.226 oz gold/ton. This vein contains visible arsenopyrite and pyrite both of which tend to be localized along slickensided surfaces of the quartz.

BUREAU WORK:

The Case Mine was sampled, examined, and portions mapped by the Bureau in 1980. Portions of the developed vein were sampled in the west drift of the main working level and in the upper level. Time did not allow examination of the east drift exposure. Data obtained from nine Bureau samples (5323-5331) and three collected by the U.S. Forest Service (G1, H1, H2) are listed on table C-57. Sample locations are shown on figure C-19.

Some additional exploration may be warranted. Specifically, the shaft in the west drift should be pumped dry and sampled to determine if values continue at depth. Scaffolding should be erected to sample the stope to determine tenor and nature of previously mined ore. Several surface trenches should be dug to ascertain continuity of the two mineralized structures described above. Drilling will be needed to determine whether continuity and grade occur at depth prior to making plans for further development. Moderate mineral development potential for a small mine.

REFERENCES:

1-2, 6, 30, 63, 69, 87, 89-90, 136, 164-166, 182, 184, 191-194

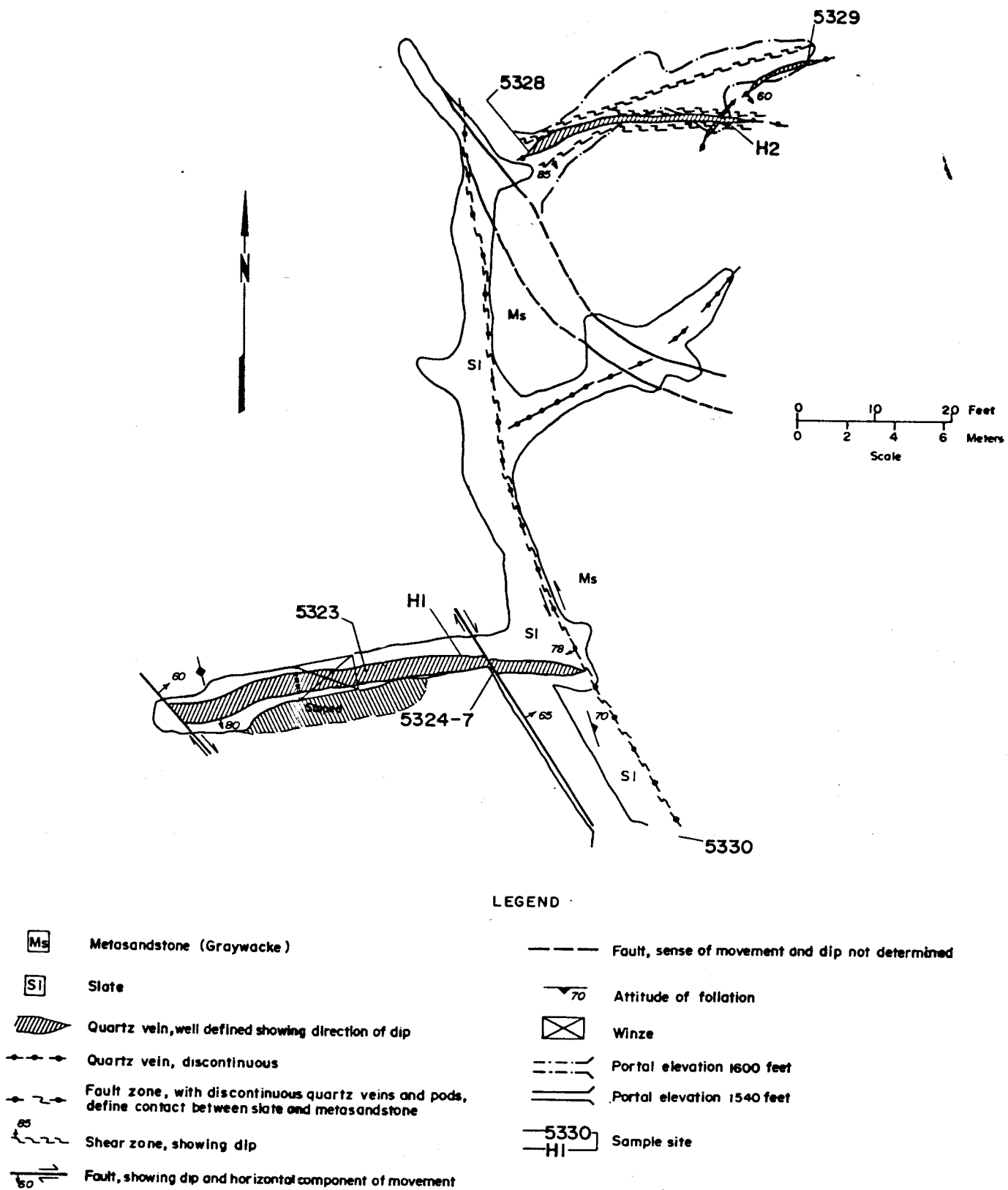


FIGURE C-19. Sample location map for the Case Mine (S-231).

TABLE C-57. - ANALYTICAL RESULTS - Case Lake Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5323	Q.V.	Grab	NA	7.5	4.6	550	1200	200	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5324	Q.V. H. W.	Grab	NA	0.07*	0.5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5325	Metased F. W.	Grab	NA	0.4	0.4	65	79	235	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5326	Metased	Grab	NA	0.05	0.4	55	35	155	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5327	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5328	Q.V.	Chip	48 in.	1.11*	0.3*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600 ft level.
5329	Q.V.	Chip Pan	6 in.	0.16	1.4	20	440	290	ND	ND	ND	ND	ND	ND	ND	ND	1600 ft level.
5330	Str Sed	Conc	NA	345.6	8.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1540 ft level.
5331	Q.V.	Chip	14 in.	0.75	0.4	65	70	235	ND	ND	ND	ND	ND	ND	ND	ND	1500 ft level.
G1	Q.V.	Grab	NA	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Forest Service sample 1500 ft level.
H1	Q.V.	Chip	48 in.	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Forest Service sample 1540 ft level.
H2	Q.V.	Chip	36 in.	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Forest Service sample 1600 ft level.

* ounces per ton

NAME (other names): Rec. 3-9 Occurrence

COMMODITIES: Haydite

LOCATION: Quadrangle: Seward C-7
Meridian: Seward

1/4 Sec 13 T 4N R 1W

Geographic: This occurrence consists of several claims located along the Seward Highway north of the bridge crossing the Trail River.

REFERENCE NUMBERS:

Map
S-232

Kx
498

Tysdal
NA

MAS
NA

BLM
AA015000-
AA015006

MS
NA

HISTORY & PRODUCTION:

1959 - Results of bloating tests and other characteristics published for samples of haydite collected in the Trail Lake Area by R. A. Eckhart and G. Plafker (55).

1977 - Claims located by Joseph, Sherman and Larry Smith and Michael Mitchell (194).

No reported production.

RESOURCES: 50 million tons.

Eckhart and Plafker (55) discussed the reserves as follows:

"The lack of adequate topographic and geologic control uphill from the road-cut exposures described in table 1 makes impossible anything but a general statement on the amount of argillite in the area. Relatively pure argillite with less than 1 percent quartz as thin stringers makes up all of the deposit shown on figure 11. This section represents a stratigraphic interval of 385 ft (assuming a constant 55° dip), and is exposed along the strike for 1,750 feet and for a vertical distance of more than 100 ft. The uniform character of the argillite indicates that similar material may also be present uphill from the road cuts. This material could be readily sampled from shallow pits dug to bedrock or by means of low-angle core holes drilled into the hillside from the highway or from the abandoned road above the highway."

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

An excellent description of this deposit has been written by Eckhart and Plafker (55).

"Lithologic characteristics. - The argillite mapped on figure 11 is a hard black fine-grained rock with a smooth silky sheen on fresh surfaces. The rock breaks along bedding planes into thin slabs with irregular sharp edges. No mappable beds of sandstone or other impurities were found in the deposit.

In thin sections the rocks are seen to consist of approximately 25-50 percent silt-sized particles less than 1 mm in diameter, embedded in a very fine grained dark-colored matrix. Clear angular fragments of quartz and plagioclase feldspar predominate, with subordinate amounts of detrital muscovite flakes. The flakes of mica generally lie parallel to the bedding and, in combination with chlorite, give the rock its characteristic platy parting. Sections cut normal to the stratification show an aggregate positive elongation due to parallelism of the mica flakes. A very finely laminated structure is caused by streaks and minute lenticles of carbonaceous material and magnetite, which clouds and masks the fine-grained matrix minerals.

The matrix consists largely of clay-sized particles predominantly of a colorless flaky mineral with very low birefringence and relatively high refractive index ($n = 1.58$). The X-ray diffraction pattern indicates that the clay-sized minerals are predominantly chlorite with subordinate amounts of illite. This probably represents incipient recrystallization to chlorite of original clay minerals, due to low-grade regional metamorphism.

Accessory minerals are abundant magnetite and scant epidote, garnet, tourmaline, carbonate, zircon, and sphene. Iron sulfides are conspicuously absent.

Structure. - Both the bedding and cleavage in the argillite deposit strike uniformly north to $N15^{\circ}E$ and dip about $55^{\circ}E$ to southeast. The road cuts of the Seward-Anchorage highway are excavated essentially along bedding planes in the argillite. A single fault trending $N45^{\circ}W$, and dipping $43^{\circ}SW$ cuts the argillite. It is filled with 2-3 inches of quartz. Thin quartz stringers less than 1 inch thick occur in 1 area (figure 11) as a swarm of conjugate sets trending $N60^{\circ}W$ and $N80^{\circ}W$, and dipping $60^{\circ}NE$ and $33^{\circ}S$, respectively."

BUREAU WORK:

No recent Bureau work was done on this deposit. However, according to bloating tests made of samples submitted by Plafker and Eckhart to the Bureau Electrotechnical Laboratory in Norris, Tennessee in 1953, this rock has favorable bloating characteristics at 2,200-2,300°F. The highly favorable location of this deposit adjacent to the railroad and highway system makes it economically interesting.

Such a deposit could possibly supply expandable materials for consumption in the Anchorage market. A feasibility study including a market analysis is needed to determine whether its use would have economic advantage over imported materials. High mineral development potential.

REFERENCES:

6, 55, 184, 192, 194

NAME (other names): Ballaine and Nelson COMMODITIES: Au

Occurrence

LOCATION: Quadrangle: Seward B-7 SW 1/4 Sec 23 T 4N R 1W
 Meridian: Seward

Geographic: This occurrence is reported to be located
 on the north side of Kenai Lake 2 mi northwest
 of Lawing (108).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>S-233</u>	<u>T44</u>	<u>76</u>	<u>T10</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1915 - Claims originally located by Ballaine and Nelson (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

Searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 108, 184, 191-192

NAME (other names): Kenai Lake Occurrence

COMMODITIES: Sb

LOCATION: Quadrangle: Seward B-7

SW 1/4 Sec 27 T 4W R 2W

Meridian: Seward

Geographic: This occurrence is located in a small tributary to Kenai Lake 1/2 mi east of Porcupine Island.

REFERENCE NUMBERS:

Map
S-234

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1980 - Stream sediment and pan concentrate sample collected by the U.S. Bureau of Mines.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization similar to that at the K & T Antimony Prospect (S-236) is suspected due to the anomalous Sb value obtained in a stream sediment sample. This value is higher than those in samples collected from streams draining known antimony occurrences.

BUREAU WORK:

Results from 2 samples (5483-84) are listed in table C-58. Anomalous antimony, gold, and silver were detected. The area was overflown in 1982, but no visual anomaly could be identified from the air. Low mineral development potential.

REFERENCES:

This report.

TABLE C-58. - ANALYTICAL RESULTS - Kenai Lake Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5483	Alluvium	StrSed	NA	0.05	0.55	47	25	105	25	ND	ND	ND	215	ND	ND	ND
5484	Alluvium	Pan Conc	NA	15.37	8.5	56	110	130	40	ND	ND	ND	ND	ND	ND	2 very fine colors recovered from a 1 pan sample.

NAME (other names): Vindicator Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward B-8 SE 1/4 Sec 13 T 4N R 3W

Meridian: Seward

Geographic: This occurrence is located on the west side of Kenai Lake at an elevation of about 600 ft approximately 3 miles north of the power-house.

REFERENCE NUMBERS:

Map
S-235

Kx
289

Tysdal
65

MAS
T2T

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1958 - Originally located by James Dunmire and Sherman Smith (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

Searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Vindicator Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward B-8 SE 1/4 Sec 13 T 4N R 3W

Meridian: Seward

Geographic: This occurrence is located on the west side of Kenai Lake at an elevation of about 600 ft approximately 3 miles north of the power-house.

REFERENCE NUMBERS:

Map
S-235

Kx
289

Tysdal
65

MAS
T2T

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1958 - Originally located by James Dunmire and Sherman Smith (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

Searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): K & T Prospect
(Victory)

COMMODITIES: Sb

LOCATION: Quadrangle: Seward B-7 NW 1/4 Sec 8 T 4N R 2W

Meridian: Seward

Geographic: This prospect is located on Kenai Mountain
on the northeast side of Kenai Lake 2 1/2 miles
southeast of the mouth of Quartz Creek at an
elevation of 1,450 ft.

REFERENCE NUMBERS:

Map
S-236

Kx
24

Tysdal
64

MAS
T22

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1951 - Located by William Knaack (6).

1953 - Report of Investigation written by James A. Williams (200).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a small trench.

GEOLOGIC SETTING:

Mineralization consists of a fractured and altered felsic dike averaging 2-ft wide and traceable for at least 500 ft along strike. The dike strikes N5°W, dips 70°E, and is recemented by quartz stringers containing disseminated grains and massive stringers of stibnite. Anomalous silver and copper values have been obtained.

BUREAU WORK:

Several samples were collected at this prospect in 1980. Stream sediment samples were collected along the north shore of Kenai Lake in order to determine the extent of mineralization. Anomalous antimony was detected in sediments collected from gullies draining exposed mineralization. The mineralization does not appear to be extensive at the surface. The prospect is believed to have little potential for development unless the precious metals content increases with depth. Results from eight samples (4791-78) collected by the Bureau and from two previously taken by Williams (200) are listed in table C-59. Low mineral development potential.

REFERENCES:

6, 27, 88, 108, 184, 191-192, 200

TABLE C-59. - ANALYTICAL RESULTS - K & T Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Hg	
4791	Fel Plut Q.V.	Chip	2 ft	<.03	0.55	133	89	53	600	ND	9	ND	3860	ND	ND	<1	Main structure.
4792	Fel Plut Q.V.	Chip	9 in.	<.03	2.3	13	33	56	745	ND	4	ND	47	ND	ND	<1	Parallel dike.
4793	Q.V.	Grab	NA	<.03	3.3	14	20	57	500	ND	1	ND	250	ND	ND	<1	Parallel dike.
4794	Fel Plut	Chip	3 ft	<.03	2.2	8	21	38	600	ND	1	ND	345	ND	ND	<1	Parallel dike.
4795	Fel Plut	Chip	2 ft	<.03	0.4	720	5	84	ND	ND	ND	ND	325	ND	ND	ND	Parallel dike.
4796	Fel Plut	Chip	8 ft	<.03	0.21	ND	ND	ND	ND	ND	ND	ND	145	ND	ND	ND	Located 300 ft north.
4797	Sed.	StrSed	NA	<.03	0.11	ND	ND	ND	ND	ND	ND	ND	105	ND	ND	ND	ND
4798	Sed	StrSed	NA	0.05	0.5	ND	ND	ND	ND	ND	ND	ND	105	ND	ND	ND	ND
Williams data	ND	Chip	24 in.	Nil	Trace	ND	ND	ND	ND	ND	ND	ND	4.38%	ND	ND	ND	ND
Williams data	ND	Chip	14 in.	Trace	Trace	Nil	ND	ND	ND	ND	ND	ND	1.70%	ND	ND	ND	ND

NAME (other names): Good Luck Prospect
(Rec. 1 & 2)

COMMODITIES: Limestone

LOCATION: Quadrangle: Seward B-8

1/4 Sec 4 T 4N R 4W

Meridian: Seward

Geographic: Two limestone exposures occur along the Russian River trail east of Russian River and 1/2 and 1 1/4 mile north of Lower Russian Lake, respectively.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-237	336, 337	61	T39	AA014999- AA015010	NA
	339, 498				

HISTORY & PRODUCTION:

1965 - Located by James Dunmire and others (6).

1976 - Relocated by Sherman Smith (194).

1982 - Application for a road permit and an operation plan submitted to the U.S. Forest Service. The owner plans to sell the limestone for agricultural purposes (195).

No recorded production.

RESOURCES:

Southern Deposit : 80,000 tons from Gordon Herreid (71).

Northern Deposit : 16,000 tons from Gordon Herreid (71).

OPERATING DATA:

Workings consist of a small prospect pit in the southern deposit. The northern deposit has been drilled.

GEOLOGIC SETTING:

Mineralization consists of two travertine deposits resting on interbedded slate and graywacke country rock. The southernmost deposit is banded, 2- to 6-ft thick, and rests upon 4 ft of breccia composed of angular limestone and bedrock fragments. This deposit is reported to cover an area of at least 500 x 1,000 ft and dips parallel to the hill slope. The northern deposit is up to 9-ft thick, buff colored, and wormy in appearance. Some portions are vuggy and/or poorly banded. These deposits appear to be relatively recent (post glacial) spring deposits. Additional deposits likely occur in the area.

BUREAU WORK:

The two deposits were briefly examined in 1982. Their description by Gordon Herreid in 1967 seems accurate. Two samples (7164, 7165A) of the limestone were collected for analysis. Semiquantitative emission spectrometer results indicate the presence of trace amounts of iron, manganese, and copper with significant silica (5-10 pct) and magnesium (0.1 to 0.3 pct) present. Partial results are shown on table C-60. High mineral development potential as a source of agricultural limestone for a small operation.

REFERENCES:

6, 71, 184, 191-192, 194-195

TABLE C-60. - ANALYTICAL RESULTS - Good Luck Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7164	Limest.	Grab	NA	ND	ND	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7165A	Limest.	Grab	NA	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7165B	Limest.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Black Devil Occurrence
(Lyngholm)

COMMODITIES: Sb

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 31 T 5N R 2W
Meridian: Seward
Geographic: This occurrence is reported to be located
on the divide between Dry creek and Kenai
Lake at an approximate elevation of 800
ft (191).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-238	506	63	T23	NA	NA

HISTORY & PRODUCTION:

1976 - Located by James Spearin (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization is reported (108) to consist of a highly fractured and altered dike 6- to 9-ft wide in slate. The intrusive is recemented by quartz stringers containing disseminated acicular crystals and stringers of stibnite. Nearby quartz veins are also reported to contain stibnite.

BUREAU WORK:

Searched for but not located in 1980. An examination of the K & T Antimony prospect (S-236) was made in 1980 by the Bureau. This occurrence is believed to be similar in origin and likely occurs along a continuation of the same dike. Low mineral development potential.

REFERENCES:

6, 27, 65, 108, 184, 191-192, 194

NAME (other names): Snowshoe Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward B-7 NW 1/4 Sec 31 T 5N R 2W
 Meridian: Seward
 Geographic: This occurrence is reported to be located near
 the mouth of Dry Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-239	389	62	T24	NA	NA

HISTORY & PRODUCTION:

1970 - Located by Don Brown (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

No geologic data.

BUREAU WORK:

Placer samples were collected from Dry Creek during 1980 by the Bureau. However, this occurrence was not located. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Goodnews Prospect
(Wheelbarrow Lode)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward B-8 NE 1/4 Sec 29 T 5N R 2W
Meridian: Seward
Geographic: Located at an elevation of approximately
800 ft on a small north-flowing tributary
to Crescent Creek 1 mi northeast of Dry
Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-240	5T5	NA	NA	NA	NA

HISTORY & PRODUCTION:

1912 - Staked by Lars Larson (6).

1938 - Relocated by Loren Schmid (6).

1977 - Relocated by Edward E. Ellis (6).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a caved adit of unknown length.

GEOLOGIC SETTING:

A specimen of the ore brought in by the current owner contained arsenopyrite, pyrite, and chalcopyrite. A grab sample, collected by the owner from the dump, is reported (personal communication) to have contained 0.29 oz gold/ton and 0.04 oz silver/ton.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191

NAME (other names): Crescent Lode #1-4
Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward C-7
Meridian: Seward

SW 1/4 Sec 22 T 5N R 2W

Geographic: This claim group is located on the south side
of Crescent Creek approximately 2 mi east of
Kenai Lake.

REFERENCE NUMBERS:

Map
S-241

Kx
NA

Tysdal
NA

MAS
NA

BLM
AA024673-76

MS
NA

HISTORY & PRODUCTION:

1978 - Location notice filed (194).

1981 - Evidence of assessment filed by Edwin and Louise Warfle (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

Not searched for. Undetermined mineral development potential.

REFERENCES:

194

NAME (other names): Nakoa Lode Prospect COMMODITIES: Ag

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 15 T 5N R 2W
 Meridian: Seward
 Geographic: This prospect is located on the south side of
 Daves Creek approximately 1 1/2 mile west of
 the Seward "Y" at an elevation of about 650 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-242	535	NA	NA	AAU24667-	NA
				AA024672	

HISTORY & PRODUCTION:

No reference to this prospect was found in the literature. However, local residents report that prospecting of the claims occurred prior to construction of the new Seward Highway (before 1955).

1978 - Located by Edward Ellis and Reggie Grife (194).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Workings consist of an old cabin, dump, stripping, and several prospect pits.

GEOLOGIC SETTING:

Mineralization consists of a longitudinal quartz vein up to 4-ft wide traceable along strike for 300 ft. The country rock is slate with foliation striking N12°E and dipping vertical. Selected quartz contains slate fragments, pyrite, and minor galena. High silver assays (up to 56 oz/ton) and anomalous tin, chromium, and lead values are reported by the current owner. Bureau sampling did not confirm this data.

BUREAU WORK:

This prospect was briefly examined in 1979 at which time three samples of the vein were collected. No gold or silver were detected in the veins. Data from Bureau samples (4410-4412) and from 4 samples collected by the owner are listed in table C-61. Mineralization appears to be sporadic and generally low in grade. Low mineral development potential.

REFERENCES:

6, 79, 194

TABLE C-61. - ANALYTICAL RESULTS - Nakoa Lode Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Cr	
4410	Q.V.	Chip	4 ft	<.02	<.2	40	5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
4411	Q.V.	Chip	6 in.	<.02	<.2	5	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
4412	Q.V.	Chip	1 ft	<.02	<.2	5	20	40	ND	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Yellow Jacket Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward C-8

SE 1/4 Sec 9 T 5N R 2W

Meridian: Seward

Geographic: Located on Quartz Creek 1 mile below its
junction with Devils Creek.

REFERENCE NUMBERS:

Map
S-243

Kx
114

Tysdal
60

MAS
195
196

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1908 - Located (108).

1911 - 35 ft crosscut present (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

A 35 ft adit was reported (108).

GEOLOGIC SETTING:

Mineralization is reported to consist of a quartz vein 6-in. to 3-ft thick traceable for 1,500 ft. Grade is reported to be low with assays to 0.4 oz gold/ton (108).

BUREAU WORK:

Searched for but not located in 1980. Undetermined mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192

NAME (other names): Kaffir, Buster Prospects COMMODITIES: Au, Ag, As
(Fairman-Madison, Tina
Marie, Charlie Horse)

LOCATION: Quadrangle: Seward C-7 NE 1/4 Sec 9 T 5N R 2W
Meridian: Seward
Geographic: The Kaffir vein is located 300 ft above the
junction of Quartz and Devils Creeks on the
east side of Quartz Creek. The Buster vein
occurs 1/8 mile below the junction on the
left (?) bank of Quartz Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-244	174	59	195, 196	AA03T705-14	NA
				AA941694	
				AA947910	

HISTORY & PRODUCTION:

- 1909 - Discovered and located by William Fairman and John Madison (108).
- 1911 - Development work consisted of a 20 ft adit and open cuts (108).
- 1966-81 - Fairman-Madison claims owned and prospected by Edgar Curtis (6).
- 1980 - Location notice for Tina Marie claim filed by M. Rasmussen and C. Pfeifer (194).
- 1981 - Purchased and prospected by Robert Kelley. Assessment filed (194).
- 1982 - Location notice filed for Charlie Horse claim by M. Rasmussen and C. Pfeifer (194).

No recorded production. Minor production possible from the Kaffir vein.

RESOURCES: ND

OPERATING DATA:

A caved adit reported to be 20-ft long occurs on the Kaffir prospect about 40 ft above stream level (108).

GEOLOGIC SETTING:

Mineralization at the Buster prospect consists of quartz lenses and veins up to 18-in. thick containing arsenopyrite and gold. Mineralization at the Kaffir prospect consists of quartz lenses up to 1-ft thick in slate and metasandstone. Metallic minerals include arsenopyrite, chalcopyrite, galena, pyrite, pyrrhotite, sphalerite, and gold. Similar veins have been identified on Quartz Creek during placer mining but none have contained appreciable gold values. Veins appear to be thin, discontinuous and generally low in grade.

BUREAU WORK:

Stream sediment samples, bulk placer samples, and quartz vein samples have been collected on Quartz Creek, by the Bureau, from the Tina Marie claim (5889, 5389, 5739). A quartz vein sample from the Kaffir vein containing considerable arsenopyrite was given to the Bureau by the current owner of the claim (5749A). Table C-62 lists data available from samples (5388, 5389, 5739, 5749A, and 7190) collected in the vicinity of these prospects. Low mineral development potential.

REFERENCES:

6, 65, 85, 87-88, 108, 182, 184, 191-192, 194

TABLE C-62. - ANALYTICAL RESULTS - Kaffir-Buster Prospects

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5388	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Tina Marie Claim.
5389	Q.V.	Grab	NA	0.23	0.53	10	19	42	165	ND	<2	ND	ND	ND	ND	Tina Marie Claim.
5739	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Tina Marie Claim.
5749A	Q.V.	Grab	NA	3.9	1.9	7	36	31	145000	ND	ND	ND	ND	ND	ND	Fairman-Madison Kaffir Vein.
7190	Q.V.	Grab	NA	<.03	1.9	11	13	67	26	ND	ND	ND	ND	ND	ND	Tina Marie Claim.

NAME (other names): Golden Zenith Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward C-7

1/4 Sec 3,10 T 5N R 2W

Meridian: Seward

Geographic: These claims are located on Quartz Creek about
1/2 mi above its junction with Devils Creek.

REFERENCE NUMBERS:

Map
S-245

Kx
353

Tysdal
NA

MAS
NA

BLM
AA04843-44

MS
NA

HISTORY & PRODUCTION:

1980-81 - Location notice filed by Milo and Winifred Flothe (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of quartz veins similar to those exposed on the Kaffir, Buster, and Tina Marie properties (see S-244).

BUREAU WORK:

Not searched for. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Lois Lode Occurrence COMMODITIES: Au, Ag
(John's Creek Lode)

LOCATION: Quadrangle: Seward C-7 NE 1/4 Sec 2 T 5N R 2W
Meridian: Seward
Geographic: The claim is reported to be located on John's
Creek east of the Seward Highway.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-246	5T	58	20T	AA047567- AA047572	NA

HISTORY & PRODUCTION:

1954 - Originally located by Roland Dailey (6).

1981 - Relocated by Robert Arney (194).

1982 - Located by Roger Moore and others (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

The general location of this occurrence was visited by the Bureau in 1979. Evidence of placer prospecting was found and some color was panned from alluvial gravels. However, no workings or exposed quartz veins were located. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192, 194

NAME (other names): J & J Occurrence

COMMODITIES: Au?

LOCATION: Quadrangle: Seward C-7

1/4 Sec 31,32 T 6N R 2W

Meridian: Seward

Geographic: These claims were reported to have been located near the headwaters of John's Creek (194).

REFERENCE NUMBERS:

Map
S-247

Kx
NA

Tysdal
NA

MAS
NA

BLM
AA037654-56

MS
NA

HISTORY & PRODUCTION:

1978 - Staked by James White (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Several quartz-calcite veins occur along the ridge at the headwaters of Johns Creek. Veins examined by the Bureau in 1982 strike N40°W and dips 57°SW. No visible sulfide could be identified in any of the veins. The country rock consists of interbedded metasandstone with lesser slate.

BUREAU WORK:

Two samples (7195, 7196) were collected in the reported vicinity of these claims. Data are listed in table C-63. Low mineral development potential.

REFERENCES:

194

TABLE C-63. - ANALYTICAL RESULTS - J & J Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7195	Q.V.	Grab	NA	<.03	0.3	5	8	19	<10	ND	ND	ND	ND	ND	ND	ND
7196	Q.V.	Grab	NA	<.03	0.1	9	7	24	<10	ND	ND	ND	ND	ND	ND	ND

ND no data

NAME (other names): Juneau Lake Occurrence COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward C-8 NW or NE 1/4 Sec 29 T 6N R 3W
Meridian: Seward
Geographic: Located at an elevation of about 2,800 ft,
1 mile east of the north end of Juneau Lake.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-248	NA	47	NA	NA	NA

HISTORY & PRODUCTION:

1978 - New occurrence first reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

Prospect pits are reported to occur nearby (184).

GEOLOGIC SETTING:

Mineralization consists of iron-stained, vuggy quartz veins in sandstone. Significant mineralization has not been detected.

BUREAU WORK:

Searched for in 1980 but not located. Undetermined mineral development potential.

REFERENCES:

184

NAME (other names): McMillan Prospect
(Columbia, Ophir)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-7
Meridian: Seward

SW 1/4 Sec 23 T 6N R 2W

Geographic: The workings are located on the south side of the divide south of Slate Creek at elevations between 3,200 and 3,400 ft approximately 1 1/4 mi west of the Seward Highway.

REFERENCE NUMBERS:

Map
S-249

Kx
119

Tysdal
57

MAS
192

BLM
AA042005
AA042006

MS
NA

HISTORY & PRODUCTION:

1908 - Originally located by Totten and Gaydon (182).

1910-17 - Development performed by Imhoff, Wiedlich, and Saulsbury.
A small prospect mill was installed and several tons of ore were milled (182).

1922 - Restaked by McMillan who held them until at least 1931 (182).

1980 - Relocated by Jerry D. Newell (194).

No reported production; estimated production approximately 25 oz.

RESOURCES:

N-S vein : 37 tons, 0.739 oz gold/ton, 0.55 oz silver/ton.
N20°W vein : 13 tons, 2.2 oz gold/ton, 0.9 oz silver/ton.
NE vein : 200 tons, 0.4 oz gold/ton, 0.27 oz silver/ton.

OPERATING DATA:

Workings consist of an accessible adit 170-ft long (fig. C-20) at an elevation of 3,300 ft, a caved trench located 1/4 mi SW of the adit at an elevation of 3,400 ft, and a trench 500 ft west of the portal at an elevation of 3,200 ft. Other prospect pits occur in the area.

GEOLOGIC SETTING:

Mineralization consists of several 3-in. to 2-ft wide quartz veins in N10-25°E striking 45-70°W dipping interbedded slates and coarser metaclastics. Mineralized veins are exposed in at least 4 locations in a 1/2-mi wide belt near the top and along the southeast flank of the divide south of Slate Creek. These veins are similar to other veins exposed in a 1-1/2 mi wide mineral belt which parallels the Gilpatrick Dike and extends from south of Slate Creek to Frenchy Creek and possibly beyond. Three veins are exposed in the McMillan adit. Two intersecting veins exposed in the adit approximately 75 ft from

the portal contain the most visible mineralization. One vein striking north and dipping 75°E contains considerable galena, sphalerite, and visible gold throughout a thickness varying from 1 to 2 ft over a 6 ft strike length. An assay of 0.739 oz gold/ton and 0.55 oz silver/ton was obtained (5364). The second vein strikes N20°W, dips 55°E, averages 3-in. thick, and contains arsenopyrite, galena, and considerable free gold with assays up to 5.04 oz gold/ton and 1.2 oz silver/ton. The best gold assays were obtained along the intersection of these two veins where the second vein cuts off the first. Both veins are terminated at their southern ends by a N40°E striking, 80°SE dipping fault of undetermined sense of movement. A third vein 6 to 12-in. wide occurs along the footwall of a 6-ft wide N65°E striking, 70°NW dipping fault zone having a left-lateral horizontal component of movement which cuts off veins 1 and 2 above at their northern ends. They were apparently not picked up on the hangingwall side of the fault by the early miners. A composite chip sample along the footwall of this vein assayed approximately 0.4 oz gold/ton and 0.27 oz silver/ton (4418). However, this may have included quartz from the intersecting high grade N-S and N20°W striking veins.

Several other veins were sampled within a 1/2 mi radius of the main adit. Favorable assays were obtained from a poorly exposed quartz vein in a caved trench located 1/4 mile southwest of the adit by trail and from a well exposed, N45°W striking, 75°NE dipping, vein averaging 1-ft thick which is located in a prospect trench 600 ft by trail SW of the main adit. This second vein appears to be cut off by a left-lateral N25°E striking 65°NW dipping fault along its SE end and possibly by a similar fault about 50 ft along strike to the northwest. Both veins contain galena, minor arsenopyrite, and visible gold.

BUREAU WORK:

The Bureau visited this prospect in 1979 and 1980 at which time samples were collected and a sketch map (fig. C-20) drawn of the main workings. Results from eighteen samples (4417-4422, 5361-5370, 5385, 5482) collected at the prospect are listed in table C-64. Additional evaluation of the area is warranted because of the presence of several veins containing significant free gold. Moderate mineral development potential for a small mine.

REFERENCES:

6, 79, 182, 184, 191-192, 194

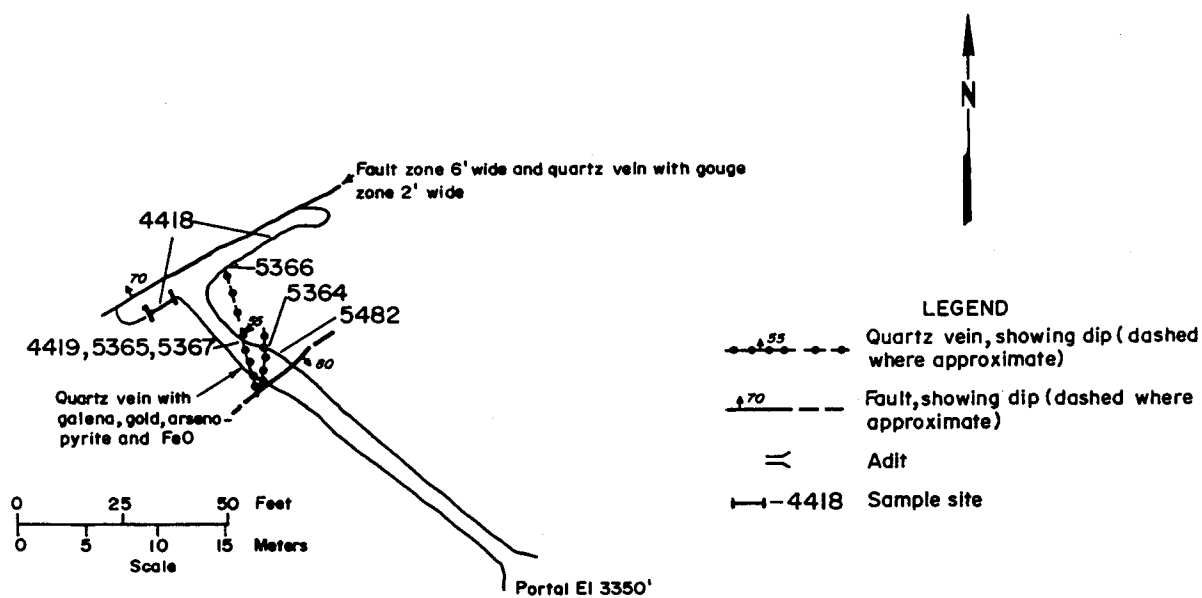


FIGURE C-20. Sample location map for the McMillan Prospect (S-249).

TABLE C-64. - ANALYTICAL RESULTS - McMillan Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
4417	Q.V.	Grab	NA	0.31	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Caved trench 1/4 mi SW of adit.
4418	Q.V.	Grab	NA	14	9.3	30	2550	360	ND	ND	ND	ND	ND	ND	ND	ND	Main adit NE vein.
4419	Q.V.	Grab	NA	0.12	0.4	15	135	550	ND	ND	ND	ND	ND	ND	ND	ND	Main adit N-S vein
4420	Q.V.	Grab	NA	0.05	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Prospect pit 600 ft west of adit.
4421	Q.V.	Grab	NA	<.02	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Caved pit 1/4 mi NE adit.
4422	Q.V.	Grab	NA	0.07	<.02	35	5	40	ND	ND	ND	ND	ND	ND	ND	ND	Caved pit 1/4 mi NE adit.
5361	Q.V.	Grab	NA	<0.02	<.2	55	20	120	ND	ND	ND	ND	ND	ND	ND	ND	Vein located 1/2-3/4 mi SW of adit.
5362	Q.V.	Grab	NA	11	3	150	290	340	ND	ND	<2	ND	15	ND	ND	ND	Caved trench 1/4 mi SW adit.
5363	Sed.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Caved trench 1/4 mi SW adit.
5364	Q.V.	Chip	16 in.	.739*	0.55*	75	2700	1400	ND	ND	ND	ND	ND	ND	ND	ND	Main adit N-S vein
5365	Q.V.	Chip	4 in.	1.485*	0.8*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Main adit N20°W vein.
5366	Q.V.	Chip	6 in.	.121*	0.19*	5	85	155	ND	ND	ND	ND	ND	ND	ND	ND	Main adit N20°W vein.
5367	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Main adit N-S vein
5368	Q.V.	Chip	24 in.	0.03*	tr	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Prospect tr. 600 west of adit.
5369	Q.V.	Select	NA	0.83*	1.1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Prospect tr. 600 ft west of adit.
5370	Q.V.	Grab	NA	.035*	0.13*	40	1250	55	ND	ND	ND	ND	ND	ND	ND	ND	Prospect tr. 600 ft west of adit.
5385	Q.V.	Chip	18 in.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein located 300 ft NE of adit.
5482	Q.V.	Grab	NA	5.04*	1.7*	76	3600	5000	425	ND	ND	ND	ND	ND	ND	ND	Main adit N20°W vein.

* ounces per ton

COMMODITIES: Au, Ag

NE 1/4 Sec 20 T 6N R 2W

Meridian: Seward

Geographic: Located on the divide between Henry and Devils Creek at an elevation of 4,000 ft.

REFERENCE NUMBERS:

Map
S-250

Kx
105

Tysdal
48

MAS
215

BLM
NAMS
NA

HISTORY & PRODUCTION:

1915 - First report of occurrence in the literature (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

Several prospect pits occur along the dike.

GEOLOGIC SETTING:

Mineralization consists of a fractured felsic dike containing minor arsenopyrite. Quartz occurs along the fractures. The dike strikes N30°E, dips 30°NW, averages 2 1/2-ft thick and can be traced for 1,000 ft along strike.

The host rock is a slate which contains numerous arsenopyrite-bearing quartz stringers adjacent to the dike.

BUREAU WORK:

This prospect was examined in 1980 and one sample was collected (5278). Data are listed on table C-65. Low mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192

TABLE C-65. - ANALYTICAL RESULTS - Henry Creek Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5278	Fel Plut	Disc. Chip	2 1/2 ft	0.31	2.8	ND	ND	ND	200	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Swetmann Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7

NE 1/4 Sec 14 T 6N R 2W

Meridian: Seward

Geographic: Located on the north side of Slate Creek about
1 1/2 mi west of the Seward Highway at elevations
between 3,200 and 3,850 ft.

REFERENCE NUMBERS:

Map
S-251

Kx
T20

Tysdal
53

MAS
T93

BLM
NA

MS
NA

HISTORY & PRODUCTION:

Some development work reported prior to 1930.

1930-31 - 120-ft adit completed.

Low grade samples collected by Tuck (182).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a partially caved 120-ft adit at an elevation of 3,700 ft, a caved 260-ft adit at 3,200 ft and prospect pits.

GEOLOGIC SETTING:

Mineralization consists of a quartz vein up to 12-in. wide striking N5°W and dipping 60°W. Metallic minerals include arsenopyrite, pyrite, chalcopyrite, galena, and minor gold. Secondary copper minerals including malachite, azurite, and possibly chalcocite occur locally. The host rock consists of interbedded metasiltstone and sandstone striking N7°W and dipping 70-75°W.

BUREAU WORK:

Two samples were collected, by the Bureau in 1982 (7161, 7162). Table C-66 lists the data obtained. The 120-ft adit apparently does not intercept mineralization. Low mineral development potential.

REFERENCES:

6, 12, 124, 182, 184, 191-192

TABLE C-66. - ANALYTICAL RESULTS - Swetmann Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
7161	Q.V.	Con Chip	5 in.	<0.03	0.8	200	115	180	30	ND	ND	ND	ND	ND	ND	ND	ND
7162	Q.V.	Grab	NA	0.005*	<0.2*	490	245	260	97	ND	4	ND	3	ND	ND	ND	Open cut above adit.

* ounces per ton

NAME (other names): Hatcher Prospect COMMODITIES: Au, Ag
(Slate, Meat-in-the-Pot,
Dorothy, Eurika,
Discovery)

LOCATION: Quadrangle: Seward C-7 SW 1/4 Sec 23 T 6N R 2W
Meridian: Seward
Geographic: Located on Slate Creek 3/4 mi west of the
Seward Highway. The workings occur on both
sides of the creek but are mostly between
3,100 and 3,400 ft above sea level southwest
of the collapsed mill buildings in the NE 1/4
of Sec 23.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-252	19,390	55	T90	AA30232	NA
	464			AA30235	

HISTORY & PRODUCTION:

- 1909 - Claims staked and open cuts made by William Fairman and John Madsen (65).
- 1933 - Open cuts reported (182).
- 1940 - Installation of a new milling unit by the United Mining and Development Co. The equipment consisted of a jaw crusher, 25 ton Denver Ball mill, a Denver jig, assay equipment, and a new portable compressor. Twelve men under the direction of Mr. McAllan were reported to be working on the property (136).
- 1955-65 - Prospecting and minor development by Fred Henton reported (6).

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

The full extent of the workings developed on this property by the United Mining and Development Co. is unknown. Production records confirm that the mill was used to treat ore obtained from the Gilpatrick property (184). A 75-ft trench oriented N10°E occurs at 3,100 ft and a 25-ft trench oriented N45°E occurs at 3,400 ft on the south side of Slate Creek southwest of the mill.

GEOLOGIC SETTING:

Several quartz veins varying in thickness and attitude occur in metamorphosed sandstones and slates spacially associated with the southern extension of the Gilpatrick Dike. The country rock strikes north and dips 70°W. One vein is reported to be 6- to 14-in. wide. Samples of two quartz veins, which were not exposed, were collected from dumps and found to contain galena, sphalerite, arsenopyrite, and pyrite.

BUREAU WORK:

Two samples were collected from the 3,100 ft and 3,400 ft level trenches in 1980 (5388, 5387). Results are listed in table C-67. Undetermined mineral development potential.

REFERENCES:

6, 65, 136, 182, 184, 191-192, 194

TABLE C-67. - ANALYTICAL RESULTS - Hatcher Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)													Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	Te	
5386	Q.V.	Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample lost during shipment.
5387	Q.V.	Grab	NA	2.6	10.5	34	2200	740	10	ND	<2	ND	ND	ND	ND	2	

NAME (other names): Gilpatrick Dike Mine

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

NE 1/4 Sec 14 T 6N R 2W

Geographic: Located on the south side of the divide between Summit and Slate Creeks between 2,400 ft and 3,400 ft above sea level about 1 mi west of the Seward Highway (figure C-21).

REFERENCE NUMBERS:

Map
S-253

Kx
26
79

Tysdal
54

MAS
165
189

BLM
AA050T40-49

MS
NA

HISTORY & PRODUCTION:

1906 - Gold-bearing quartz veins first recognized in Summit-Slate Creek area by J. C. Gilpatrick (108).

1908 - Discovery of mineralized Gilpatrick Dike (108).

1908-1930 - Minor sporadic production under several lease holders (193).

1936 - United Mining and Development Co. took over the property (136).

1937-1948 - Most significant production period (193).

1982 - Location notices filed by Jack K. Vandelaar for the Blind Mule 1-10 claims (194).

Total reported production: 3,545 oz gold, 1,099 oz silver from 3,664 tons of ore (193).

RESOURCES: 2,000 tons - 0.89 oz gold/ton, 0.65 oz silver/ton.

OPERATING DATA:

The Gilpatrick Group originally consisted of seven claims located along the Gilpatrick Dike on the divide between Summit and Slate Creeks (figure C-21). The gravity fed mill, destroyed by an avalanche during the winter of 1979-80, was located in Slate Creek valley. Development work consists of 3 adits at elevations of 2,850, 3,300, and 3,400 ft and numerous prospect pits on the Slate Creek side of the divide and a trench at an elevation of 2,400 ft with additional prospect pits on the Summit Creek side. Only the upper adit is currently accessible. Other workings occur at the Oracle (S-255), Ronan and James (S-256), Summit (S-254), and Swetmann (S-251) properties nearby.

J. C. Roehm (136), while working for the Territorial Department of Mines, visited the mine in 1941 and described the operations occurring at that time.

"Operations were resumed on March 26 of this season with one shift in the mine. June 3 the mill resumed operations and 120 tons of ore was milled during a period of 29 days. A total of seven men have been employed, five of which were in the mine and two in the mill.

Underground development to date this season consisted of 170 ft of drift and some stoping. Development work has been confined to No. 2 tunnel, elevation 3,300 ft. This tunnel, driven along the Gilpatrick dike, has a length of 470 ft. A raise 230 ft in from the portal extends to No. 3 tunnel above. The ore mined and milled by this company has been from a small ore shoot between No. 2 and No. 3 tunnels. Two small crosscuts, one 40 ft and one 20 ft, with drift, raise and stope, make up the workings on this level. On date of visit the ore and dike both were lost in the end of No. 2 tunnel. Since an offset of 60 ft is shown on the surface of the dike, due to a South fold rather than fault displacement, a crosscut into the footwall near the face of the tunnel has been started. The ore bodies occur as curved lenses alongside the Gilpatrick dike and in south plunging structures formed by the South folding of the dike in the slate graywacke sediments.

The mill has been nearly completely refurnished since its original construction two years ago. Two Fairbanks Morse diesel engines, one 25 hp and the other 15 hp, furnish power via belt to the main shaft line. The ore is trammed from the mine to the mill via a 3,000-ft aerial gravity tram with 7/8-in cable, 5/8-in carrier cable, and 700-lb. buckets. Thence it is dumped into a 26-ton ore bin which feeds a 9x12-in Denver crusher with fines passing through a 1/2-in rod grizzly to a 65-ton ore bin below. From this ore bin a Gibson rotary feeder supplies material for the 25-ton Denver Equipment ball mill. The mill grinds to 40-mesh and the flow is pumped with a centrifugal Denver sand pump to a Denver Equipment jig located above the ball mill in which 70 pct of the gold is recovered in a concentrate which is amalgamated in an amalgam barrel. The oversize from the mill is fed to a Denver Equipment rake type classifier with overflow passing over a 30-in x 6-ft plate and oversize returning to mill circuit. The overflow from the jig passes over a 30-in x 5-ft plate and into the classifier."

Considerable development work must have occurred after Roehm's visit as a total of 1,477 oz of gold and 249 oz of silver were produced after 1941 (193).

GEOLOGIC SETTING:

Tuck (182) discussed the Gilpatrick dike mineralization and pertinent structural relationships in some detail.

"The dike ranges in width from 1 to 12 ft, with an average of 4 to 5 ft. It is best exposed in the lower tunnel. Here it lies in slate, the cleavage of which strikes north to $N15^{\circ}E$ and dips $65^{\circ}-85^{\circ}E$. The trend of the dike, which stands vertical, is closely parallel to the cleavage of the slate but in general is a few degrees east of north. The dike is cut by a number of transverse faults that cut across it in a direction $N60^{\circ}E$ and with a dip from $75^{\circ}NW$ to vertical. Along these transverse faults the movement has invariably been the same, so in drifting on the dike and finding it offset, a good general rule is to turn to the right along the fault surface. The relative movement has been such that the north block has moved down and to the right in respect to the south block. In some places where slickensided surfaces indicate a purely vertical movement, the offset to the right can be explained only by assuming that the dike has a steep west dip. The horizontal component of the movement where actually observed is from a few inches to 15 ft.

In addition to these transverse faults there are numerous faults that parallel the dike, as in many places there is several inches of gouge between the dike and the wall rock, and both faces may be highly polished from the movement. Between the lower and middle tunnels there are probably several transverse faults, as the position of the dike is considerably to the right of the point where it should be expected if the strike of the lower tunnel were projected. The middle tunnel as observed at the portal trends $N7^{\circ}W$ and has been driven in massive graywacke.

At the upper tunnel the dike strikes about north and shows a width of at least 10 ft. The west wall has more the character of graywacke. The dike is cut again here by faults that strike $N45^{\circ}-60^{\circ}E$ and stand about vertical.

Associated with the dike and in general parallel with it are quartz veins, 2 to 12 in. in width. At some places these veins lie at the contact of the dike and the country rock; elsewhere they may be separated from the contact by 2 to 10 ft of slate or graywacke. The dike itself has been highly fractured in many places, and the fractures have been filled with vein material. The fractures may be irregular but more commonly have a similar orientation, suggesting that the deformation of the dike is due to a regional stress. The veins and veinlets in the dike range in width from a fraction of an inch to 8 or 10 in; they do not extend from the dike into the country rock but terminate abruptly and are apparently due to the greater brittleness of the dike rock in comparison with the country rock.

The vein filling is predominantly quartz with small amounts of calcite. Contemporaneous with the quartz are small amounts of arsenopyrite, pyrite, galena, sphalerite, and free gold. The massive dike rock contains many well-formed crystals of arsenopyrite. The fracturing of the dike has been highly erratic, and the amount of quartz filling varies greatly from place to place. In some places the dike may contain as much as 35 pct vein material; in others it may be massive and blocky with negligible quartz.

The valuable minerals are in the quartz stringers and veinlets, but the richness is not proportional to the amount of quartz. The tenor is very erratic, although in places free gold is easily visible. Only very thorough sampling as well as systematic development could determine the feasibility of mining the dike."

A northwest striking vein containing significant gold (5644) occurs above the upper level portal indicating that structures in addition to those described above should be examined. This vein parallels the Summit Vein (S-254).

BUREAU WORK:

Surface and subsurface sampling (4429, 4719, 4720, 4783, 5362, 5646-49, 7191) and sketch mapping were done in 1980 and 1981. Currently, the lower 2 adits are caved and inaccessible. The upper level is open and was sketched in order to show structural relationships, geology and sample site locations (fig. C-22). Table C-68 lists the quantitative data available for samples collected from the Gilpatrick claims. Visible gold is readily found in quartz specimens collected from the dumps and from the northwest striking vein exposed above the portal at the upper level (sample 5649).

There is not enough information available to allow meaningful reserve calculations at this property. However, due to its production history, the presence of visible gold in exposed quartz and high assays obtained to date, additional exploration is warranted. Drilling should be used to determine the amount of vein offset along the right lateral structure mapped in the upper level and to determine whether significant enough quantity and quality of mineralization remains to warrant additional development.

REFERENCES:

6, 65, 79, 86-89, 108, 136, 164, 182, 185, 191-194

384.

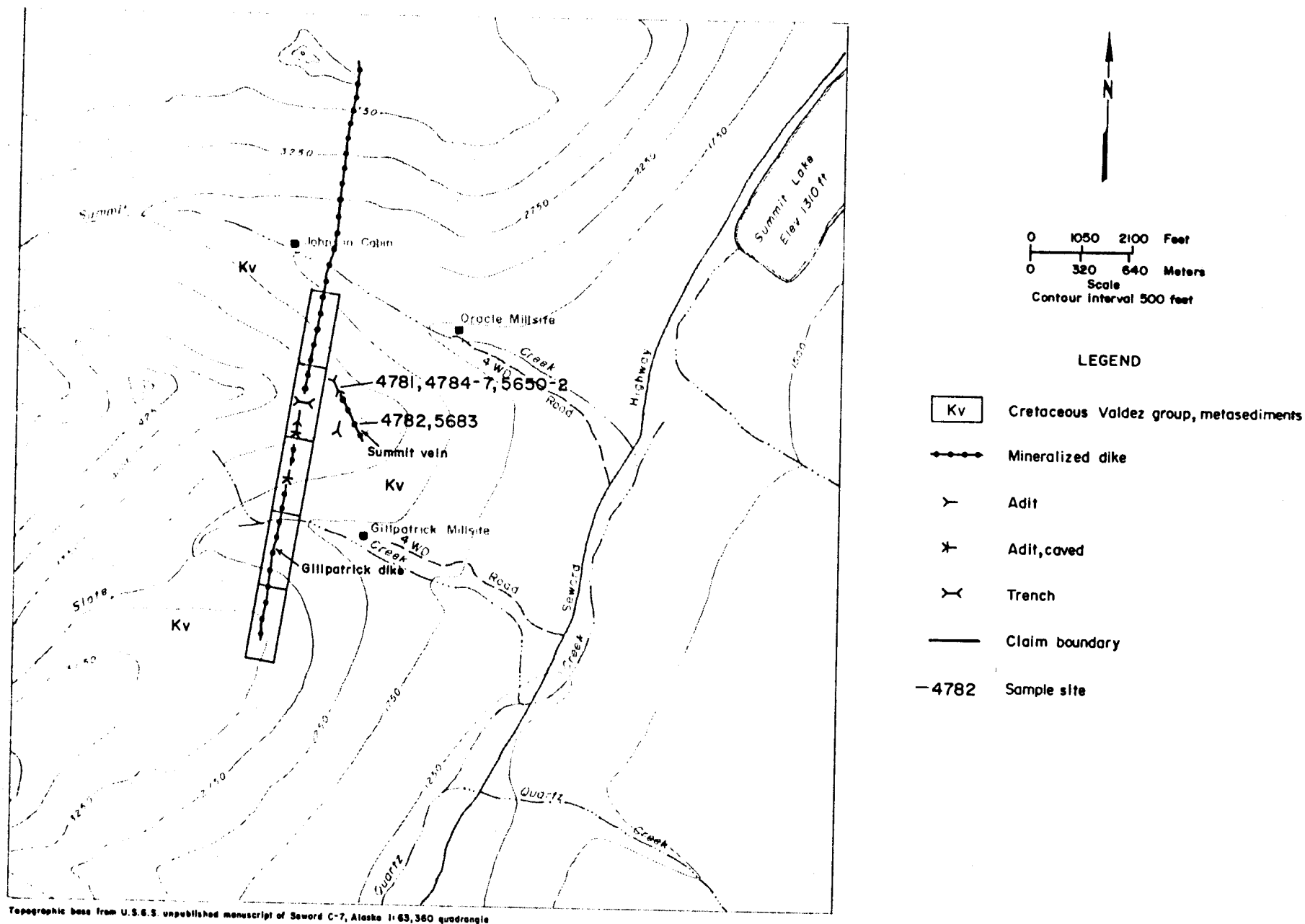


FIGURE C-21. Location map for the Gilpatrick Dike Mine (S-253) and Summit Prospect (S-254).

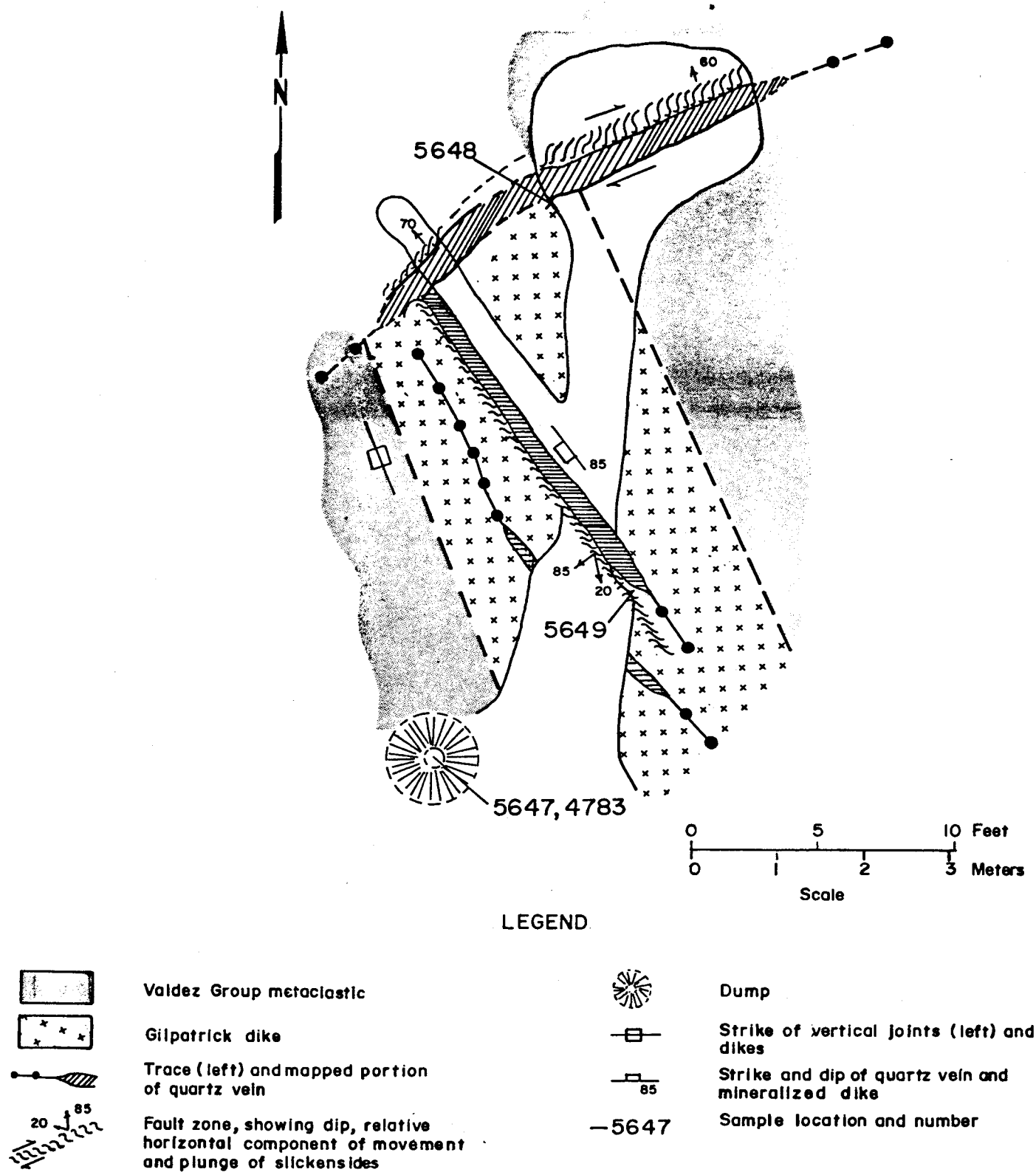


FIGURE C-22. Sample location map for the upper level of the Gilpatrick Dike Mine (S-253).

TABLE C-68. - ANALYTICAL RESULTS - Gilpatrick Dike Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4429	Fel Plut Q.V.	Grab	NA	3.2	0.6	5	245	100	ND	ND	<2	ND	ND	ND	ND	3,300 ft level dump.
4719	Q.V.	Grab	NA	2	<.2	ND	ND	ND	ND	ND	<2	ND	ND	ND	ND	ND
4720	Fel Plut Q.V.	Grab	NA	54	13	ND	ND	ND	ND	ND	<2	ND	ND	ND	ND	ND
4783	Q.V.	Grab	NA	10	7.5	40	1650	660	770	ND	ND	ND	ND	ND	ND	ND
5362	Q.V.	Grab	NA	11	3	150	290	340	ND	ND	ND	ND	ND	ND	ND	ND
5646	Q.V.	Grab	NA	ND 219	ND 85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Not assayed.
5647	Q.V.	Grab	NA	*8.51	*3.2	19	4000	400	890	ND	<2	ND	ND	ND	ND	3,400 ft level dump.
5648	Fel Plut Q.V.	Cont. Chip	14 in.	0.88	0.73	2	45	46	178	ND	<2	ND	ND	ND	ND	3,400 ft level dump.
5649	Q.V.	Cont. Chip	10 in.	16.2 *0.89	11.3 *0.65	9	520	145	280	ND	<2	ND	ND	ND	ND	3,400 ft level portal.
7191	Eluvium	Bulk Placer	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0032 oz gold/ton recovered by sluicing 0.1 yd ³ of elluvium.

* ounces per ton

NAME (other names): Summit Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7

NE 1/4 Sec 14 T 6N R 2W

Meridian: Seward

Geographic: Located along the north side and near the crest of the divide between Slate and Summit Creek at an elevation of about 3,400 ft 1 1/4 mi west of the Seward Highway (figure C-21).

REFERENCE NUMBERS:

Map
S-254

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1931 Referred to by Tuck (182) as the Summit Vein. Apparently this vein was prospected along with several other occurrences in this area during the development of the Gilpatrick Mine.

No recorded production. Minor production possible.

OPERATING DATA:

Workings include trenching at the southeast and northwest ends of the vein exposure.

GEOLOGIC SETTING:

Mineralization consists of a quartz-carbonate vein averaging 12- to 14-in. wide over a strike length of at least 235 ft. The vein strikes N30°W and dips steeply to the northeast. The quartz is locally vuggy and contains galena, arsenopyrite, sphalerite, pyrite, and gold. Visible gold is present and the crushed quartz pans considerable free gold. Host rock is slate and graywacke which shows considerable folding in the area. Axial plane cleavage strikes N20°E and dips vertically. Bedding is locally apparent with N-NE strikes and variable dips from 0 to 90° where it has been dragged along N20°E striking longitudinal faults.

BUREAU WORK:

Surface sampling was done in 1980 and 1981. Table C-69 summarizes the quantitative analyses available for 10 samples (4781-82, 4784-87, 5650-52, 5682) collected by the Bureau. Grades appear to be highest on the northwest end of the vein and to diminish to the southeast. High mineral development potential for a small mine.

REFERENCES:

182

TABLE C-69. - ANALYTICAL RESULTS - Summit Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4781	Q.V.	Grab	NA	111 *2.82	89.2 *1.7	46	8000	340	1250	ND	ND	ND	ND	ND	ND	NW end of vein.
4782	Q.V.	Grab	NA	8.4	0.46	91	1700	450	38	ND	ND	ND	ND	ND	ND	SE end of vein.
4784	Q.V.	Grab	NA	159 *5.15	120 *3.5	22	5000	310	55	ND	ND	ND	ND	ND	ND	NW end of vein.
4785	Q.V.	Cont Chip	18 in.	49.5 *1.18	9 *1.4	140	15000	830	410	ND	ND	ND	ND	ND	ND	NW end of vein.
4786	Metased	Cont Chip	8 in.	0.1	0.85	27	730	930	4350	ND	ND	ND	ND	ND	ND	NW end, hangingwall
4787	Metased	Cont Chip	8 in.	0.13	4	91	50	2400	440	ND	ND	ND	ND	ND	ND	NW end, footwall.
5650	Q.V.	Spec.	18 in.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NW end. Not assayed. Contains visible gold.
5651	Q.V.	Channel	18 in.	*1.35	*0.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NW end, bulk sample.
5652	Q.V.	Channel	18 in.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NW end, crushed and panned. Not assayed. Panned considerable free gold.
5683	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SE end. Not assayed. Contains visible gold.

* ounces per ton

NAME (other names): Heaston-Oracle Mine
(Alaska Oracle)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

SW 1/4 Sec 12 T 6N R 2W

Geographic: Located on Summit Creek about 1 mi west of
the Seward Highway between 1,800 and 3,500
ft above sea level (figure C-23).

REFERENCE NUMBERS:

Map
S-255

Kx
9T

Tysdal
5T

MAS
T9T

BLM
NA

MS
1539
1592

HISTORY & PRODUCTION:

1921 - Originally discovered by Robert B. Heaston (143).

1929 - Patented and optioned to W. E. Dunkle (143).

1930 - Alaska Oracle corporation formed and commenced extensive
development of the property including erection of a mill and
minor production (143).

1930-31 - Extensive sampling of the vein by Alaska Oracle Corporation
(143).

1935 - Ralph Reed picked up the option which had been dropped by the
Alaska Oracle Corporation. He continued development work and
built a new mill (143).

1937-41 - Main production period (193). Current owners are Sybil A. Reed
(Oracle 2) and Harold M. and Judith M. Culver (Oracle
Extension).

Total recorded production is 1,274 oz of gold, 256 oz of silver.
Additional production likely (193).

RESOURCES: ND. Extensive sampling of the vein in the 1,800 and
1,900-ft levels (fig. C-24) by the Alaska Oracle Corporation indicated
values averaged approximately 2 oz gold/ton over a vein length of 150
ft, depth of 110 ft, and width of 14 in. Considerable stoping is
reported to have occurred between the two levels (fig. C-24) during the
1937-1941 production period, which likely resulted in the removal of the
majority of the reserves identified. However, there is no information
indicating that the portion of the shoot which reportedly continues
below the 1,800-ft level was ever developed. There is a good chance
that additional reserves exist in the mine.

OPERATING DATA:

The main workings consist of a 900-ft crosscut, 550 ft of drift, 215 ft
of raise, 25 ft of winze and considerable stoping (125). Two caved
portals, one located on the north side of the creek at 1,800 ft above

sea level 200 ft west of the mill and the other on the south side of the creek at 1,900 ft above sea level 1,000 feet west of the mill, were used to access the workings.

Figure C-24 consists of plan and cross sectional views of the workings compiled from a company mine map prepared by George Nelson (125) in 1931, development descriptions by J. C. Roehm (136, 143) in territorial mine reports written in 1937-1940, and Tuck (182). Several hundred feet of workings on the northern extension of the vein occur on the north side of Summit Creek across from the caved portal to the 1,900-ft level at elevations between 2,000 and 2,400 ft. The portals are caved so that none of these adits could be investigated. However, the main workings were reopened during the summer of 1984 by a lesser. Additional prospect pits and trenching occur on the south side of the creek at elevations as high as 3,500 ft (see S-254 and S-257). The property can be reached from the Seward Highway via an unmaintained mine road which has washed out completely several hundred feet east of the millsite.

GEOLOGIC SETTING:

Tuck (182) describes the geology and mineralogy of the vein in some detail as follows.

"The vein strikes N15°E and has an average dip of 60°W. In width it ranges from a few inches to 3 ft, with an average of about 12 to 14 in. over a length of 175 ft on the lower level. The country rock is interbedded slate and graywacke, in which the bedding is usually very obscure on account of the gradation in texture of the slate to the graywacke. The finer textured phases possess good cleavage, which has a general strike of N15°E and dips ranging from 60°W to 80°E. In the few places where the bedding could be distinguished it is parallel to the cleavage. The graywacke is usually very massive, with only scattered joints.

The vein occupies a fracture along which movement had taken place prior to ore deposition. This fracture in general parallels the structure of the graywacke and slate but here and there deviates from it, so that as a result of the movement along the fracture there is in some places a footwall of graywacke and a hanging wall of slate. It has been thought that these walls determine the position of the vein and that the vein formed at the contact of the slate and graywacke; but this is only a coincidence: the position of the vein was determined by the fracture. As shown by both the upper and the lower levels, the south end of the vein takes a flat roll into the footwall, and in the development work this roll was not followed out. The position of the roll on both levels and the development in the north end of the lower level, where the ore pinches out, suggest that the ore shoot has a rake of 20°-45°SW. Whether the ore feathers out or continues at the point where it takes the flat roll remains to be proved by further development work.

Slickensides and grooves having the same rake as the ore body were observed on the lower level. On both upper and lower levels footwall stringers are common, particularly in the massive graywacke. These stringers or gash veins have the appearance of quartz-filled tension fractures, and their position confirms the impression gained from the fault surfaces that the premineral movement was such that the hanging wall moved to the ore shoot.

Not all the movement occurred prior to the mineralization, as is shown by the slickensided and sheared quartz. The postmineral movement has been in general parallel or closely parallel to the vein, as no transverse faults were observed. The weathering of the vein material has proceeded to depths of 50 to 75 ft below the surface, so that the quartz is very friable and iron-stained.

The minerals contained are arsenopyrite, pyrite, galena, and sphalerite, named in decreasing order of abundance, but in total they probably form only 0.5 pct of the ore. The gangue mineral is chiefly quartz with small amounts of calcite. The pyrite is usually well crystallized and commonly impregnates the wall rock for a few inches. The galena is fine grained and is disseminated in the quartz. The arsenopyrite is commonly euhedral and as a rule is confined to fractures in the quartz. The sphalerite is very scant and is of the ferruginous variety. Chalcopyrite, pyrrhotite, and molybdenite have also been reported. Gold occurs both free and with the sulfides. Free gold is difficult to find in hand specimens, as it is apparently very fine."

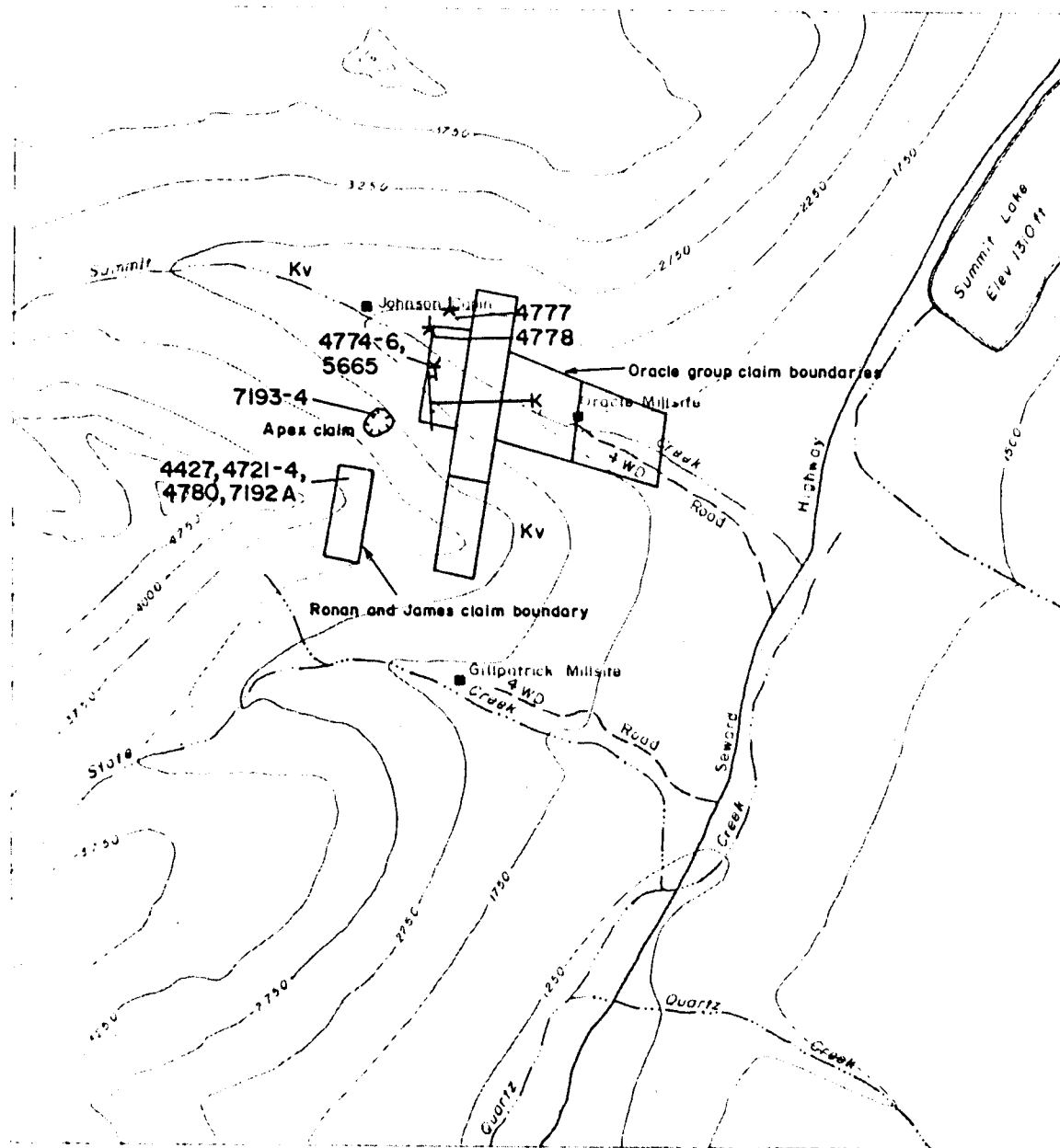
BUREAU WORK:

Surface sampling was done in 1980 and 1981. Quantitative data available for 6 samples (4774-4778, 5665) collected from the Oracle Mine by Bureau crews are listed in table C-70. Sample locations are shown on figures C-23 and C-24. Sample 4774, a channel sample collected across an 8-in. wide exposure of the vein above the collapsed 1,900-ft portal assayed 1.64 oz gold/ton and 0.71 oz silver/ton. Selected samples of the vein were found to contain visible specs of gold generally less than 0.1 mm in diameter, arsenopyrite, pyrite, galena, sphalerite, molybdenite, and minor chalcopyrite.

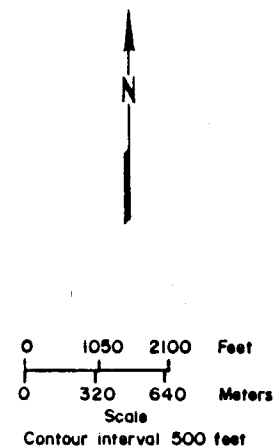
Based upon recorded mine history, indicated grade of the vein, and probable continuation of the vein at depth, additional evaluation of the property appears to be warranted. An attempt should be made to reopen the old crosscut in order to systematically sample the remaining vein exposed in the old workings. If this is not possible drilling would be the least expensive way to ascertain whether the vein continues at depth and to evaluate the characteristics of the host rocks. Further development should include the sinking of a shaft (inclined or vertical) in order to gain access and develop lower levels on the vein. However, the extreme avalanche hazard near the current surface exposure of the vein should be considered prior to construction activities. Avalanches likely account for use of the 900-ft crosscut to reach the vein as that allowed the portal to be located near the mill where the least avalanche hazard exists. High mineral development potential for a small operation.

REFERENCES:

2, 6, 125, 136, 143, 166, 169, 182, 184, 191-193



Topographic base from U.S.G.S unpublished manuscript of Seward C-7, 1:63,360 quadrangle



LEGEND


- Kv Cretaceous Valdez group, metasediments
- * Adit, caved
-  Prospect pit
- 4777 Sample site

FIGURE C-23. Location map for the Oracle and Ronan & James Mines showing sample locations (S-255 and S-256).

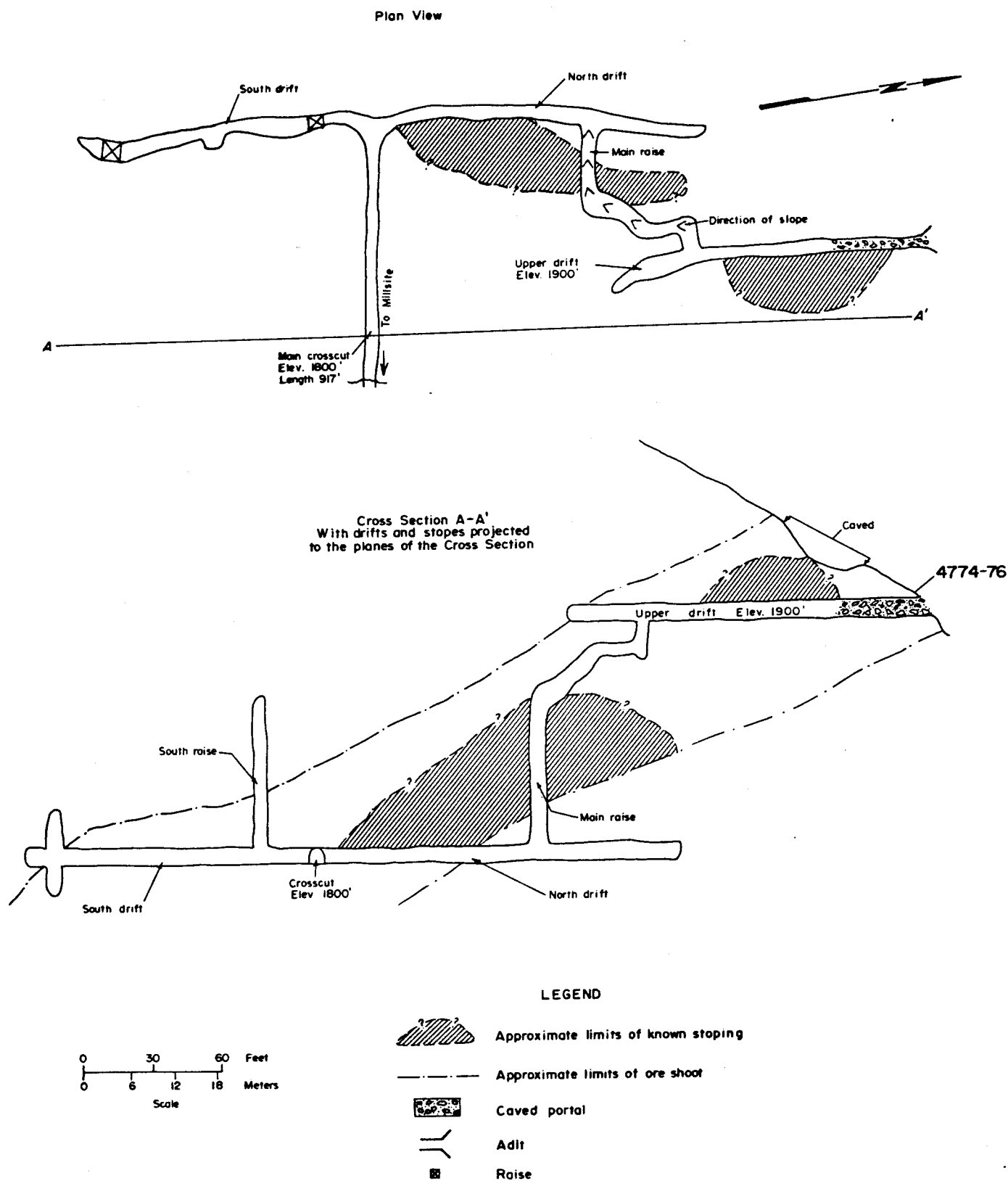


FIGURE C-24. Sketch map of the Oracle Mine workings (S-255).

TABLE C-70. - ANALYTICAL RESULTS - Heaston-Oracle Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
4774	Q.V.	Con Chip	8 in.	*1.64	*0.71	98	1050	66	2500	ND	ND	ND	ND	ND	ND	1,900 ft portal.	
4775	Metsed	Disc Chip	8 in.	0.1	0.44	ND	ND	ND	300	ND	ND	ND	ND	ND	ND	Hangingwall 1,900 ft portal.	
4776	Metsed	Disc Chip	10 in.	1.55	3.0	ND	ND	ND	3650	ND	ND	ND	ND	ND	ND	Footwall 1,900 ft portal.	
4777	Q.V.	Grab	NA	0.55	0.57	3	10	39	15600	ND	ND	ND	ND	ND	ND	2,100 ft adit N side creek.	
4778	Q.V.	Grab	NA	1.4	1.5	44	140	83	2550	ND	ND	ND	ND	ND	ND	2,000 ft adit N side creek.	
5665	Q.V.	Min. Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,900 ft portal visible gold.	

* ounces per ton

NAME (other names): Ronan and James Mines
(Champion, Gladiator
Valerie Marie)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

SE 1/4 Sec 11

NE 1/4 Sec 14 T 6N R 2W

Geographic: Located on the south side of Summit Creek at
an elevation of 3,600 ft 1 1/2 mi west of the
Seward Highway (figure C-24).

REFERENCE NUMBERS:

Map
S-256

Kx
T17

Tysdal
52

MAS
T64

BLM
AA029645

MS
NA

HISTORY & PRODUCTION:

1916 - Leased by Ronan and James, small arrastre mill installed (182).

1916-18 - Ore milled (182).

1931 - Restaked by W. H. Whittlesey (182).

1979 - Relocated as the Valerie Marie claim by James and Jean Burns
(194).

1981 - Assessment filed by James Burnes (194).

Total reported production is 557 oz of gold and 137 oz silver (193).

RESOURCES: The property is reported to have been mined out. Based upon
dump sampling, the mineralization appears to have been high
grade. A search for a vein extension is warranted.

OPERATING DATA:

Workings reportedly consist of a 137-ft crosscut, 210-ft drift, 80-ft
winze and 30-ft shaft (90). They are presently inaccessible due to
caving.

GEOLOGIC SETTING:

The mineralization consists of a 12-in. wide quartz vein striking N60°E
and dipping 60°SE. Metallic minerals include arsenopyrite, pyrite,
galena, sphalerite, chalcopryite, and gold. A second vein exposed above
the upper portal averages 8- to 10-in. wide, strikes N40°W and dips
nearly vertical. This vein is only slightly iron-stained and contains
few sulfides (see sample 7192A).

Host rocks consist of interbedded slates and graywackes with a foliation
striking N5°-20°E and dipping 45°W to near vertical.

BUREAU WORK:

Surface sampling was done in 1979 and 1980. Data from 7 samples (4427,
4721-24, 4780, 7192A) are listed in table C-71. Undetermined mineral
development potential due to inaccessibility of workings.

REFERENCES:

6, 79, 90, 171, 182, 184, 191-194

TABLE C-71. - ANALYTICAL RESULTS - Ronan and James Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4427	Q.V.	Grab	NA	2.7	2.2	150	50	<200	<500	ND	ND	ND	ND	ND	ND	Dump.
4721	Q.V.	Grab	NA	40	11	20	100	<200	<500	ND	ND	ND	ND	ND	ND	Dump.
4722	Metsed Q.V.	Grab	NA	12	1.8	50	20	<200	<500	ND	ND	ND	ND	ND	ND	Adit portal.
4723	Q.V.	Grab	NA	29	22	65	1650	415	500	ND	ND	ND	ND	ND	ND	Dump.
4724	Metsed Q.V.	Grab	NA	31	8.8	50	50	125	<500	ND	ND	ND	ND	ND	ND	Adit portal.
4780	Q.V.	Grab	NA	102	93.5	96	5500	2500	750	ND	ND	ND	ND	ND	ND	Dump, high grade.
7192A	Q.V.	Chip	10 in.	0.224*	0.6*	6	270	56	125	ND	ND	ND	ND	ND	ND	Adit portal NW striking vein.

* ounces per ton

NAME (other names): Apex Prospect
(Nightingale)

COMMODITIES: Au

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 11 T 6N R 2W
Meridian: Seward
Geographic: Located on the south side of Summit Creek
above and west of the westernmost Oracle
portal at an elevation of about 3,000 ft
(fig. C-23).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-257	70	56	202	NA	NA

HISTORY & PRODUCTION:

1938-39 - J. C. Roehm (136) refers to work including milling being performed on veins exposed above the Oracle Mine. This may refer to the Apex and Nightingale properties.

1940 - Harry Johnson reported to be prospecting these claims (136).

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Two caved adits or trenches occur at elevations of 2,900 and 3,000 ft, respectively. Both appear to be driven approximately N70°W into the hillside.

GEOLOGIC SETTING:

Mineralization consists of NW striking, steeply dipping, quartz veins in close proximity to an 8-ft wide, north striking, felsic dike (Gilpatrick Dike) recemented by vuggy quartz-carbonate veins. Quartz specimens contain minor arsenopyrite, pyrite, galena, and very minor gold.

BUREAU WORK:

During 1982, three grab samples (7193 A & B, 7194) of dump material were collected for analysis. Data are listed on table C-72. Panning of crushed quartz (7193 B) recovered a few very fine flakes of gold. Moderate mineral development potential. Should be evaluated along with the Summit (S-254) and other nearby prospects.

REFERENCES:

6, 136, 184, 191-192

TABLE C-72. - ANALYTICAL RESULTS - Apex Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn		
7193A	Q.V.	Grab	NA	25.0	1.3	9	435	30	240	ND	ND	ND	ND	ND	ND	Dump debris 3000 ft level.
				**												
7193B	Q.V.	Pan Conc	6 lbs	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dump debris 2900 ft level.
7194	Q.V.	Grab	NA	0.04	0.3	11	9	32	345	ND	ND	ND	ND	ND	ND	Dump debris 2900 ft level.

** 0.0001 oz of gold was recovered from panning 6 lbs of material and amalgamating the concentrate.

NAME (other names): Johnson Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

NW 1/4 Sec 12 T 6N R 2W

Geographic: Located on the north side of Summit Creek 1 mi west of the Seward Highway between 2,600 and 4,300 ft above sea level. Prospect is located about 3/4 mi west of its indicated position on the 1951 Seward C7 base maps.

REFERENCE NUMBERS:

Map
S-258

Kx
NA

Tysdal
50

MAS
166

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911? Originally staked as part of the Colorado Claims (182).

1931 Low grade samples collected by Tuck (182).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to consist of a 40-ft adit at 2,600 ft and open cuts at 3,500 ft and 4,300 ft (182). Originally a 1/2-mi long trail led to the workings from the Oracle Mine.

GEOLOGIC SETTING:

The mineralization is reported to be a fractured 4- to 8-ft wide felsic dike recemented by slightly mineralized 4- to 6-in. wide quartz-calcite stringers containing arsenopyrite, pyrite, and minor gold. The dike is apparently an extension of the Gilpatrick dike which strikes N12°E and dips vertically at this location.

BUREAU WORK:

Searched for but not located in 1979. Undetermined mineral development potential.

REFERENCES:

182, 184, 191-192

NAME (other names): Colorado Prospect COMMODITIES: Au, Ag

(Upper Colorado 1-3)

LOCATION: Quadrangle: Seward C7 NW 1/4 Sec 1 T 6N R 2W

Meridian: Seward

Geographic: Located on the south side of Colorado Creek about 2 mi west of the Seward Highway between 2,400 and 2,800 ft above sea level. The prospect is mislocated on the 1951 Seward C7 quadrangle map.

REFERENCE NUMBERS:

Map
S-259

Kx
123

Tysdal
45

MAS
167

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1911 Prospect pits reported to be present (108).

1931 Low grade samples collected by Tuck (182).

1981 Location notice filed by Nancy Hollingsworth and others (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of 1 open adit at elevations of 2,400 ft, 2 caved adits at elevations of 2,600 and 2,800 ft and numerous pits and trenches.

GEOLOGIC SETTING:

The mineralization consists of quartz-calcite veins up to 8-in. wide along fractures in the Gilpatrick Dike. The dike ranges from 4-ft to nearly 15-ft wide, strikes N10°E and dips nearly vertically.

Metallic minerals include arsenopyrite, pyrite, galena, sphalerite, and gold. Free gold is reported in some of the veins but much of the mineralization appears to be low grade. The host rock is mostly slate with cleavage nearly parallel to the dike.

BUREAU WORK:

Surface sampling was done in 1979. Results from 5 samples (4398-4401, 4407) are listed on table C-73. Low mineral development potential.

REFERENCES:

6, 79, 108, 182, 184, 191-192, 194

TABLE C-73. - ANALYTICAL RESULTS - Colorado Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4398	Fel Int	Grab	NA	ND	ND	30	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,800 ft prospect pit.
4399	Fel Int Q.V.	Grab	NA	0.08	5.2	10	1200	335	2700	ND	ND	ND	ND	ND	ND	ND	2,600 ft prospect pit.
4400	Q.V.	Grab	NA	<.02	0.2	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	2,800 ft caved adit.
4401	Fel Int Q.V.	Grab	NA	<.02	0.2	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	2,700 ft prospect pit.
4407	Fel Int Q.V.	Chip	4 ft	<.02	.2	20	15	20	ND	ND	ND	ND	ND	ND	ND	2	2,400 ft adit.

401.

NAME (other names): North Star Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-8 SE 1/4 Sec 8 T 6N R 2W
 Meridian: Seward
 Geographic: Located near the head of Devils Creek on the
 divide between Devils and East Fork Creeks
 between 4,200 and 4,400 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-260	30T	49	2T6	NA	NA

HISTORY & PRODUCTION:

1961 - Located by Ray Billens (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include a trail and caved adit.

GEOLOGIC SETTING:

Mineralization is not currently exposed at the mine itself. However, a milky, vuggy quartz-calcite vein exposed 200 ft above the mine was sampled (4403) which strikes N5°E and dips 60°NW roughly parallel to foliation of the slate host rock. Host rock at the caved portal consists of a blocky graywacke breaking into brick-like and flagstone-like fragments.

BUREAU WORK:

Surface sampling and examination were done in 1979. Results from two samples (4402, 4403) are listed on table C-74. Workings are currently inaccessible. Due to the lack of work in the area, additional evaluation may be warranted. Undetermined mineral development potential.

REFERENCES:

6, 79, 184, 191-192

TABLE C-74. - ANALYTICAL RESULTS - North Star Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4402	Q.V.	Grab	NA	<0.02	0.2	ND	ND	ND	30	ND	ND	ND	ND	ND	ND	Dump near portal.
4403	Q.V.	Disc Chip	6 in.	2.8	<.2	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	Vein 200 ft above portal.

NAME (other names): Chickaloon River Occurrence COMMODITIES: Mo

LOCATION: Quadrangle: Seward C-8 ? 1/4 Sec 1 T 6N R 4W
 Meridian: Seward
 Geographic: Reported to be located on the Chickaloon
 River approximately 1/2 mile northwest of
 Swan Lake (108).

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-261	100	NA	NA	NA	NA

HISTORY & PRODUCTION:

1915 - Prospect reported by Johnson (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Small flakes of molybdenite are reported to occur in quartz veins (108).

BUREAU WORK:

Searched for but not located in 1980. Large potential host intrusives are not known to occur in the area. Low mineral development potential.

REFERENCES:

6, 108, 169, 191-192

NAME (other names): Johnson and Skeen Prospect
Billy-Jim I

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 26 T 7N R 3W
Meridian: Seward
Geographic: Located on the east side of Abernathy Creek
between 2,600 and 2,700 ft above sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-262	103	46	217	AA024743	NA

HISTORY & PRODUCTION:

1914 - Located by Hank Johnson and Frank Skeen (182).
Four oz of gold recovered using a rocker (182).

1981 - Evidence of assessment filed by James E. Strong and William L.
Miller (194).

Total recorded production: 4 oz of gold. Additional production likely.

RESOURCES: ND

OPERATING DATA:

Workings consist of 3 adits reported to range from 50 to 90 ft in
length (182). A rocker remains on site. Other workings are present 1
mi south along the ridge crest (NE 1/4, Sec 2, T6N, R3W).

GEOLOGIC SETTING:

Mineralization is reported to consist of two quartz veins varying from
a few inches to several feet in width in north striking slate and
graywacke host rock (182). The veins were reported to be rich but
erratic and of no great length and appear to have a northwest strike
based upon the orientation of the workings (182).

BUREAU WORK:

Surface sampling was done in 1980. Workings are not accessible and
mineralization is not exposed. However, high assays from dumps
indicate that additional evaluation is warranted. Data from two
samples (4772, 4773) are listed on table C-75. Moderate mineral
development potential.

REFERENCES:

6, 182, 184, 191-192, 194

TABLE C-75. - ANALYTICAL RESULTS - Johnson and Skeen Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4772	Q.V.	Grab	NA	15.8 *0.34	97 *1.8	ND	ND	ND	1500	ND	ND	ND	ND	ND	ND	ND
4773	Q.V.	Grab	NA	61.5 *1.48	92.2 *1.9	ND	ND	ND	78	ND	ND	ND	ND	ND	ND	ND

* ounces per ton

NAME (other names): Mascot and Iron Mask
Occurrences

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

SW 1/4 Sec 26 T 7N R 2E

Geographic: Located on the divide between Colorado and
Fresno Creek west of the Gilpatrick Dike.
They are mislocated on the 1951 Seward C7
base map.

REFERENCE NUMBERS:

Map
S-263

Kx
TT6

Tysdal
41

MAS
T68
170

BLM
NA

MS
NA

HISTORY & PRODUCTION:

Reported to have been found prior to 1911 (108).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

The mineralization is reported to consist of slightly mineralized quartz veins recementing fractured felsic dikes (108). The Mascot Dike is up to 40-in. wide, strikes north and dips vertically. The Iron Mask dike is 4-ft wide.

BUREAU WORK:

Searched for but not located. These occurrences are similar to those along the Gilpatrick dike. Undetermined mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192

NAME (other names): Independence Prospect COMMODITIES: Au, Ag
(Peel and Iverson)

LOCATION: Quadrangle: Seward C7 NW 1/4 Sec 36 T 7N R 2W
Meridian: Seward
Geographic: Located on the north side of Colorado Creek 2
mi west of the Seward Highway between 2,700
and 3,250 ft above sea level. The prospect is
mislocated on the 1951 Seward C7 quadrangle
base map.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-264	T27	44	T69	AA045711	NA
				AA046223	

HISTORY & PRODUCTION:

1915 Reported to have prospect pits (182).

1981 Relocated by Nancy Hollingsworth and others (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a caved 12 ft adit at 3,250 ft and several prospect pits.

GEOLOGIC SETTING:

Mineralization consists of a fractured felsic dike up to 4-ft wide recemented with slightly mineralized quartz stringers.

BUREAU WORK:

Surface sampling was done in 1979. Data from sample 4401 are listed in table C-76. This is one of several similar occurrences in the area and is believed to have low grade mineralization. Low mineral development potential.

REFERENCES:

6, 79, 108, 182, 184, 191-192, 194

TABLE C-76. - ANALYTICAL RESULTS - Independence Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4401	Fel Plut Q.V.	Grab	NA	<.02	0.2	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND

409.

NAME (other names): Fresno Prospect
(June Mine)

COMMODITIES: Au

LOCATION: Quadrangle: Seward C7 SE 1/4 Sec 25 T 7N R 1W
Meridian: Seward
Geographic: Located on the crest of the ridge between
Colorado and Fresno Creeks at an elevation of
about 4,250 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-265	45	39, 40	177	AAT2702	NA
	466		176		
	484				

HISTORY & PRODUCTION:

- 1911 Prospect pits reported to be present (108).
- 1912 A few tons of ore were reportedly milled in an arrastre mill constructed on Fresno Creek by Frank Slator (108).
- 1981 Evidence of assessment work filed by Paul Cordasci (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include numerous prospect pits and trenches.

GEOLOGIC SETTING:

Mineralization consists of mineralized quartz veins recementing an extension of the fractured Gilpatrick Dike. The veins are iron-stained, up to 8-in. thick and contain arsenopyrite, galena, and minor gold. The dike at this locality is 5- to 6-ft wide, strikes N10°E and dips 80°W.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192, 194

NAME (other names): Shell Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C7
Meridian: Seward

NE 1/4 Sec 25 T 7N R 2W

Geographic: Located on the divide between Fresno and Colorado
Creek between 3,800 and 4,250 ft above sea level.

REFERENCE NUMBERS:

Map
S-266

Kx
466

Tysdal
43

MAS
172

BLM
AA025446-448
AA028093

MS
NA

HISTORY & PRODUCTION:

1931 Prospect pits reported in the area (182).

1950's Caterpillar prospecting, possible construction of cabin.

1981 Evidence of assessment filed by John W. Horton (194).

No recorded production. Minor production possible.

RESOURCES: 440 tons - 0.4 oz gold/ton, 0.3 oz silver/ton.

OPERATING DATA:

Workings include an adit caved 70 ft from the portal at an elevation of 4,100 ft, a shaft at an elevation of 4,150 ft, numerous dozer trenches and prospect pits, 2 standing buildings and a cat trail. The adit was driven to intercept the shaft and is caved at the intersection.

GEOLOGIC SETTING:

Several quartz veins and at least 2 felsic dikes, one of which is a continuation of the Gilpatrick Dike, occur in the area. The developed vein strikes N10°-15°E and dips steeply. Metallic minerals include arsenopyrite, galena, pyrite, and gold.

BUREAU WORK:

This prospect was examined and sampled in 1979 and 1981. The main vein could not be examined underground due to caving nor on the surface because of snow cover. Pits along the trend of the vein indicate a strike length of at least 100 feet. Other quartz veins and two dikes were briefly examined. None were found to contain significant mineralization. Visible gold can be found in quartz piled on the surface near the shaft. The mineralization appears to be of low grade. Data are listed on table C-77. Moderate mineral development potential for a small mine.

REFERENCES:

6, 79, 108, 182, 184, 191-192, 194

TABLE C-77. - ANALYTICAL RESULTS - Shell Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4404	Q.V.	Grab	NA	3.9	2.4	5	235	195	200	ND	ND	ND	ND	ND	ND	Adit dump.
4405	Q.V.	Grab	NA	<.02	<.2	10	20	25	ND	ND	ND	ND	ND	ND	ND	ND
4406	Fe1 Plut	Grab	NA	.04	<.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5661	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Shaft dump.
5662	Q.V.	Grab	NA	0.396*	0.3*	7	375	115	2700	ND	ND	ND	ND	ND	ND	Shaft dump.
5663	Q.V.	Grab	NA	7.1	5.1	13	295	210	660	ND	ND	ND	ND	ND	ND	Shaft dump.
5664	Q.V.	Grab	NA	10.7	13.0	7	760	150	230	ND	ND	ND	ND	ND	ND	Prospect pit.

* ounces per ton

412

NAME (other names): Teresa Prospect
(Juneau Bowl Mining Co.)

COMMODITIES: Au?

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 25,26,36 T 7N R 1W
Meridian: Seward

Geographic: This prospect is located at approximately
4,000 ft above sea level in a small gully on the
east side of Mills Creek 1/2 mi north of its
junction with Timberline Creek. The Teresa 1-6
claims are located on the north side of the divide.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-267	NA	NA	NA	AA-29547-53	NA

HISTORY & PRODUCTION:

1976 - Claims originally located by Thomas Byron (194).

1981 - Assessment filed by Thomas Byron (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

A few tools and dynamite occur at an elevation of 4,000 ft. No evidence of digging was located. On the north side of the divide a hand dug 90-ft shaft was sunk in a glacier in 1982. Bedrock was not reached.

GEOLOGIC SETTING:

Mineralization consists of several small 1- to 3-in. wide quartz veins aligned parallel to bedding in the host rock. Well-bedded meta-mudstones and sandstones generally strike N45°E and dip 80°NW in the area. Considerable faulting is present which causes local variation in the attitude of the bedding. The veins pinch and swell along strike, are locally hematite-stained and contain minor pyrite. Other veins were examined at lower elevations in the same gully. These tended to occupy what appears to be tensional fractures, associated with a right lateral fault occupying the gully, strike N-S and dip nearly vertical. These veins had poorly developed ribbon structure with little sulfide present. One piece of quartz float contained minor disseminated galena.

BUREAU WORK:

The above described prospect was examined in 1982 during a search for a potential source of the coarse placer gold located in Mills Creek. The area claimed on the north side of the divide was not examined. Results of 2 samples (7212, 2213) collected are listed on table C-78. Low mineral development potential.

REFERENCES:

6, 191, 194

TABLE C-78. - ANALYTICAL RESULTS - Teresa Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7212	Q.V.	Grab	NA	0.013	<0.3	<10	<200	140	80	ND	ND	ND	ND	ND	ND	ND
7213	Q.V.	Grab	NA	0.009	<0.3	35	<200	120	50	ND	ND	ND	ND	ND	ND	ND

714

NAME (other names): Seward Gold Prospect COMMODITIES: Au, Ag
(Telluride)

LOCATION: Quadrangle: Seward C-7 NW 1/4 Sec 4 T 6N R 1E
 Meridian: Seward
 Geographic: This prospect is located on the divide
 between the 2 forks of Groundhog Creek at
 an elevation of 4,250 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-268	161	36	148	AA046878-	NA
				AA046879	

HISTORY & PRODUCTION:

1910 - Located by R. L. Hatcher and C. A. McPherson (108).
 Development work begun (108).
 Deeded to Seward Gold Co (108).

1911 - Development ceased. Adit caved (108).

1981 - Relocated by Forty Mile Association (194).

No recorded production. Minor production possible.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 90 ft adit which is caved at the portal, a 15 ft shaft, 23 ft of winze, and trenching (108).

GEOLOGIC SETTING:

The mineralization consists of a quartz vein up to 1-ft wide striking N80°W and dipping vertically along a shear zone in slate and metasiltstone. Two fractured felsic dikes occur close by. Foliation of the host rock strikes N12°E and dips 70°E. The quartz contains carbonate and host rock fragments as well as pyrite, arsenopyrite, sphalerite, galena, and visible gold. Quartz veins parallel to foliation occur in the area but appear to be unmineralized.

BUREAU WORK:

The Bureau briefly examined and collected samples (5582-5591) from this prospect in 1981. Table C-79 lists the sample results obtained. The vein appears to be small but additional evaluation may be warranted to determine continuity at depth. Undetermined mineral development potential.

REFERENCES:

6, 85, 108, 182, 1854 191-192, 194

TABLE C-79. - ANALYTICAL RESULTS - Seward Gold Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5587	Q.V.	Grab	NA	.992*	.460*	6	390	140	476	ND	<2	ND	ND	ND	ND	ND	Dump high-grade.
5588	Q.V.	Grab	NA	0.79*	0.08*	5	315	79	2215	ND	<2	ND	ND	5	5	5	Dump high-grade.
5589	Metased	Chip	2 ft	0.05	7.8	66	13	120	355	ND	ND	ND	ND	ND	ND	ND	North wall of vein
5590	Q.V.	Chip	5 in.	0.7	0.1	17	7	37	86	ND	ND	ND	ND	ND	ND	ND	N30°W vein.
5591	Q.V.	Grab	NA	0.03	0.6	6	9	18	660	ND	ND	ND	ND	ND	ND	ND	Dump sample.

* ounces per ton

416.

NAME (other names): Sunrise Uranium Occurrence COMMODITIES: Uranium?
(Uraluck Exploration)

LOCATION: Quadrangle: Seward C-6 1/4 Sec 2 T 5N R 2E
Meridian: Seward
Geographic: The Sunrise Uranium claims were located
along the Placer River near its confluence
with Bartlett Glacier.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-269	58, 65	<u>37</u>	8, 10	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1954 - Originally staked by Uraluck Exploration (6).

1955 - Relocated by Sunrise Uranium (6).

No production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Bench Creek Occurrence

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-6

NE 1/4 Sec 35 T 7N R 1E

Meridian: Seward

Geographic: This occurrence is located in a canyon on Bench Creek about 1 mi above its confluence with Groundhog Creek at an elevation of 1,150 ft.

REFERENCE NUMBERS:

Map
S-270

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the U.S. Bureau of Mines.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of a 2-ft wide quartz vein striking N80°W and dipping 80°N hosted by a fractured metasandstone. The vein contains minor arsenopyrite and numerous metasandstone fragments.

BUREAU WORK:

This quartz vein was briefly examined and sampled during 1982. Sample (2465) results are listed on table C-80. Little work has been done in this area. Additional evaluation is warranted. Low mineral development potential.

REFERENCES:

This report.

TABLE C-80. - ANALYTICAL RESULTS - Bench Creek Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
2465	Q.V.	Chip	24 in.	4.8	0.6	7	3	44	13	ND	ND	ND	ND	ND	ND	ND

417

NAME (other names): Brewster Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward C-7
Meridian: Seward

SE 1/4 Sec 27 T 7N R 1E

Geographic: This prospect is reported to be located near the confluence of Groundhog and Bench Creek at an elevation of 1,780 ft. A trail 1-mi long is reported to extend from the mouth of Groundhog Creek to the workings (202).

REFERENCE NUMBERS:

Map
S-271

Kx
90

Tysdal
35

MAS
T49

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1915 - First discovered (202).

1926 - Small mill installed, \$150.00 of gold recovered.
Wimmeler (202) reports "The deposit offers absolutely no encouragement for further development."

1981 - Relocated by Rocky Bell and others (6).

Reported production: 5 to 10 oz (202).

RESOURCES: ND

OPERATING DATA:

The workings are reported to consist of a 65 ft adit and a small mill (202).

GEOLOGIC SETTING:

The mineralization is reported to consist of narrow discontinuous quartz veins roughly parallel to the N15-20°E striking vertically dipping foliation of the country rock (202). The vein contains chalcopyrite, galena, pyrite, arsenopyrite, and gold.

BUREAU WORK:

The prospect was searched for but not located in 1980 and 1982. However, portions of an overgrown trail believed to lead to the mill site were located on the south side of Groundhog Creek and followed westerly for 1/2 mi along Groundhog Creek from the air. Undetermined mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192, 202

NAME (other names): Ready Bullion Prospect COMMODITIES: Cu, Au, Ag, Zn

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 20 T 7N R 1E
 Meridian: Seward

Geographic: The Ready Bullion massive copper sulfide deposit is located on Lynx Creek approximately 2 3/4 mi south of its junction with Center Creek. The support buildings were constructed in the center of Lynx Creek valley on the east side of the creek at an elevation of 1,700 ft. Access is provided by a 4-wheel drive road which begins at the Bench Lake Trailhead, crosses Center and Bench Creeks and leads to several old roadhouse buildings, along the old "Hope-Moose Pass Highway", which are now used for living and storage quarters by a Lynx Creek placer miner. An unmaintained partially overgrown trail continues up Lynx Creek to the collapsed Ready Bullion mine buildings.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-272	157	34	T53	AA046882- AA046895	NA

HISTORY & PRODUCTION:

- 1900 - Massive sulfide outcrop first discovered.
- 1904 - Development including construction of the upper adit by the Ready Bullion Copper Mining Co. of Boston, Mass (120).
- 1905 - Lower crosscut constructed (23).
- 1906 - 25 ft adit driven in Lynx Creek canyon (108).
- 1981 - Location notice filed by Forty Mile Association (194).
- No recorded production.

RESOURCES:

6,000 tons containing 300,000 lbs copper, 12,000 lbs zinc, 1,800 oz of silver, and 60 oz of gold.

OPERATING DATA:

The mineralization has been explored by a pit and adit which are located about 1/2 mi west of the old buildings between elevations of 2,800 and 2,900 ft. The adit, which occurs at an elevation of 2,800 ft, consists of 335 ft of crosscut, 110 ft of drift with minor stoping and a winze of undetermined depth, filled with water (fig. C-25). The collapsed portal to a second adit is located 1/4 mi east of the upper level at an elevation of 1,800 ft. Reportedly work was

abandoned after completion of 800 ft of crosscut without intercepting the vein. Estimates indicate that the vein extension should be intercepted 2,000 ft west of the 1,800 ft level portal.

GEOLOGIC SETTING:

The Ready Bullion deposit is the only one of its type identified within the Peninsula Study Area. The mineralization occurs along a well-developed shear zone 3- to 10-ft wide over an exposed strike length of approximately 110 ft and consists of 1- to 4-ft thick and up to 40-ft long podiform masses of massive sulfide ore containing pyrrhotite, pyrite, chalcopyrite, and locally sphalerite and arsenopyrite. Anomalously high values of lead indicate the presence of galena though none was recognized in hand specimen. The vein strikes north and dips 60°-70° west though some of the surface exposures are rotated slightly due to slumping. The carbonaceous, phyllitic host rock differs in appearance from most rocks on the Kenai Peninsula. It is highly fractured and weathers to produce a characteristic screen by which it can be easily recognized from the air. Foliation of the host rock varies within the adit and at the surface (figs. C-25 and C-26). Foliation in adjacent relatively undeformed metaclastics characteristically strikes N10°E with steep dips to the east or west. Attitude of bedding is not always apparent but appears to be more variable than the foliation. Measurements collected suggest the presence of tight (isoclinal) folding in the area.

Five separate massive sulfide lenses crop out at the surface over a slope distance of 125 ft (fig. C-26). Possible explanations for the presence of apparent multiple parallel vein exposures include:

1. The existence of 5 parallel mineralized structures,
2. repetition by folding,
3. repetition by faulting,
4. slumping,
5. some combination of the above.

The existence of only one mineralized structure in the adit and the presence of obvious slump blocks on the surface are strong evidence in favor of slumping. The inherently weak country rock and steep (30°-40°) slopes result in continuous downhill transport of material as is indicated by the partial filling in of the portal area within 4 weeks of its exposure by the Bureau.

BUREAU WORK:

The Bureau located the massive sulfide outcrop and reopened, mapped, and sampled the upper adit during July of 1981. Surface sample locations are shown on figure C-26, subsurface sample locations are shown on figure C-25.

Table C-81 lists quantitative data for sixteen Bureau samples (5600, 5608, 5654-5660, 5781-5787) collected at the Ready Bullion prospect. The average grade for the massive sulfide samples collected is: copper 2.5 pct, zinc 0.1 pct, gold 0.01 oz/ton, silver 0.3 oz/ton, and anomalous values of copper, nickel, molybdenum, and lead. (Note that

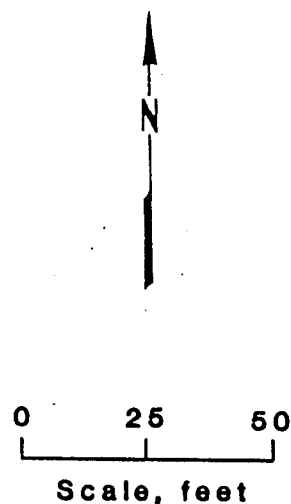
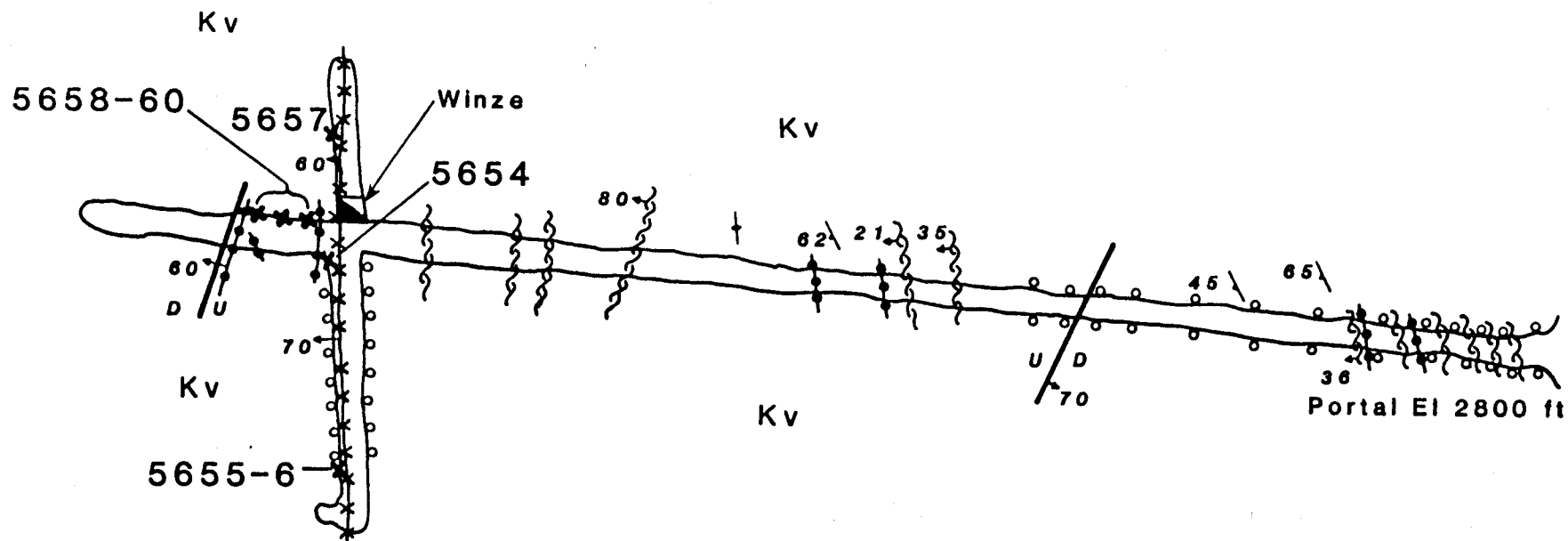
fire assay values for gold and silver are higher than those obtained by AA; see sample 5782). Preliminary data indicate that zinc increases and copper decreases with depth. Higher surface copper values are to be expected due to secondary enrichment. The vein is continuous over a strike length of 110 ft, along dip for 200 ft, and averages 2-ft thick.

Additional evaluation of the Ready Bullion prospect is warranted because of its geologic interest as well as its potential economic value. Adjacent rocks should be examined and sampled in greater detail to determine the relationship of the sandy metaconglomerate containing 2,000 ppm copper exposed nearby (see sample 5786) to the massive sulfide vein and its aerial distribution. The potential for continuation of the mineralization along strike should be evaluated by trenching. The vein appears to be truncated at both ends by transverse faults topographically expressed as gullies (fig. C-26). Regionally these faults tend to have a left-lateral component of horizontal displacement though their sense of movement was not determined during the 1981 evaluation of the prospect. Scree, similar in appearance to that occurring at the Ready Bullion prospect, has been identified along strike on the divide west of Turnagain Pass from the air and it should be examined on the ground. Resistivity or EM Surveys would likely be of value to further evaluate the prospect, but both would be difficult and dangerous to use because of the precipitous terrane. Moderate mineral development potential.

REFERENCES:

6, 22-23, 108, 120, 182, 184, 191-192, 194

424.



LEGEND

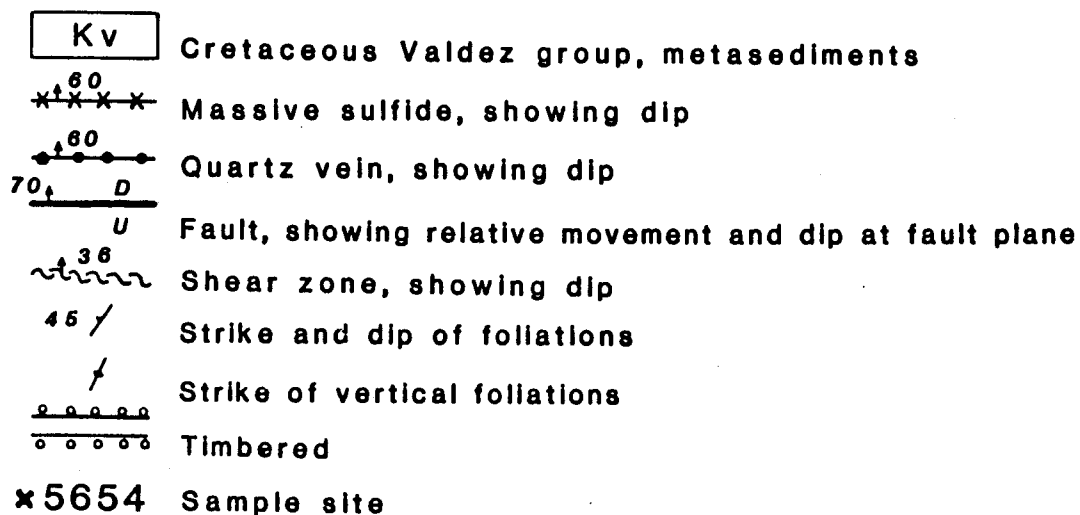


FIGURE C-25. Subsurface sample location map for the Ready Bullion Prospect (S-272).

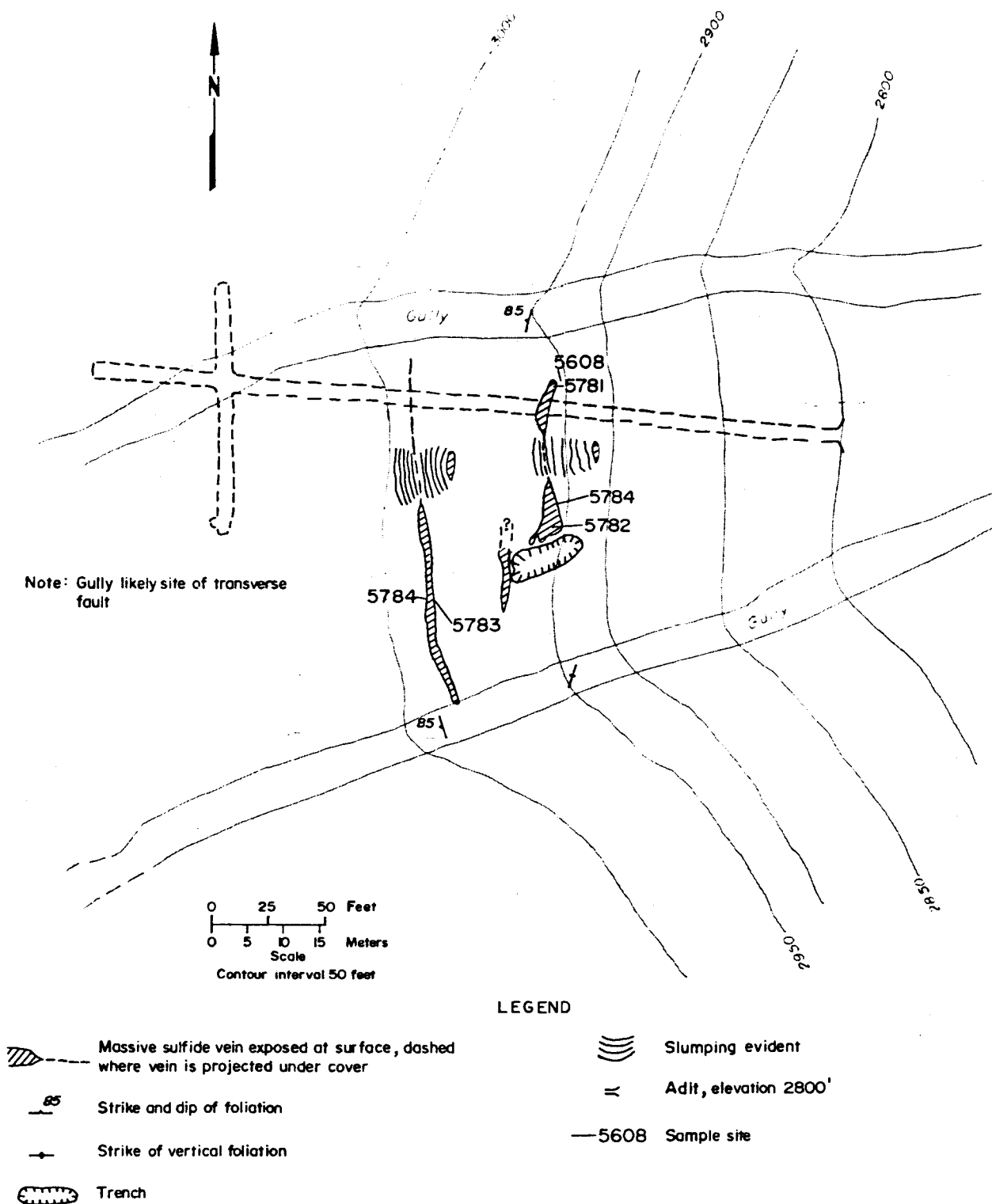


FIGURE C-26. Surface workings and sample location map for the Ready Bullion Prospect (S-272).

TABLE C-81. - ANALYTICAL RESULTS - Ready Bullion Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											Descriptions		
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5600	Massive Sulfide	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Surface N. end vein.
5608	Metased	Grab	NA	0.03	0.08	175	16	71	<10	ND	ND	ND	ND	ND	ND	ND	Surface N. end vein. Footwall.
5654	Massive Sulfide	Chip	8 in.	0.23	3.9	15500	120	500	ND	43	ND	28	ND	ND	ND	ND	Adit, west side south drift.
5655	Massive Sulfide	Grab	NA	0.71	3.1	12500	125	4100	ND	ND	ND	ND	ND	ND	ND	ND	Adit, west side south drift.
5656	Metased	Chip	12 in.	0.06	0.2	390	19	170	ND	ND	ND	ND	ND	ND	ND	ND	Adit, west side south drift. Hangingwall.
5657	Massive Sulfide	Chip	4 in.	0.15	2.4	9000	56	1000	ND	72	ND	68	ND	ND	ND	ND	Adit, west side north drift.
5658	Metased	Disc Chip	60 in.	0.03	0.3	72	23	105	ND	ND	ND	ND	ND	ND	ND	ND	Adit.
5659	Metased	Disc Chip	72 in.	<0.03	0.2	53	27	110	ND	ND	ND	ND	ND	ND	ND	ND	Adit, near face.
5660	Metased	Disc Chip	108 in.	<0.03	0.6	40	25	105	ND	ND	ND	ND	ND	ND	ND	ND	Adit, near face.
5781	Massive Sulfide	Channel	24 in.	0.26	10.9	29500	105	580	10	92	9	58	ND	ND	ND	ND	Surface north end vein.
5782	Massive Sulfide	Chip	24 in.	.166*	0.75*	39000	67	800	17	32	ND	46	ND	ND	ND	ND	Surface south end vein.
5783	Massive Sulfide	Grab	NA	.017*	0.57*	44000	115	840	2400	130	ND	29	ND	ND	ND	ND	Surface south end vein.
5784	QV	Chip	3 in.	<0.03	0.21	16	15	8	<10	6	<2	8	ND	ND	ND	ND	Surface. Hangingwall.
5785	Metased	Grab	NA	0.38	2.15	35000	43	135	24	23	<2	42	ND	ND	ND	ND	Surface. Footwall gouge.
5786	Metased	Grab	NA	0.06	9	2050	440	64	27	14	ND	16	ND	ND	ND	ND	Surface 300 ft south of portal.
5787	Str Silt	StrSed	NA	0.84	5.8	49	21	99	<10	ND	ND	ND	ND	ND	ND	ND	Gully draining prospect.

* ounces per ton

NAME (other names): Keno and Hiway Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward C-7 NE 1/4 Sec 9 T 7N R 1W
 Meridian: Seward
 Geographic: Located at the confluence of the Weber and
 Canyon Creeks.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-273	338	32	180	NA	NA

HISTORY & PRODUCTION:

1965 - Located by Fred Henton, Ray Movity, and Bill Miller (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Tributary Creek Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward C7 NE 1/4 Sec 18 T 7N R 1W
 Meridian: Seward
 Geographic: Specific location unknown.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
<u>S-274</u>	<u>T32</u>	<u>38</u>	<u>T78</u>	<u>NA</u>	<u>NA</u>

HISTORY & PRODUCTION:

1900 Located by Leonard Olson (6).

1979 Possible relocation by F. S. Pettyjohn (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of a fractured felsic dike recemented by slightly mineralized quartz veins.

BUREAU WORK:

Searched for but not located in 1979. Undetermined mineral development potential.

REFERENCES:

6, 108, 182, 184, 191-192

NAME (other names): Gilpatrick Prospect (Frenchy Creek) COMMODITIES: Ag, Au

LOCATION: Quadrangle: Seward C-7 SW 32 8N 1W
 NW 1/4 Sec 5 T 7N R 1W
 Meridian: Seward
 Geographic: Located on the divide between Frenchy and Pass
 Creeks at an elevation of 3,000 ft. Inclined
 shaft is located 1/2 mi south of location
 indicated on 1951 Seward C-7 quadrangle map.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-275	137	31	187	AA036326	NA
	465				

HISTORY & PRODUCTION:

Pre 1911 - Located by S. L. Colwell and J. C. Robertson (108).

1979 - Assessment filed by F. S. Pettyjohn (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 50 ft inclined (30°) shaft with a winze at the bottom covered by debris (extremely hazardous), prospect pits, and trenching.

GEOLOGIC SETTING:

Mineralization consists of a fractured felsic dike averaging 16-ft wide at the prospect. The fractures are occupied by quartz-carbonate veins and pods up to 10-ft wide. The dike strikes N10°E and dips 30° to 50°W in the incline with dip increasing at depth. Metallic minerals occurring in the quartz include arsenopyrite, chalcopyrite, galena, and sphalerite. Arsenopyrite also occurs in the dike rock. Malachite staining occurs locally. Host rock is slate and graywacke striking N15°E and dipping steeply to the west.

BUREAU WORK:

Surface and subsurface sampling and evaluation were done in 1979 and 1981. Data from samples collected (4413, 4788, 5682 A-C) are listed on table C-82. Hand picked samples from the dump contain significant mineralization. However, samples taken in the incline indicate the mineralization is low grade. Higher grades may occur in the winze. Low mineral development potential.

REFERENCES:

6, 79, 108, 182, 184, 191-192, 194

TABLE C-82. - ANALYTICAL RESULTS - Gilpatrick Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4413	Fel Plut Q.V.	Disc Chip	4 ft	.04	0.6	30	20	<200	500	ND	<2	ND	ND	ND	ND	Near portal.
4788	Q.V.	Grab	NA	14.5	830	1060	1150	470	550	ND	ND	ND	ND	ND	ND	Dump.
5682A	Fel Plut Q.V.	Cont. Chip	14 in.	0.54	3.5	19	37	39	450	ND	<2	ND	1	ND	ND	Adit 34 ft from portal.
5682B	Fel Plut Q.V.	Cont. Chip	3 ft	0.66	7.4	18	32	24	285	ND	<2	ND	2	ND	ND	Adit 10 ft from portal.
5882C	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Specimen not analysed.

430.

NAME (other names): Hillside Prospect
(Frenchy Creek Mine)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 29 T 8N R 1W
Meridian: Seward
Geographic: Located at an elevation of 3,100 ft 3/4 mi
north of Frenchy Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-276	7T	29	299	AA031709	NA
				AA031710	

HISTORY & PRODUCTION:

1947 - Location by Mr. Johnson (82).

1947-56 - Trenching and sampling (82).

1957 - Evaluation by Martin Jasper (82).

1981 - BLM records indicate a transfer of interest, Irving S. Todd,
Richard Griffith, and Edgar Curtis (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include a trail and several prospect pits.

GEOLOGIC SETTING:

Mineralization consists of several quartz veins of undetermined thickness, due to lack of exposure, striking N70°W and dipping steeply south. Metallic minerals include arsenopyrite, pyrite, and very minor gold.

BUREAU WORK:

Surface sampling was done in 1979. Data from sample 4415 are listed on table C-83. Low mineral development potential.

REFERENCES:

6, 79, 82, 108, 184, 191-192, 194

TABLE C-83. - ANALYTICAL RESULTS - Hillside Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4415	Q.V.	Grab	NA	0.21	0.6	70	30	<200	ND	ND	ND	ND	ND	ND	ND	ND	ND

NAME (other names): Silvertip Quarry

COMMODITIES: Stone

LOCATION: Quadrangle: Seward D-7

NW 1/4 Sec 26 T 8N R 1W

Meridian: Seward

Geographic: This quarry is located on the west side of the Seward Highway 2 1/2 mi southeast of the Hope "Y".

REFERENCE NUMBERS:

Map
S-278

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

Pre-1977 - Used as a source of riprap for highway construction.

1977-81 - Used as a source of rock for fireplace construction.

RESOURCES: ND

OPERATING DATA:

Open pit.

GEOLOGIC SETTING:

Bedrock consists of a fractured metasandstone belonging to the Valdez Group.

BUREAU WORK:

A surface examination of the quarry was made in 1981. The rock has moderate mineral development potential for continued use as riprap and fireplace facing stone because of its easy access from the Seward Highway.

REFERENCES:

68, 195

NAME (other names): Gold Leaf Prospect COMMODITIES: Au

LOCATION: Quadrangle: Seward D-7 NW 1/4 Sec 23 T 8N R 1W
 Meridian: Seward
 Geographic: Located at the confluence of East Fork and
 Gulch Creeks.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-279	27	NA	174	AA033958	NA

HISTORY & PRODUCTION:

1953 - Originally staked by Ray McCracken (6).

1980 - Assessment work filed by George Stillman (194).
 Claim declared null and void by the Bureau of Land Management (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Trenching.

GEOLOGIC SETTING:

Several quartz veins in slate and graywacke have been identified. Metallic minerals are sparse and include arsenopyrite and pyrite. High grade placer deposits have been mined in both Gulch and East Fork Creeks.

BUREAU WORK:

A brief surface examination of the area was made in 1981. Several quartz veins were identified but none contained visually significant mineralization. Undetermined mineral development potential.

REFERENCES:

6, 191-192, 194

NAME (other names): Julia Occurrence
(Sylvia)

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-7
Meridian: Seward

1/4 Sec 13,23,24 T 8N R 1W

Geographic: This group of claims is located on the south
side of Gulch Creek just above its junction
with East Fork Creek.

REFERENCE NUMBERS:

Map
S-280

Kx
544

Tysdal
NA

MAS
NA

BLM
AA047362-80

MS
NA

HISTORY & PRODUCTION:

1982 - Location notice filed by Anna Philo (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

One prospect pit is present.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Gulch Creek No. 1
Occurrence

COMMODITIES: Ag, Au, Pb, Zn, Sb

LOCATION: Quadrangle: Seward D-7

SE 1/4 Sec 20 T 8N R 1E

Meridian: Seward

Geographic: Located at the head of a small northwest flowing tributary to Gulch Creek at elevations between 3,700 and 4,200 ft. The mineralized veins occur on a saddle at 3,950 ft above sea level.

REFERENCE NUMBERS:

Map
S-281

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1981 - Discovered by the Bureau.

No production.

RESOURCES:

200 tons, 0.1 oz gold/ton, 20 oz silver/ton.

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization occurs in at least 2 narrow quartz veins averaging 3-in. wide which strike N35°-50°W and dip 40°-55°NE. One vein can be traced for 200 ft along strike. Metallic minerals include galena, stibnite, sphalerite, chalcopyrite, and arsenopyrite. Host rock consists of interbedded and locally iron-stained, slightly metamorphosed silty to sandy graywacke, pebble conglomerate, and minor slate. Complex structure is present due to faulting and folding. Several barren appearing stockwork type quartz veins also occur in the area.

BUREAU WORK:

Two mineralized quartz veins and three barren appearing stockwork veins were identified and sampled in 1981. Sample data (5668-5680) are listed on table C-84. Numerous veins occur in the area which could not be sampled because of time limitations and precipitous terrane. High silver assays were obtained from two parallel veins. Due to the presence of several other veins in the vicinity, additional work is recommended. The terrane is very precipitous and hindered sampling efforts. Sampling at the base of the saddle is made extremely hazardous by falling rocks. Moderate mineral development potential.

REFERENCES:

This report.

TABLE C-84. - ANALYTICAL RESULTS - Gulch Creek No. 1 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5668	Q.V.	Grab	NA	.005	0.7	4	19	38	<10	ND	2	ND	ND	ND	ND	Stockwork quartz.
5669	Q.V.	Cont. Chip	3 in.	.18*	22.5*											
5670	Q.V.	Cont. Chip	3 in.	1.8	50	42	1230	89	430	ND	<2	ND	27	ND	ND	Vein No. 1.
5671	Q.V.	Cont. Chip	3 in.	<.005	0.3	4	50	49	34	ND	ND	ND	ND	ND	ND	Vein No. 1.
5672	Q.V.	Cont. Chip	4 in.	0.08	0.5	16	130	53	110	ND	ND	ND	ND	ND	ND	Vein No. 1.
5672	Metsed	Cont. Chip	4 in.	0.03	1.1	40	33	99	ND	ND	ND	ND	ND	ND	ND	Footwall to Vein No. 2
5673	Metsed	Cont. Chip	4 in.	0.07	9.0	59	53	430	10	ND	<2	ND	68	ND	ND	Hangingwall to vein No. 2.
5674	Q.V.	Cont. Chip	2 in.	0.14*	26.7*											
5675	Q.V.	Cont. Chip	2 in.	1.0	700	1450	2400	1550	200	ND	<2	ND	1800	ND	ND	Vein No. 2
5675	Q.V.	Cont. Chip	3 in.	0.02*	14.3*											
5676	Q.V.	Min. Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 2
5677	Q.V.	Cont. Chip	4 in.	<.03	1.4	9	37	40	420	ND	<2	ND	14	ND	ND	Stockwork quartz.
5678	Q.V.	Grab	NA	<.03	0.4	8	30	42	<10	ND	ND	ND	ND	ND	ND	Stockwork quartz.
5674	Metsed	Grab	NA	<.04	0.6	34	34	86	20	ND	ND	ND	ND	ND	ND	Carbonaceous meta-siltstone.
5680	Q.V.	Grab	NA	<.03	0.6	26	31	44	10	ND	ND	ND	ND	ND	ND	Stockwork quartz.

* ounces per ton

NAME (other names): Robin No. 1 Occurrence COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward D-7 1/4 Sec 19 T 8N R 1E
 Meridian: Seward
 Geographic: This occurrence is reported to occur on a
 north flowing tributary to Gulch Creek.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-282	544	NA	NA	AA047362	NA

HISTORY & PRODUCTION:

1982 - Originally located by Anna Philo (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

The approximate area of this property was examined in 1981. See S-281.
Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Gulch Creek No. 2
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward D-7
Meridian: Seward

NE 1/4 Sec 19 T 8N R 1E

Geographic: This occurrence is located at the head of a small cirque valley on the south side of Gulch Creek at an elevation of 3,200-3,350 ft.

REFERENCE NUMBERS:

Map
S-283

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Discovered and sampled by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of at least 2 subparallel quartz-carbonate veins striking N55°-60°E and dipping 45°-50°SE. The veins average 1 1/2-ft thick, are locally up to 4-ft wide and can be traced 100 to 200 ft along strike. The quartz has well-developed ribbon structure, is highly fractured and contains arsenopyrite and minor pyrite along the walls. The host rock is mostly a highly fractured looking slate and metasiltstone with foliation striking N30°-35°E and dipping 55°-60°SE. Slickensides along the hangingwall of one vein are horizontal and indicate a right-lateral component of movement.

BUREAU WORK:

Two veins were briefly examined and sampled in 1982. Sample results (7214-7216) are noted in table C-85. Low mineral development potential.

REFERENCES:

This report.

TABLE C-85. - ANALYTICAL RESULTS - Gulch Creek No. 2 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7214	Q.V.	Chip	12 in.	ND	ND	<10	<200	91	40	ND	<5	ND	60	ND	ND	Vein No. 1.
7215A	Q.V.	Chip	24 in.	ND	ND	<10	<200	120	100	ND	<5	ND	100	ND	ND	Vein No. 1.
7215B	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 1.
7716	Q.V.	Chip	18 in.	.009	<0.3	<10	<200	62	<40	ND	<5	ND	<30	ND	ND	Vein No. 2

441.

NAME (other names): Gulch Creek No. 3
Occurrence

COMMODITIES: Au, Ag?

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 16 T 8N R 1E
Meridian: Seward
Geographic: Located on the divide between the south and
middle headwater tributaries to Gulch Creek
at an elevation of 3,900 to 4,000 ft.

REFERENCE NUMBERS:

Map
S-284

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1981 - New occurrence discovered by the Bureau.

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of quartz stringers and pods up to 2-ft thick developed along well-developed shear zones averaging 4-ft wide in slate and metasiltstone. One vein strikes N65°W and dips vertically and a second, which can be traced for 50 ft, strikes N15°E and dips 60°E. The quartz is iron-stained, vuggy, and contains arsenopyrite. The area is extensively faulted.

BUREAU WORK:

Surface sampling and sketch mapping (fig. C-27) were completed in 1981. Data from five samples (5724 A-E) are listed on table C-86. Significant mineralization was not detected. However, other stained exposures and quartz veins in the area should be investigated. Low mineral development potential.

REFERENCES:

This report.

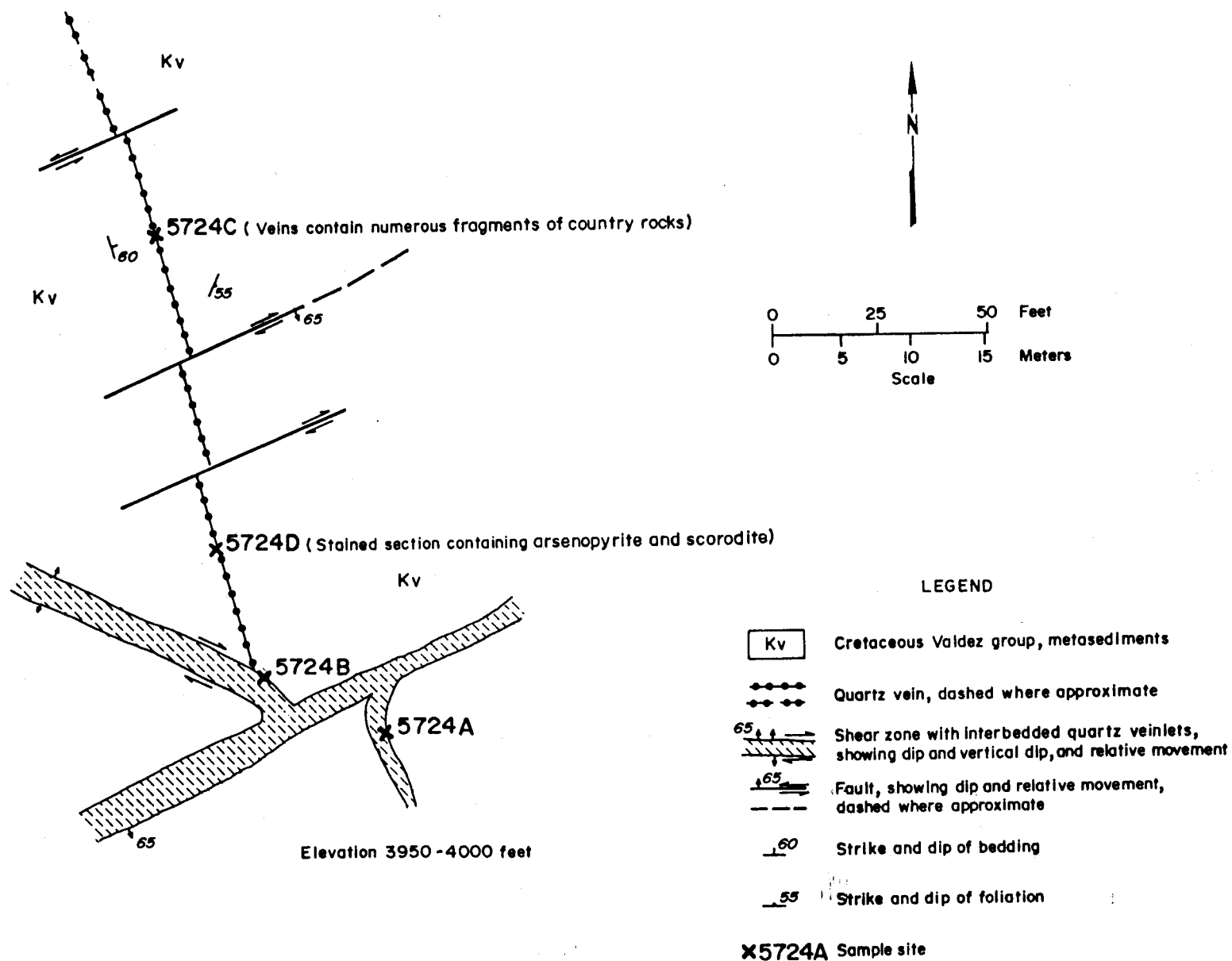


FIGURE C-27. Sample location map for the Gulch Creek No. 3 Occurrence (S-284).

TABLE C-86. - ANALYTICAL RESULTS - Gulch Creek No. 3 Occurrence

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5724A	Q.V.	Disc Chip	2 ft	<.03	0.1	4	38	23	10	ND	ND	ND	ND	ND	ND	Vein No. 1.	
5724B	Q.V.	Disc Chip	2 ft	0.04	0.2	5	18	34	950	ND	ND	ND	ND	ND	ND	Vein No. 1.	
5724C	Q.V.	Disc Chip	2 ft	<.03	0.1	6	17	64	810	ND	ND	ND	ND	ND	ND	Vein No. 2.	
5724D	Q.V.	Disc Chip	18 in.	<.03	0.1	4	9	53	780	ND	ND	ND	ND	ND	ND	Vein No. 2.	
5724E	Q.V.	Grab	NA	<.03	0.1	7	22	42	42	ND	ND	ND	ND	ND	ND	Top of Peak 1/4 mi south.	

444

NAME (other names): SS Lode Occurrence COMMODITIES: Au
(Double Lode SS Discovery)

LOCATION: Quadrangle: Seward C-6 NW 1/4 Sec 35 T 8N R 1E
 Meridian: Seward
 Geographic: This occurrence is located on Bertha Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-285	297	33	145	AA046876	NA
				AA046877	

HISTORY & PRODUCTION:

1959 - Originally located by Sherman Smith (6).

1981 - Location notice filed by Sherman Smith (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined resource potential.

REFERENCES:

6, 184, 191-192, 194

NAME (other names): Lyon Den No. 1 Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-6

NE 1/4 Sec 24 T 8N R 1E

Meridian: Seward

Geographic: This occurrence is located on Lyons Creek about
1/2 mi east of the Seward Highway.

REFERENCE NUMBERS:

Map
S-286

Kx
534

Tysdal
NA

MAS
NA

BLM
AA020299

MS
NA

HISTORY & PRODUCTION:

1978 - Originally located by C. Wills, J. Wills, and W. Wills (194).

1981 - Assessment filed (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

A placer sample (2485) was collected using a 3-in. suction dredge near the reported site of this occurrence. Coarse gold was recovered. Recovery was at the rate of 0.013 oz gold/hour. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Babe Occurrence

COMMODITIES: Uranium

LOCATION: Quadrangle: Seward D-8

? 1/4 Sec 20 T 8N R 2W

Meridian: Seward

Geographic: Located on the south side of Pass Creek near
its confluence with Resurrection Creek.

REFERENCE NUMBERS:

Map
S-287

Kx
279

Tysdal
27

MAS
298

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1956 - First located by Joe Troxinger (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 184, 191-192

NAME (other names): Palmer Creek No. 1
Occurrence

COMMODITIES: ?

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 24 T 8N R 2W
Meridian: Seward
Geographic: Located at the head of Palmer Creek at an
elevation of 3,500 ft.

REFERENCE NUMBERS:

Map
S-288

Kx
NA

Tysdal
26

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

New occurrence first reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Several quartz veins and pods occur in interbedded metasiltstone and graywacke. A USGS sample contained 3,000 ppm manganese, 2,000 ppm boron, and 70 ppm zinc (184).

BUREAU WORK:

The vicinity of this occurrence was examined in 1981. Significant mineralization was not located. Low mineral development potential.

REFERENCES:

184

NAME (other names): Hirshey-Lucky Strike Mine COMMODITIES: Au, Ag
(Swetmann)

LOCATION: Quadrangle: Seward D-7 NW 1/4 Sec 24 T 8N R 2W
Meridian: Seward
Geographic: Located near the head of Palmer Creek. The collapsed mill occurs at an elevation of 2,200 ft on the east side of Palmer Creek. The mine workings occur 3/4 mi south of the mill between elevations of 3,200 and 3,400 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-289	47	24	292	AA036344	NA

HISTORY & PRODUCTION:

1911 - Discovered by John Hirshey (140).

1911-21 - Operated by John Hirshey using a one-stamp mill (140).

1922 - Purchased by Alaska Mining Co., Anchorage.
Road construction from Hope to the mine.
New mill constructed. Included a jaw crusher, 5-stamp mill, wilfley table, and amalgamation plates (140).

1927 - Property reverted to Hirshey (140).

1927-31 - Sporadic production under Hirshey (140).

1931 - Cyanide plant constructed to rework tailings, unsuccessful (182, 140).

1931-39 - Sporadic production (140).

1940-present - No development work performed.

1981 - Mining location filed by Russ Miller and Edward Tallman (194).

Total recorded production (<u>193</u>)	Grade
Au 6,094 oz	Au: 0.7 oz/ton
Ag 4,699 oz	Ag: 0.67 oz/ton

RESOURCES:

2,000 tons - 1 to 1.25 oz gold/ton, 0.65 oz silver/ton.

OPERATING DATA:

Three working levels at elevations of 3,200, 3,300, and 3,400 ft were used to develop the mine. Currently all levels are mostly inaccessible due to caving and/or icing conditions which occur within a few feet of the portals. Figure C-89 is a sketch of the mine workings as they existed in 1931 (140).

Tuck (182) described the mine in 1931 as follows:

"The underground workings consist of three levels at vertical intervals of 100 ft. At the present time the upper tunnel, which lies about 30 ft below the discovery, has caved to a point within 30 ft of the portal, and therefore the greater part is inaccessible. The middle tunnel, about 500 ft in length, is in good condition and is used only for ventilation and safety, as practically all of the ground between the upper and middle levels has been stoped. The lower tunnel is the present working tunnel, and nearly all of the ground above it has been stoped. The underground work at present consists of development on the east face of the lower level and the stoping of the few remaining blocks above it."

GEOLOGIC SETTING:

The country rock is slate, the cleavage of which has a strike ranging from north to N35°E, with a dip of 60°-80°E. Near the surface, the slate may show an inclination as low as 40°E, owing to surface creep. Bedding in the slate was not visible underground, and the only place at which it was observed was at the portal of the lower tunnel, where it has been accented by weathering. It is folded at that location, but in general is horizontal to gently dipping.

Tuck (182) discussed the geologic setting in some detail.

The vein occurs in a curving and branching fracture that cuts across the cleavage of the slate at approximately right angles, so that the strike of the vein ranges from N45°W to west. The dip of the vein ranges from 20°N on the west end of the middle level to 75°NE on the east end. The average inclination is about 40°N. The width of the vein ranges from a few inches to 5 ft, with an average of about 18 in. On the lower level the vein is about 300-ft long, but it is not all minable. On the middle level it is about 350-ft long, but here also it is not all ore. The stoping length on both the lower and middle levels is about 200 ft. Measurements on the upper level were not available, but it is probable that the length was somewhat less, owing to the slope of the hill, as on the upper level the vein crops out and a portion has been eroded, whereas, on the lower level and probably also the middle level the vein pinches out before reaching the surface. This is due not

only to the slope of the hill but also to the fact that the ore shoot rakes to the northeast. On both the middle and the lower levels the vein curves, and the apex of the curve occurs in the middle of the shoot, so that structurally it has the appearance of a plunging nose. This curvature appears to increase in depth, and it is probable that the vein may split into two, there is a suggestion of this on the lower level, where the vein splits at the apex of the curve. On the dip of the vein developments have proved a distance of 350 ft, with ore still showing in the bottom of the lower level. Vertically, this means a proved depth of about 250 ft.

Associated with the vein is considerable gouge, sheared slate, and in a few places a vein breccia. Considerable postmineral movement has taken place, but this has been in the nature of small faults parallel to the vein, which have sheared the vein material, forming considerable gouge between the vein and the country rock, and at places have sheared the slate as well as the quartz. In a few places the movement has caused slicing in the vein closely parallel to the walls, giving it a greater width, but elsewhere it has caused pinching, making the vein exceedingly difficult to follow and greatly increasing the cost of the development. The walls are usually well-defined, and the ore breaks clean from them. In a few places both footwall and hangingwall stringers are abundant. In several places irregular masses of what appears to be a different quartz intercept the veins and increase the cost of development, as they carry little gold.

The mineralogy of the vein is typical of the district. The vein material consists chiefly of quartz with small amounts of calcite and ankerite. The metallic minerals, in order of abundance, are arsenopyrite, pyrite, galena, sphalerite, and free gold with the arsenopyrite greatly in excess of the others. The proportion of sulfides to vein quartz varies greatly from place to place, ranging from a fraction to 1 pct to as much as 20 pct, the average being about 2 pct. The gold occurs both free and combined with the sulfides, but there does not seem to be any direct relation between the amount of the sulfides and gold--in fact, the richer portions of the vein have the smaller percentage of sulfides.

The gold is almost entirely in the vein material. In some of the richer portions of the vein the wallrock may carry some gold but in general not enough to warrant mining. Assays are as high as several hundred dollars to the ton and usually are highest where the vein has a width of 6 to 12 in. It has been said that the upper level and the discovery cut contained very rich ore, portions of which

averaged several hundred dollars to the ton. It was rich enough to make a profit with a 1-stamp mill before a road was put into the district, when handling of the ore several times from the mine to the mill was necessary. It is probable that the ore mined from the lower level averages around \$40 a ton, although portions running much less than this have been unstopped. In a few places where the footwall stringers are abundant \$3 to \$5 channel samples have been obtained from 4-ft wide widths of quartz stringers and slate. As elsewhere, the mineralization has been erratic, and close sampling is necessary, although in general the oxidized and sheared quartz, which can be easily identified with the eye, it found to carry the most gold."

Figure C-29 is a photograph of the Lucky Strike vein where it is exposed in a small raise located in the upper level. The vein is banded in appearance, 18-in. thick, and strikes east-west with a dip of 60° to the north. Assays exceeding 1 oz gold/ton have been collected by the USGS, J. C. Roehm of the Territorial Department of Mines, and the Bureau from this location (samples 5640-5643).

BUREAU WORK:

During 1981, the Bureau sampled the accessible portions of the lower and upper levels of the mine (fig. C-29). Data from 5 samples (5639-5643) are listed on table C-87. A cross section showing the vein relationship to the three levels of workings is shown on figure C-30.

Due to the inaccessibility of the workings, it was not possible to obtain meaningful estimates of the mineral resources remaining in the mine. Based upon Tuck's (182) description, it appears unlikely that significant tonnages of high grade ore are accessible by existing workings. However, Tuck (182) points out:

"The mineral associations would suggest that there is an excellent chance of continuation in depth if suitable structural conditions exist. The fractures in the district are as a rule very erratic and do not persist over any great length or depth, although in general the depth exceeds the length."

A drilling program would be required to test this possibility. Mineralization of lower grade (<0.3 oz gold/ton) may not have been stoped and could exist in the current workings.

High mineral development potential for a small mine.

REFERENCES:

1-2, 6, 28-29, 62, 87-90, 108, 117, 120, 126, 140, 156-166, 168, 171-172, 176, 182, 184, 191-195

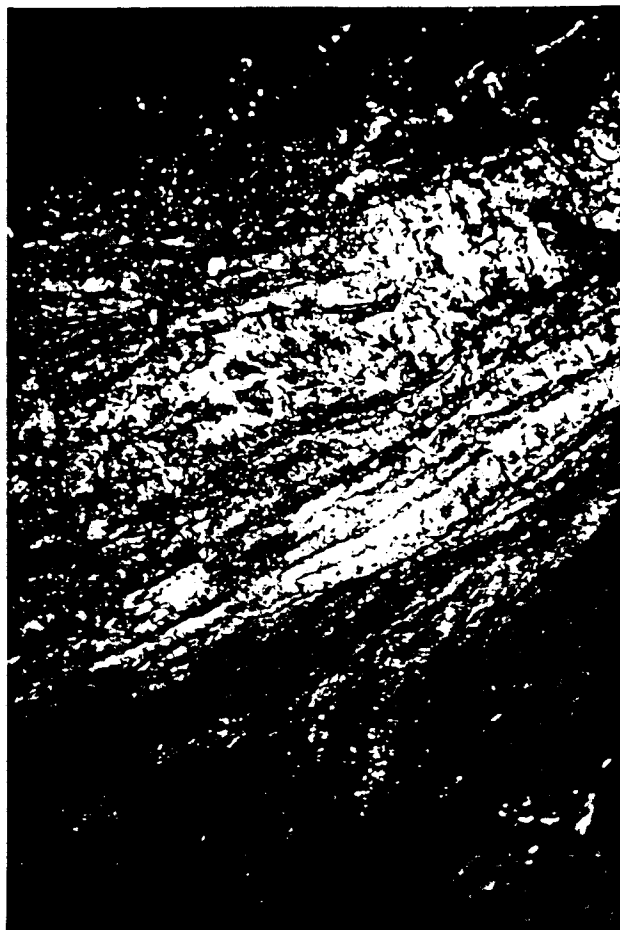


FIGURE C-28. Photograph of Hirshey-Lucky Strike Mine vein exposed in 3,400 ft level (S-289).

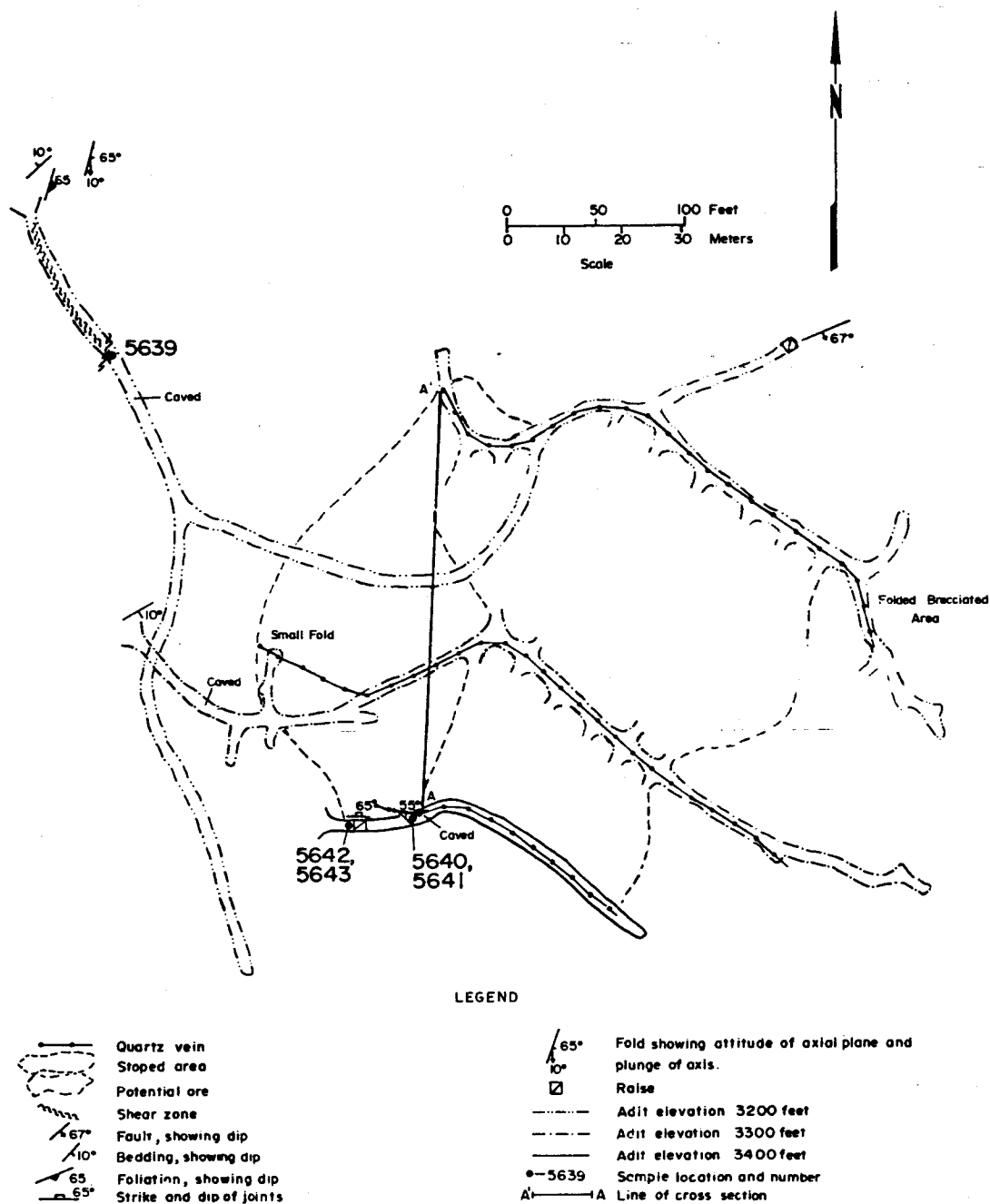


FIGURE C-29. Sample location map for the Hirshey-Lucky Strike Mine (S-289).

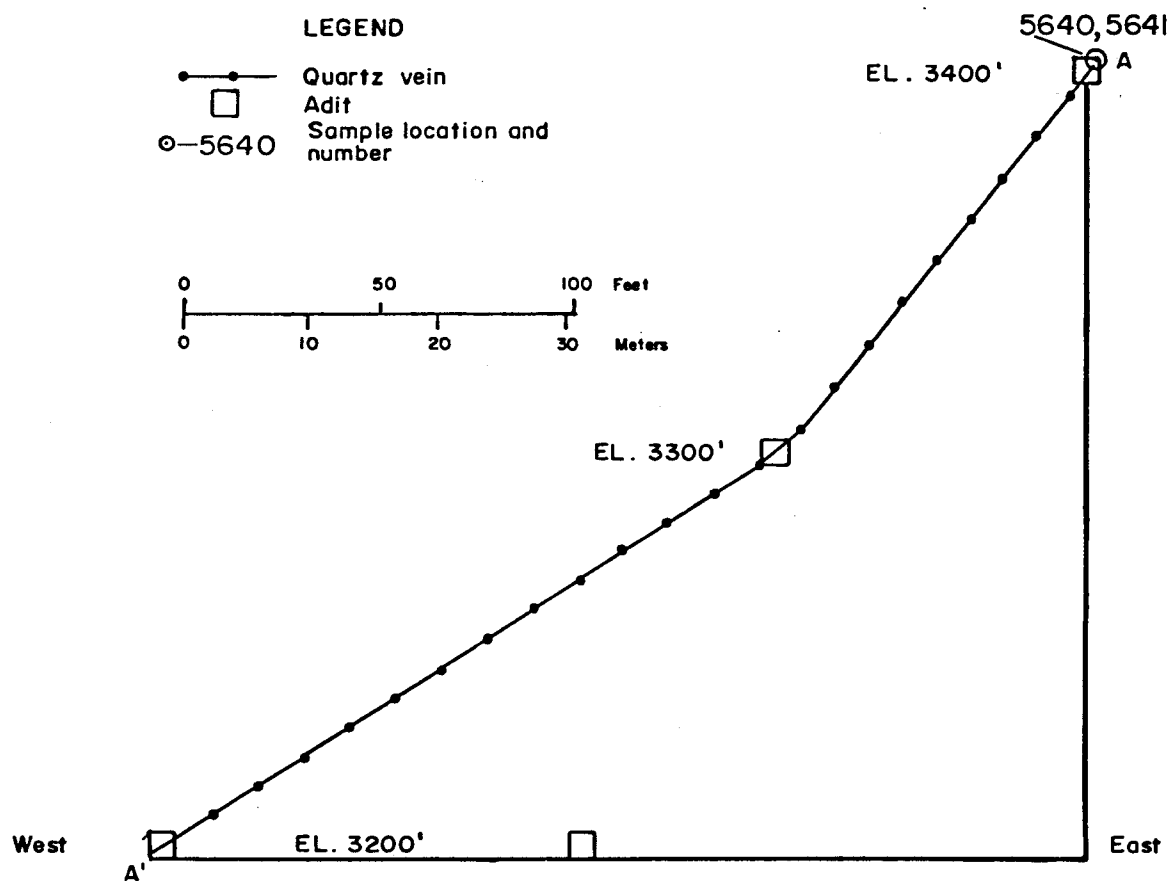


FIGURE C-30. Cross section showing vein relationship to mine levels in the Hirshey-Lucky Strike Mine (S-289).

TABLE C-87. - ANALYTICAL RESULTS - Hirshey-Lucky Strike Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
5639	Q.V.	Cont. Chip	3 in.	0.47	0.75	6	15	19	36	ND	<2	ND	<1	ND	ND	3,200 ft level	
5640	Q.V.	Disc Chip	8 in.	99.6	65.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,400 ft level	
5641	Q.V.	Disc Chip	8 in.	7.97 *.175	6.5 *<0.1	49 ND	415 ND	165 ND	300 ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	3,400 ft level ND	
5642	Q.V.	Cont Chip	24 in.	58.4 *1.21	27.0 *0.09	21 ND	1550 ND	1400 ND	6550 ND	ND ND	<2 ND	ND ND	3 ND	ND ND	ND ND	3,400 ft level ND	
5643	Q.V.	Cont Chip	3 in.	20.0 *.364	10.2 *<.01	33 ND	660 ND	130 ND	310 ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	3,400 ft level ND	

* ounces per ton

ND no data

954

NAME (other names): Teddy Bear Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SE 1/4 Sec 13 T 8N R 2W

Meridian: Seward

Geographic: Located approximately 1 mi northeast of the
Lucky Strike (S-289) workings at an elevation
of 3,200 ft.

REFERENCE NUMBERS:

Map
S-290

Kx
13T

Tysdal
23

MAS
29T

BLM
NA

MS
NA

HISTORY & PRODUCTION:

pre 1920 - Originally located by John Hirshey (6).

1931 - Relocated by Pete Kopovich, sampling done.
Sampled by Tuck (182).

1979 - Sampled and mapped by Mitchell (117).

No reported production.

RESOURCES:

Large reserves are possible but grade appears to be <0.05 oz gold/ton.

OPERATING DATA:

Workings consist of a 65 ft adit and surface trenching (182).

GEOLOGIC SETTING:

Mineralization consists of N15°E striking, 65°SE dipping fractured felsic dike averaging 3-ft wide and traceable for 6 miles along strike. Fractures in the dike are occupied by quartz-carbonate veins containing arsenopyrite, chalcopyrite, galena, sphalerite, and minor gold. The dike is commonly offset by right-lateral transverse faults with typical displacements of less than 20 ft. Samples collected by Mitchell (117) contained traces of gold and silver.

BUREAU WORK:

One sample (4431) was collected from the southern extension of the dike where it is exposed on the south side of the same valley that the prospect occurs in. A second sample (7156) was collected from a prospect pit on the same structure located 1/4 mi south of the Swetman-New Hope Mine (S-292). Data are listed on table C-88. Moderate mineral development potential.

REFERENCES:

6, 117, 182, 184, 191-192

TABLE C-88. - ANALYTICAL RESULTS - Teddy Bear Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4431	Fel. Plut Q.V.	Disc Chip Select	3 ft	0.14	<.2	5	35	40	500	ND	ND	ND	ND	ND	ND	ND
7156	Fel Plut	Grab	NA	0.117*	0.2*	8	71	51	635	ND	ND	ND	ND	ND	ND	ND

* ounces per ton

785h

NAME (other names): Palmer Creek No. 2 COMMODITIES: Au, Cu
Occurrence

LOCATION: Quadrangle: Seward D-7 SE 1/4 Sec 14 T 8N R 2W
 Meridian: Seward
 Geographic: Located on the west fork of Palmer Creek at
 an elevation of 2,900 ft.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-291	NA	25	NA	NA	NA

HISTORY & PRODUCTION:

New occurrence first reported by Tysdal (184).

No production.

RESOURCES: ND

OPERATING DATA:

Trenching is reported to occur nearby (184).

GEOLOGIC SETTING:

Mineralization consists of several quartz veins in graywacke which generally strike N62°-85°W and dip steeply to the north. A USGS sample contained 3 ppm silver and 370 ppm copper (184).

BUREAU WORK:

None. Economic mineralization has not been detected. Low mineral development potential.

REFERENCES:

117, 184

NAME (other names): Hirshey & Carlson Mine COMMODITIES: Au, Ag
(Swetman-New Hope,
Miller Mining Co.)

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 6 T 8N R 1W
Meridian: Seward
Geographic: Located on the east side of Palmer Creek 1 mi
north of the Hirshey Mill site, at an elevation
between 2,800 and 3,150 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-292	128	22	292	AA044894	NA

HISTORY & PRODUCTION:

1936 - Located by Robert Hatcher. Transferred to Mr. and Mrs. Swetman.
Test shipment reported to assay 2.3 oz gold/ton (142).

1936-41 - Active underground work and surface trenching (136).

Total reported production 94 oz gold, 24 oz silver (193).

RESOURCES:

Vein No. 1: 430 tons, 0.5 oz gold/ton, 0.3 oz silver/ton.
Vein No. 2: Undetermined but appears to have higher grade.

OPERATING DATA:

Workings include 2 adits, 5 open cuts, and a trail. The upper 3,000 ft level consists of 290 ft of drift and the lower at 2,920 ft above sea level has an additional 350 ft of workings (fig. C-31). Both levels were accessible in 1982. A bunkhouse, blacksmith shop, and equipment were destroyed by an avalanche in 1941 (136).

GEOLOGIC SETTING:

Mineralization consists of at least two quartz veins both of which have been developed. Vein No. 1 is 2- to 10-in. wide, strikes N28°E, dips 67°W and can be traced for 210 ft along strike in the upper level drift. This vein pinches and swells along a 1- to 3-ft wide shear zone and is characterized by considerable gouge along both walls. Metallic minerals include arsenopyrite, galena, sphalerite, and gold. Vein No. 2 is 3- to 24-in. wide, strikes N35°W, dips 35°NE and is exposed at the upper portal and in a trench extending northwesterly from the portal. Metallic minerals include arsenopyrite, pyrite, galena, sphalerite, and gold. Several other northwesterly striking veins occur in the area, but appear to be less mineralized (see 7155B). The host rock is mostly slate with foliation striking north and dipping 55°E.

BUREAU WORK:

This property was examined and sampled by the Bureau in August 1982. Data from eight samples collected (7154 A-D, 7155 A-D) are listed on table C-89. Sample locations are plotted on figure C-31.

The lower level was apparently driven to intercept vein No. 2. However, the crosscut may not have been driven far enough to intercept the vein if its average dip is less than 40°. Projections of various dip angles on figure C-31 illustrate this point.

Both veins contain significant concentrations of gold. Similar but unevaluated veins which occur nearby should be sampled. Moderate mineral development potential for a small mine.

REFERENCES:

6, 117, 136, 142, 184, 191-194

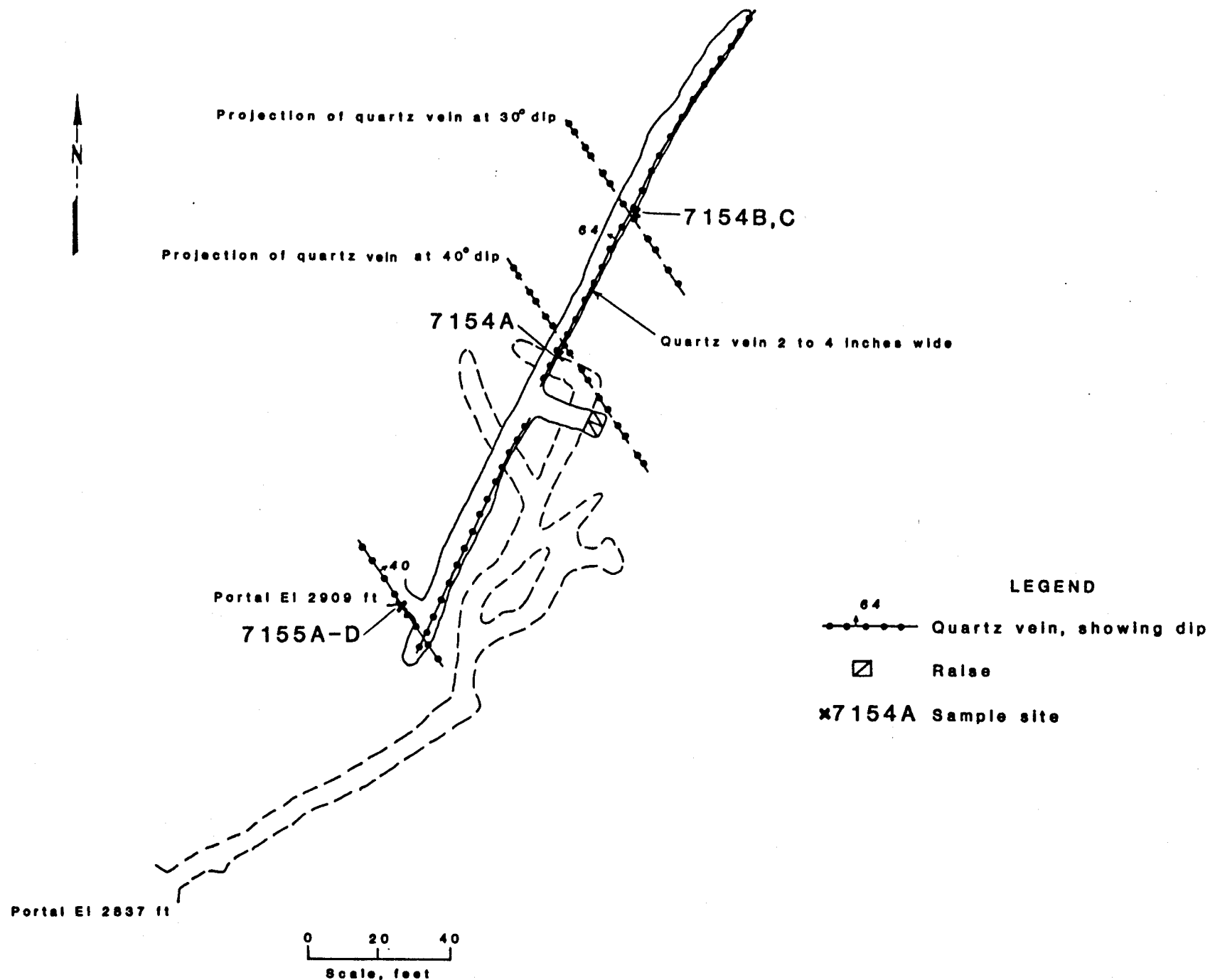


FIGURE C-31. Sample location map for the Hirshey and Carlson Mine (S-292).

TABLE C-89. - ANALYTICAL RESULTS - Hirshey and Carlson Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7154A	Q.V.	Channel	4 in.	0.552*	0.4*	19	460	330	3200	ND	ND	ND	ND	ND	ND	Vein No. 1 3,000 ft level
B	Q.V.	Channel	3 in.	0.322	0.2*	17	420	83	1800	ND	ND	ND	ND	ND	ND	Vein No. 1 3,000 ft level
C	Q.V.	Grab	NA	.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 1 3,000 ft level
D	Q.V.	Spec	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 1 3,000 ft level
7155A	Q.V.	Chip	11 in.	28.082*	9.3*	10	5300	200	1600	ND	ND	ND	ND	ND	ND	Vein No. 2 3,000 ft level
B	Q.V.	Grab	ND	0.070*	<0.2*	13	620	74	765	ND	ND	ND	ND	ND	ND	Vein No. 3 3,000 ft level
C	Q.V.	Grab	NA	.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 2 3,000 ft level, 5 lb sample
D	Q.V.	Spec	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Vein No. 2 3,000 ft sample

* ounces per ton

** oz gold/ton recovered by panning crushed debris collected from the vein and amalgamating the concentrate.

ND no data

462.

NAME (other names): Sunshine Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7

SW 1/4 Sec 1 T 8N R 2W

Meridian: Seward

Geographic: Located 500 to 1,500 ft west of the Palmer Creek road between 2,050 ft and 3,050 ft above sea level.

REFERENCE NUMBERS:

Map
S-293

Kx
37

Tysdal
21

MAS
290

BLM
AA036329
AA-36330

MS
NA

HISTORY & PRODUCTION:

1923 - Located by Pete Kopovich and Tom Sabel (182).

1976 - Mapped by Mitchell (117).

1979 - Evidence of assessment filed by F. S. Pettyjohn (194).

Total reported production, 347 oz gold (193).

RESOURCES:

350 tons, 0.1 oz gold/ton.

OPERATING DATA:

Three adits are located at elevations of 2,050, 2,700, and 3,050 ft. The lower level is caved at the portal, the middle level, reported to be 300 ft long (182) is caved 75 ft from the portal. The upper level is accessible and is 130 ft long (fig. C-32). Several pits occur nearby.

GEOLOGIC SETTING:

One irregular quartz vein 6- to 12-in. wide strikes E-W and dips vertically. A second nearly horizontal quartz vein 2- to 12-in. wide intersects the first in the 3,050 ft level. Metallic minerals include minor quantities of pyrite, chalcopryite, and gold. The host rock is mostly graywacke which strikes N10°E and dips 40°-60°W.

BUREAU WORK:

This prospect was examined in 1980 at which time surface samples were collected near the lower level. The upper level was examined and sampled in August 1982. Earlier attempts at locating the upper level had failed due to the presence of snow. Results from nine samples (4770, 5643, 7149-7153) are listed on table C-90 and locations are shown on figure C-32. The veins are relatively consistent but of low grade. Low to moderate mineral development potential.

REFERENCES:

6, 117, 136, 144, 182, 184, 191-192, 194

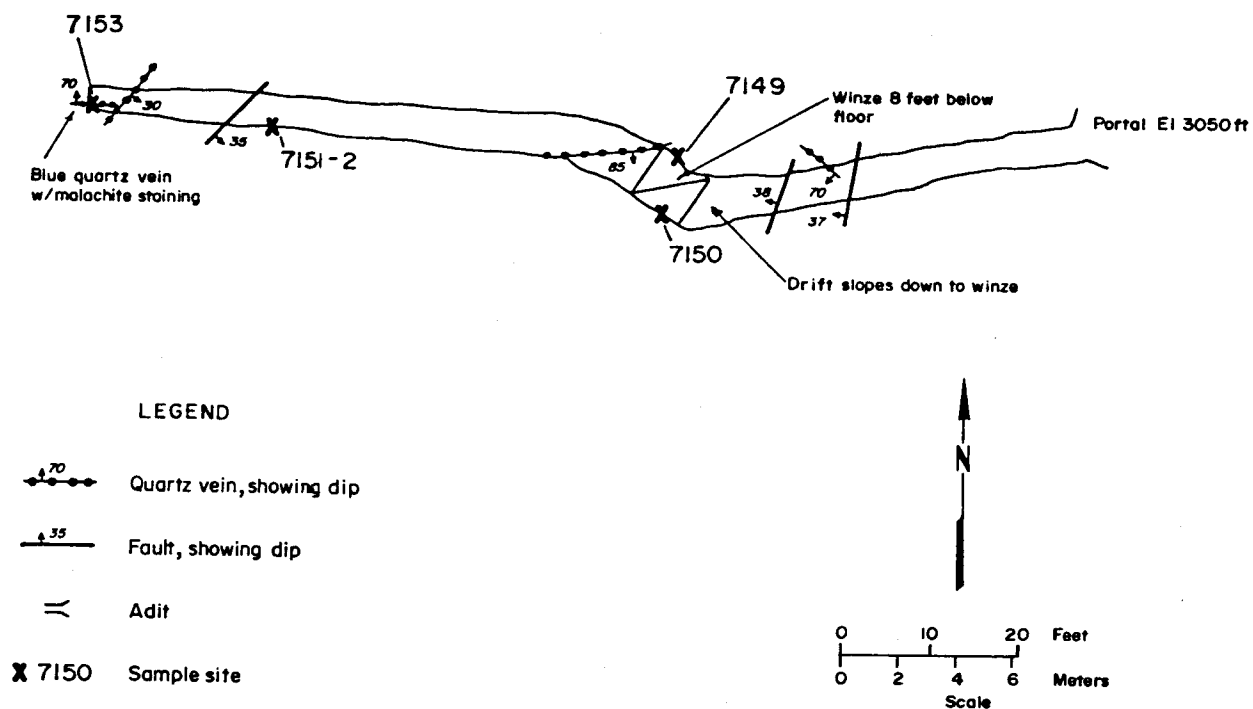


FIGURE C-32. Sample location map for the 3,050 ft level of the Sunshine Prospect (S-293)

TABLE C-90. - ANALYTICAL RESULTS - Sunshine Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											Descriptions		
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4770	Q.V.	Grab	NA	<0.03	0.27	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	2,700 ft level.	
5644	Q.V.	Grab	NA	2.61	0.7	3	13	43	66	ND	2	ND	ND	ND	ND	3,000 ft level.	
7149	Q.V.	Chip	12 in.	<.005*	<0.02*	6	8	12	31	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7150	Q.V.	Grab	NA	0.726*	0.3*	6	12	87	250	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7151	Q.V.	Chip	12 in.	0.034*	<.02*	10	300	285	290	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7152A	Q.V.	Chip	12 in.	0.034*	<.02*	22	38	150	260	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7152B	Q.V.	Spec Grab	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7153A	Q.V.	Chip	8 in.	0.008*	0.2*	355	165	96	570	ND	ND	ND	ND	ND	ND	3,050 ft level.	
7153B	Q.V.	Spec.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,050 ft level.	

* ounces per ton

NAME (other names): Downing Mine
(Francisco, Hershey,
Bonanza, Whistler)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SE 1/4 Sec 31 T 9N R 1W
Meridian: Seward
Geographic: Located between 2,000 and 2,600 ft above sea
level on the south side of Bonanza Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-294	TT	17-20	289	AA036339	NA
	350			AA036340	

HISTORY & PRODUCTION:

1931 - Tuck (182) sampled open cuts and adits.

1941 - Roehm (136) sampled open cuts and adits.

1977 - Mitchell (117) mapped and sampled open cuts and trenches.

1979 - Located by F. S. Pettyjohn (194).

Total recorded production: Gold 150 oz (193).

RESOURCES: ND

OPERATING DATA:

A cabin at 1,650 ft on the east side of Palmer Creek road was destroyed by an avalanche in 1980. Open cuts are located at 2,200 ft, 2,300 ft, and 2,580 ft. A 55 ft adit occurs at 2,300 ft and a 36 ft adit at 2,500 ft above sea level.

GEOLOGIC SETTING:

Mineralization consists of several small quartz-calcite veins striking north to N70°W and dipping steeply to the east. The veins are apparently associated with both faulting and a joint set. The veins are characteristically cut off by steeply dipping N70°E striking faults. Metallic minerals include arsenopyrite, galena, sphalerite, pyrite, and gold. The host rocks generally consist of slightly metamorphosed siltstone. A fractured felsic dike occurs nearby. High assays were reported by Mitchell (117) and Roehm (136).

BUREAU WORK:

This property was briefly examined and sampled in August of 1982. Sample data (7146-7148) are listed on table C-91. Additional evaluation may be warranted. Low mineral development potential.

REFERENCES:

6, 117, 136, 182, 184, 191-194

TABLE C-91. - ANALYTICAL RESULTS - Downing Mine

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
7146	Q.V.	Grab	NA	0.386*	0.2*	17	460	1280	520	ND	ND	ND	ND	ND	ND	2500 ft level, 55 ft adit dump.
7147	Q.V.	Chip	4 in.	<.005*	0.2*	47	19	105	76	ND	ND	ND	ND	ND	ND	2500 ft level, 55 ft adit.
7148	Q.V.	Grab	NA	0.332*	0.2*	6	620	141	92	ND	ND	ND	ND	ND	ND	2700 ft level caved 35 ft adit dump.

* ounces per ton

COMMODITIES: Au, Ag

Geographic: Located at an elevation of 2,400 ft, 800 ft east of the Kenai Star dike (S-296) on Coeur D'Alene Creek.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-295	135	16	NA	NA	NA

HISTORY & PRODUCTION:

1920-23 - Some underground work done (182).

1933 - Open cuts sampled by Tuck (182). Underground workings inaccessible.

1973 - Claim located for Black Creek Mining Co. by Edward E. Ellis (6).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings are reported to consist of open cuts (182).

GEOLOGIC SETTING:

Mineralization is reported to consist of discontinuous quartz veins 1 to 6-in. wide developed in a 10-ft wide shear zone (182). The quartz contains visible pyrite. The host rock is a slate. Assays are reported to contain traces of gold and silver (182).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 117, 182, 184, 191

NAME (other names): Kenai Star Prospect COMMODITIES: Au, Ag
(French)

LOCATION: Quadrangle: Seward D-7 SE 1/4 Sec 30 T 9N R 1W
Meridian: Seward
Geographic: Located on the south side of Coeur D'Alene
Creek at an elevation between 2,200 and 2,400
ft.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-296	134	15	288	NA	NA
	136				

HISTORY & PRODUCTION:

1931 - Two adits, trenching, and a 5-stamp mill reported to be on site
by Tuck (182).

1973 - Located by F. S. Pettyjohn (6).

1979 - Sampled and mapped by Mitchell (117).

Reported production 24 oz gold.

RESOURCES: ND

OPERATING DATA:

Workings consist of a 60 ft drift at 2,250 ft above sea level which is
accessible, a 120 ft drift at 2,200 ft above sea level which is
inaccessible, trenching, and a road.

GEOLOGIC SETTING:

Mineralization consists of a fractured felsic dike up to 6-ft wide
recemented by slightly mineralized quartz-carbonate veins. The dike
strikes N10°-30°E and dips vertically. Quartz veins mostly strike
N15°-55°W and dip steeply east. Metallic minerals in the quartz
include arsenopyrite, pyrite, chalcopyrite, sphalerite, galena, and
gold. The dike rock contains arsenopyrite and pyrite. Host rock is
slate with foliation striking N10°E and dipping vertically. Ore grade
appears to be low. Highest values reported by Mitchell (117) were
between 0.3 and 0.4 oz gold/ton.

BUREAU WORK:

This property was briefly examined and sampled in 1979. Sample data
(4433-4435, 4451) are listed on table C-92 and locations are shown on
figure C-33. Low mineral development potential.

REFERENCES:

6, 79, 117, 182, 184, 191

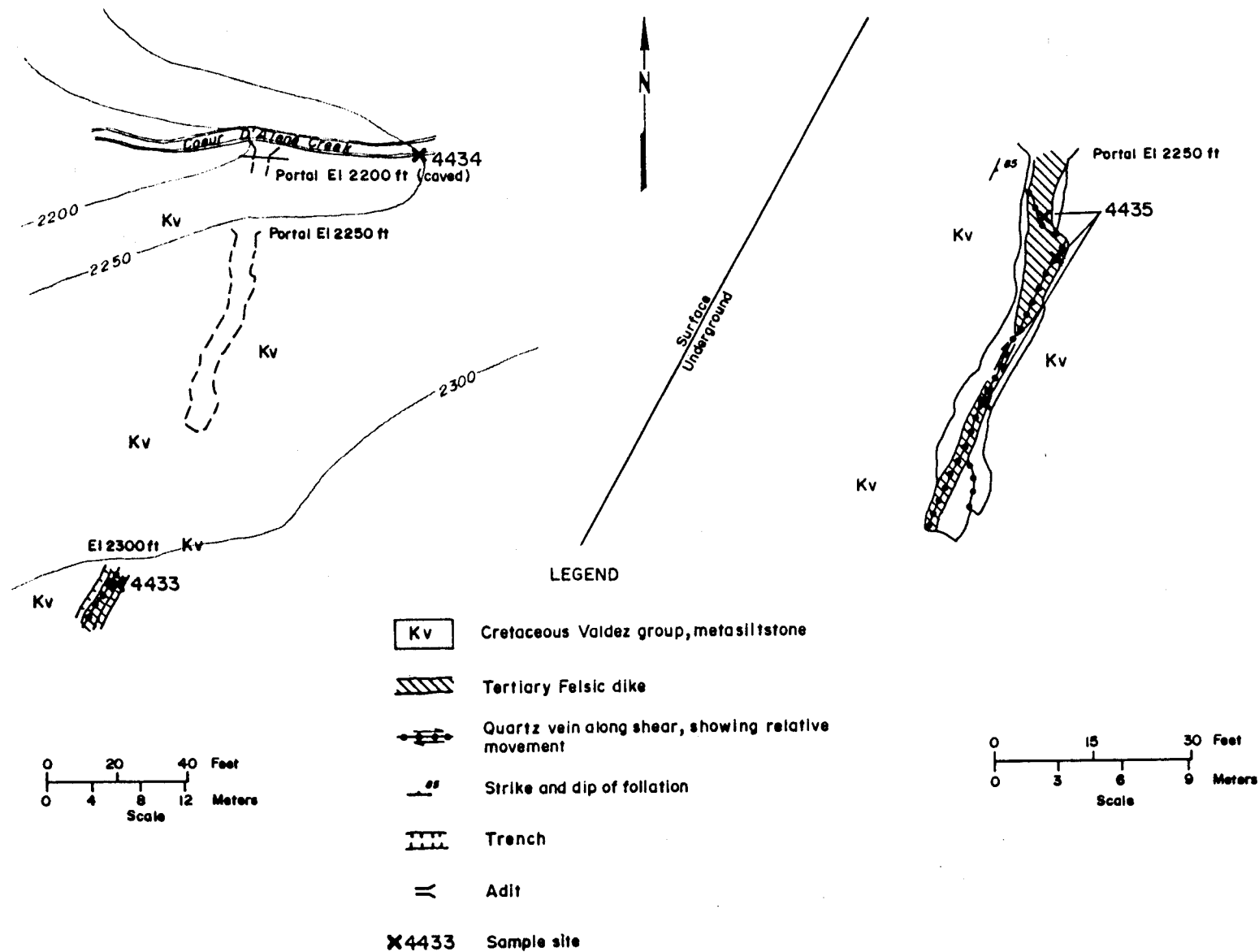


FIGURE C-33. Sample location map for the Kenai Star Prospect (S-296).

TABLE C-92. - ANALYTICAL RESULTS - Kenai Star Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W		
4433	Fel.Plut Q.V.	Disc Chip	3 ft	5.1	2.2	5	655	30	ND	ND	ND	ND	ND	ND	ND	ND	Surface.
4434	Str. Sed	Pan	NA	<0.04	.2	50	20	110	ND	ND	ND	ND	ND	ND	ND	ND	No colors recovered.
4435	Fel.Plut Q.V.	Disc Chip	NA	0.05	.2	15	10	30	ND	ND	ND	ND	ND	ND	ND	ND	Upper adit.
4451	Str.Sed.	Pan	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3 v. fine colors recovered.

NAME (other names): Robinson & Bowman Prospect
(Lost Frontier)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 22 T 9N R 2W
Meridian: Seward
Geographic: Located on the south side of Palmer Creek
3/4 mi upstream from Resurrection Creek at
an elevation of 650 ft approximately 75 ft
above creek level.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-297	115	14	NA	AA029270	NA

HISTORY & PRODUCTION:

Originally located by A. O. Robinson and C. P. Bowman (182).
Restaked by Pete Kopovich prior to 1931 (182).

1933 - 220 ft adit reported of which only 150 ft was accessible (182).

1974 - Relocated by Ken Spearin (6).

1980 - Evidence of assessment filed by Willie Davidson (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

A 220 ft adit and an old cabin 1,000 ft east of the portal occur on the prospect.

GEOLOGIC SETTING:

Mineralization consists of a quartz vein up to 6-in. wide striking NE and dipping 60°SE in interbedded slate and graywacke which strikes N10°E and dips 45-60°E. Gangue consists of quartz and calcite. Metallic minerals include arsenopyrite, galena, and minor gold.

BUREAU WORK:

None. An investigation of this property may be warranted as no recent reports have been written. Undetermined mineral development potential.

REFERENCES:

6, 182, 184, 191, 194

NAME (other names): Red Hat Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-8

SE 1/4 Sec 16 T 9N R 2W

Meridian: Seward

Geographic: Located on the patented Paystreak Placer Claim.

REFERENCE NUMBERS:

Map
S-298

Kx
78
480

Tysdal
13

MAS
NA

BLM
NA

MS
1451

HISTORY & PRODUCTION:

ND

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 184, 191

NAME (other names): Nearhouse Mine

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7

SE 1/4 Sec 18 T 9N R 1W

Meridian: Seward

Geographic: Located on the south side of the divide between Bear Creek and Palmer Creek at elevations between 2,800 and 3,100 ft.

REFERENCE NUMBERS:

Map
S-299

Kx
38

Tysdal
T2

MAS
NA

BLM
AA047585
AA047586

MS
NA

HISTORY & PRODUCTION:

1931 - Visited by Tuck (182).

1931-43 - Development work with minor production (117).

1982 - Relocated by Roger Moore and others (194).

Recorded production: Gold - 102 oz, silver - 3 oz (193).

RESOURCES:

6,400 tons - 0.2 oz gold/ton, 0.3 oz silver/ton.

OPERATING DATA:

A partially overgrown trail leads from Palmer Creek Road to collapsed buildings at 2,800 ft, a 35 ft adit and a 450 ft adit with an 80 ft winze at 3,050 ft and 3,100 ft, respectively (fig. C-34). Some equipment including a Worthington Compressor remain on site. Dynamite and caps occur in the west drift of the 3,100 ft level.

GEOLOGIC SETTING:

The mineralization consists of a banded and brecciated quartz vein averaging 20-in. wide along the developed portion of the drift. The vein strikes N50°-80°W and dips 60°-90°N. The banding is dark gray and is believed to be attributed to organic material. Metallic minerals include small amounts of arsenopyrite, galena, sphalerite, pyrite, and gold collectively making up <0.5 pct of the vein material. The vein is cut off at both ends by transverse (left-lateral) faults. However, the vein has good continuity to the surface and to a depth of over 80 ft in the winze. The host rock consists of well-bedded slightly metamorphosed siltstone and sandstone which strike N15°E and dip 60°W at the 3,100 ft portal level. They contain abundant sedimentary features suggesting that the bedding is overturned at the portal. Felsic dikes occur nearby on the surface and one was intercepted in the east drift.

BUREAU WORK:

Surface and subsurface sampling and some mapping in conjunction with USGS personnel (fig. C-33) were done in 1980 and 1981. Data indicates that the vein is too low grade to be feasible to mine at present gold prices. However, the vein is continuous for 250 ft or more along strike, 100 ft to the surface and 80 ft down dip. Significant resource tonnages are possible. Results from 24 samples (4436, 4755-4769, 5610, 5801-5807) are listed on table C-93. Locations for samples collected in the 3,100 ft level are shown on figure C-34. Moderate mineral development potential for a small mine.

REFERENCES:

6, 117, 136, 182, 184, 191, 193-194

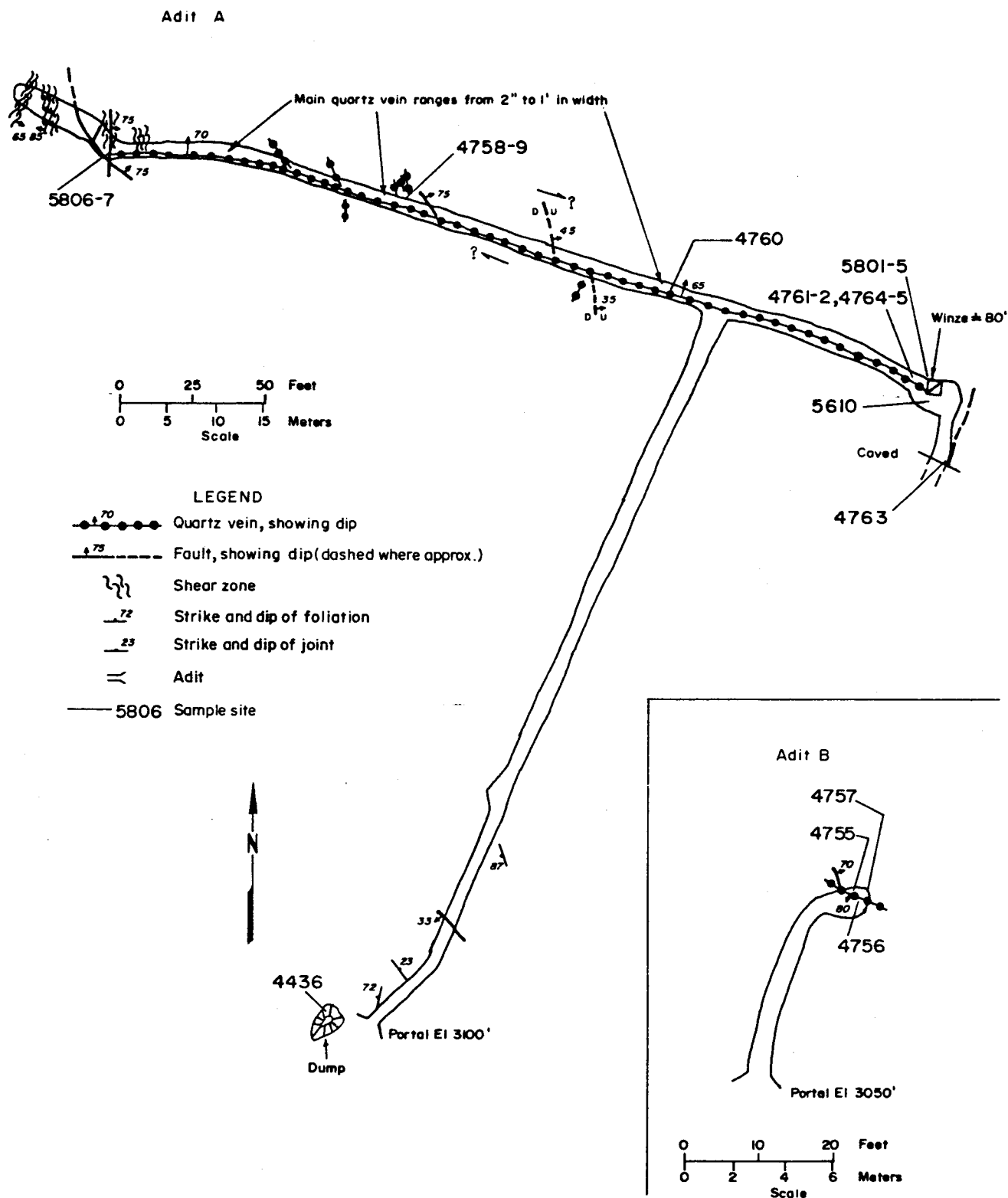


FIGURE C-34. Sample location map for the Nearhouse Mine (S-299).

TABLE C-93. - ANALYTICAL RESULTS - Nearhouse Mine - Continued

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												W	Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn			
4765	Metased	Grab	NA	0.05	2.0	ND	ND	ND	125	ND	ND	ND	ND	ND	ND	ND	East drift 3100 ft hangingwall.
4766	Felsic Dike	Grab	NA	<0.03	0.16	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	Surface 3950 ft.
4767	Felsic Dike	Grab	NA	0.04	0.5	42	7	51	115	ND	ND	ND	ND	ND	ND	ND	Surface 3950 ft.
4768	Felsic Dike	Grab	NA	0.03	0.19	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	Surface 3950 ft.
4769	Q.V.	Grab	NA	0.25	0.44	8	14.5	300	425	ND	ND	ND	ND	ND	ND	ND	Surface 4000 ft.
5610	Q.V.	Spec	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5801	Q.V.	Cont. Chip	16 in.	*	*	18	870	300	ND	ND	<2	ND	ND	ND	ND	ND	Winze at 31 ft.
5802	Q.V.	Cont. Chip	10 in.	0.07	0.2	10	260	135	ND	ND	3	ND	ND	ND	ND	ND	Winze at 81 ft.
5803	Metased	Cont. Chip	2 ft	0.23	1.8	43	24	145	ND	ND	2	ND	ND	ND	ND	ND	Winze at 81 ft. Hangingwall.
5804	Metased	Cont. Chip	2 ft	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Winze at 81 ft Footwall. No data received.
5805	Q.V.	Cont. Chip	18 in.	0.385	0.5	71	34	180	250	ND	2	ND	ND	ND	ND	ND	Winze at 46 ft.
5806	Q.V.	Cont. Chip	8 in.	11.4	5.1	22	345	270	1900	ND	2	ND	ND	ND	ND	ND	West drift.
5807	Q.V.	Cont. Chip	3 in.	6.4	5.1	18	410	115	440	ND	2	ND	ND	ND	ND	ND	West drift.
4436	Q.V.	Grab Disc.	NA	7.3	12	10	330	85	ND	ND	ND	ND	ND	ND	ND	ND	Dump of 3100 ft level.
4755	Q.V.	Chip Disc.	18 in.	0.15	4.5	ND	ND	ND	2600	ND	ND	ND	ND	ND	ND	ND	Face, 3050 ft level.
4756	Metased	Chip Disc.	18 in.	<0.03	4.0	ND	ND	ND	190	ND	ND	ND	ND	ND	ND	ND	Face, 3050 ft level, footwall.
4757	Metased	Chip	6 in.	0.05	0.89	ND	ND	ND	160	ND	ND	ND	ND	ND	ND	ND	Face, 3050 ft level, hangingwall.
4758	Q.V.	Grab	NA	<0.03	0.49	ND	ND	ND	37	ND	ND	ND	ND	ND	ND	ND	West drift 3100 ft level.
4759	Q.V.	Disc. Chip	6 in.	0.75	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	" " "
4760	Q.V.	Disc. Chip	14 in.	3.15	3.3	ND	ND	ND	2050	ND	ND	ND	ND	ND	ND	ND	" " "
4761	Q.V.	Cont. Chip	36 in.	15.3	0.79	10	810	450	345	ND	ND	ND	ND	ND	ND	ND	East drift 3100 ft level.
4762	Q.V.	Grab	NA	3.05	5.0	ND	ND	ND	150	ND	ND	ND	ND	ND	ND	ND	" " "
4763	Felsic Dike	Grab	NA	1.45	3.4	10	135	92	480	ND	ND	ND	ND	ND	ND	ND	" " "
4764	Metased	Grab	NA	0.08	0.92	ND	ND	ND	89	ND	ND	ND	ND	ND	ND	ND	East drift 3100 ft footwall.

* ounces per ton

NAME (other names): Mighty Prospect

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7

SE 1/4 Sec 12 T 9N R 2W

Meridian: Seward

Geographic: Located at an elevation of 2,600 ft about
1,000 ft N70°W from the turn at the head of
Bear Creek.

REFERENCE NUMBERS:

Map
S-300

Kx
328

Tysdal
11

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

Property apparently developed after 1931 as Tuck (182) made no mention of it.

No reported production.

RESOURCES: ND

OPERATING DATA:

Currently accessible 90 ft adit (fig. C-35).

GEOLOGIC SETTING:

Mineralization consists of quartz veins occupying fractures in a felsic dike which generally strikes N15°W and dips 55°W. The veins are highly irregular and range up to 1-ft wide. The dike rock contains pyrite and arsenopyrite.

BUREAU WORK:

The adit was sampled and mapped in 1982 (fig. C-35). Data from samples (5740-5794) are listed on table C-94. Low mineral development potential.

REFERENCES:

6, 45, 117, 182, 184, 191

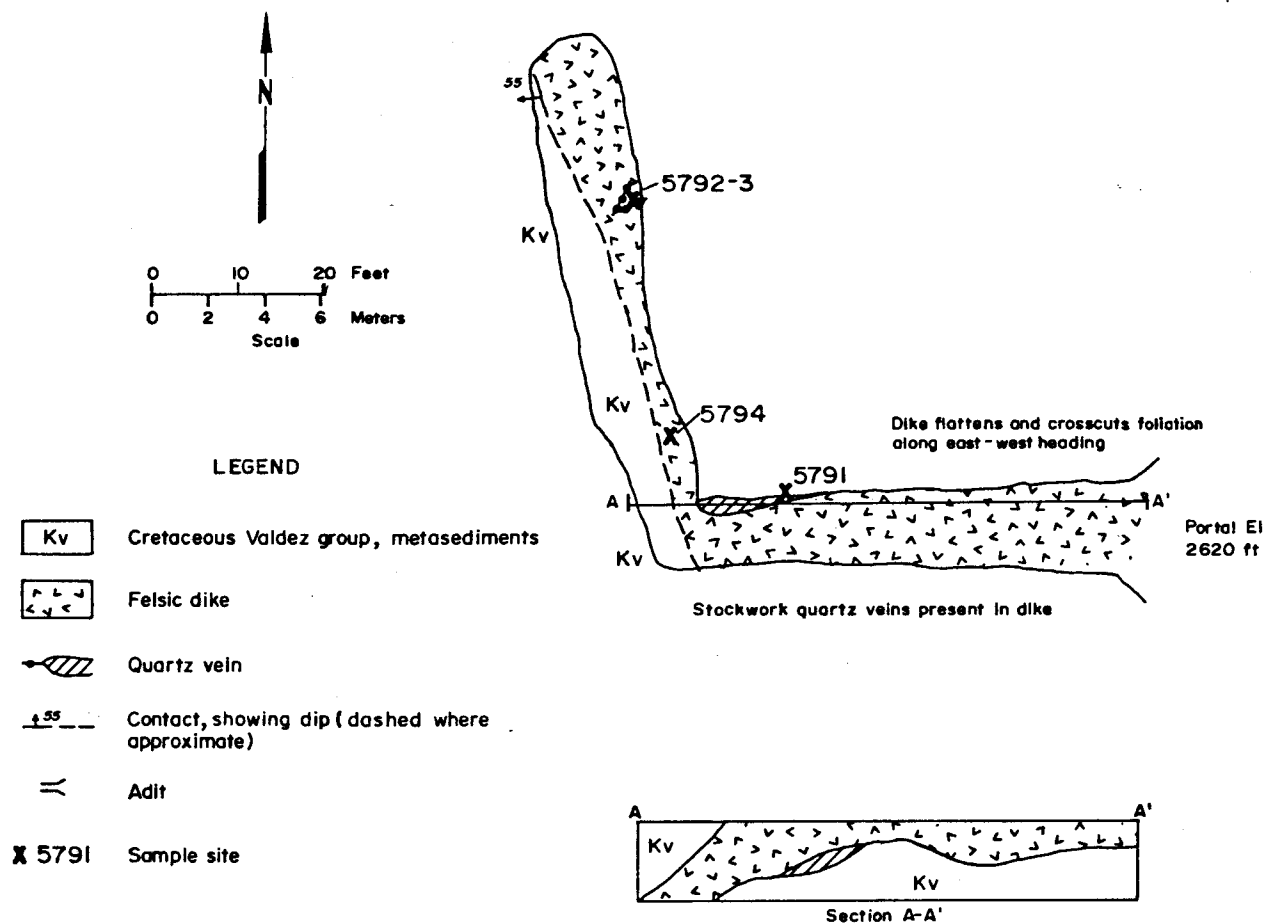


FIGURE C-35. Sample location map for the Mighty Prospect (S-300).

TABLE C-94. - ANALYTICAL RESULTS - Mighty Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5790	Q.V.	Grab Cont.	NA	1.82	1.2	22	34	22	310	ND	2	ND	ND	ND	ND	Dump
5791	Q.V.	Chip Cont.	12 in.	0.04	1.8	11	14	105	1290	ND	2	ND	ND	ND	ND	Adit
5792	Q.V.	Chip Disc.	2 ft	0.02	1.3	9	7	6	1330	ND	2	ND	ND	ND	ND	Adit
5793	Q.V.	Chip	6 in.	0.03	1.0	6	10	11	1990	ND	2	ND	ND	ND	ND	Adit
5794	Felsic Dike	Grab	NA	0.03	0.6	20	9	18	230	ND	2	ND	ND	ND	ND	Adit

NAME (other names): Gold Stamp Prospect COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 7 T 9N R 1W
 Meridian: Seward
 Geographic: Located on Bear Creek at an elevation of
 2,200 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-301	T25	T0	NA	NA	NA

HISTORY & PRODUCTION:

1912-14 - Considerable underground work reported and a 5-stamp mill
 was erected (182).

1979 - Sampled by Mitchell (117).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Two compartment shaft reported to be 30-ft deep, currently flooded
(120). A short 6 ft adit is located 3/8 mi west of the shaft.

GEOLOGIC SETTING:

Mineralization consists of a quartz vein (not currently exposed) up to
16-in. wide in graywacke and a felsic dike. Metallic minerals include
pyrite, arsenopyrite, galena, sphalerite, chalcopyrite, and gold.

BUREAU WORK:

Surface samples were collected from the dump in 1981. The workings
were inaccessible and could not be evaluated. Data from samples
(5788, 5789, 4795) are listed on table C-95. Undetermined mineral
development potential.

REFERENCES:

6, 117, 120, 182, 184, 191

TABLE C-95. - ANALYTICAL RESULTS - Gold Stamp Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5788	Q.V.	Grab	NA	6.2	24.6	575	5700	4150	8800	ND	2	ND	26	ND	ND	High grade from dump.
5789	Rock	Grab	NA	0.86	1.7	20	23	130	200	ND	2	ND	2	ND	ND	Graywacke w/Q.V. stockwork.
5795	Gravel	Pan Conc.	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Located below dump.

NAME (other names): Coon and Plowman Prospect COMMODITIES: Ag

LOCATION: Quadrangle: Seward D-7 SE 1/4 Sec 1 T 9N R 2W
 Meridian: Seward
 Geographic: Located on the north side of Bear Creek in a
 small tributary about 2 miles from the head
 of Bear Creek at an elevation of 1,600 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-302	126	<u>9</u>	173	NA	NA

HISTORY & PRODUCTION:

1914 - open cut at vein exposure (108).

1933 - 40 ft adit present (182).

No recorded production.

RESOURCES: ND

OPERATING DATA:

Workings reported to consist of a 40 ft adit and a cabin located 200 ft below the portal (182).

GEOLOGIC SETTING:

Quartz veins 2- to 12-in. wide striking N30°E and dipping vertically nearly parallel to foliation in the slate and graywacke host rock. Gangue consists of quartz and minor calcite. Metallic minerals include arsenopyrite, pyrite, and galena. High tenor in silver reported.

BUREAU WORK:

This property was visited in 1981. Workings are inaccessible. No samples were taken. Undetermined mineral development potential.

REFERENCES:

6, 108, 117, 182, 184, 191-192

NAME (other names): Taylor Prospect
(Bear Creek #1-3)

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 1 T 9N R 2W
Meridian: Seward
Geographic: Located on Bear Creek at an elevation of
1,400 ft about 2 1/4 mi from its head.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-303	122	87	NA	AA042665-67	NA

HISTORY & PRODUCTION:

Located prior to 1906 (6). 130 ft adit constructed by 1931 (182).

1981 - Location notice filed by Charles Davis, Charles Gundlach, and
Jerry Davis (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

Workings include a 130 ft adit which is inaccessible (182).

GEOLOGIC SETTING:

Mineralization is reported to be a 10-in. wide quartz vein striking
north and dipping 30°W in slate. The vein is banded in appearance,
contains arsenopyrite, sphalerite, galena, and gold, and is reportedly
exposed in the creek bed.

BUREAU WORK:

This property was visited in 1981. The adit is currently inaccessible
and no samples were collected. Undetermined mineral development
potential.

REFERENCES:

6, 117, 184, 191, 194

NAME (other names): Lucky Lode Prospect COMMODITIES: Au, Ag
(Busted Flat)

LOCATION: Quadrangle: Seward D-7 SW 1/4 Sec 12 T 9N R 2W
Meridian: Seward
Geographic: Located on the divide between Bear and Palmer
Creeks at an elevation of 3,450 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-304	5TT	NA	NA	NA	NA

HISTORY & PRODUCTION:

1979 - Investigated by Mitchell (117).

No reported production.

RESOURCES: ND

OPERATING DATA:

Several small prospect pits.

GEOLOGIC SETTING:

Quartz vein. Mitchell (117) reports that samples of the vein contained trace amounts of gold and silver.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 117, 191

NAME (other names): Wildhorse Quarry

COMMODITIES: Ornamental Stone

LOCATION: Quadrangle: Seward D-8

1/4 Sec 4 T 9N R 2W

Meridian: Seward

Geographic: These claims are located at the lower end of Wildhorse Creek just above its junction with Resurrection Creek.

REFERENCE NUMBERS:

Map
S-305

Kx
T06

Tysdal
NA

MAS
NA

BLM
AA042573
AA042578

MS
NA

HISTORY & PRODUCTION:

1981 - Location notice filed by Roger Moore, Christopher Moore and Larry Anderson (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Johnson Creek Prospect COMMODITIES: Au

LOCATION: Quadrangle: Seward D8 NW 1/4 Sec 14 T 10N R 3W
 Meridian: Seward
 Geographic: Located on the Gull Rock trail about 4 mi west
 of Hope.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-307	NA	NA	NA	NA	NA

HISTORY & PRODUCTION:

ND

RESOURCES: ND

OPERATING DATA:

Collapsed buildings are present.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

This report

NAME (other names): Cowan Mountain
Occurrence

COMMODITIES: Ornamental Stone

LOCATION: Quadrangle: Seward D-7 1/4 Sec 34 T 10N R 2W
Meridian: Seward
Geographic: These claims are located on the east side of
Palmer Creek Road just beyond the airport
turnoff.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-306	416	NA	NA	AA045111	NA

HISTORY & PRODUCTION:

1981 - Location notices filed by Roger Moore and Larry Anderson
(194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Hope Mountain Occurrence COMMODITIES: Rock

LOCATION: Quadrangle: Seward D-8 1/4 Sec 20,24 T 10N R 2W
 Meridian: Seward
 Geographic: This claim is located on the Gull Rock Trail
 1/2 mi northwest of the trailhead.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-308	641	NA	NA	AA044799	NA

HISTORY & PRODUCTION:

1981 - Location notice filed by Roger Moore (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Hope Road Quarry

COMMODITIES: Facing Stone

LOCATION: Quadrangle: Seward D-7

NW 1/4 Sec 25 T 10N R 2W

Meridian: Seward

Geographic: This quarry is located on the north side of the Hope Highway 1/2 mi east of Windy Point.

REFERENCE NUMBERS:

Map
S-309

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1977-80 - Small quantities sold by the U.S. Forest Service to be used as fireplace facing stone (195).

RESOURCES:

Limited quantities of suitable rock are believed to remain.

OPERATING DATA:

Open pit.

GEOLOGIC SETTING:

The bedrock consists of metasandstone with a well-developed rock cleavage which causes it to break readily into thin slabs suitable for facing stone.

BUREAU WORK:

A brief surface examination was made in 1981.

REFERENCES:

195

NAME (other names): Connoly Prospect

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-7

NW 1/4 Sec 11 T 9N R 1W

Meridian: Seward

Geographic: Location shown on USGS 1951 1:63,360 Seward
D-7 quadrangle.

REFERENCE NUMBERS:

Map
S-310

Kx
402

Tysdal
7

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

ND

RESOURCES: ND

OPERATING DATA:

No reported production.

GEOLOGIC SETTING:

No data available.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 117, 184, 191

NAME (other names): Tina Baby Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-7

1/4 Sec 2 T 9N R 1W

Meridian: Seward

Geographic: This claim is located on the south side of
Turnagain arm just west of Snipers Point.

REFERENCE NUMBERS:

Map
S-311

Kx
588

Tysdal
NA

MAS
NA

BLM
AA042009

MS
NA

HISTORY & PRODUCTION:

1981 - Location notice filed by Thomas F. Byron (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

ND

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 191, 194

NAME (other names): Kenai Lu Prospect
Kirsten 1 & 2

COMMODITIES: Au, Ag

LOCATION: Quadrangle: Seward D-7
Meridian: Seward

1/4 Sec 10 T 9N R 1E

Geographic: Located at an elevation of approximately 900
ft on Sawmill Creek.

REFERENCE NUMBERS:

Map
S-3T2

Kx
3T7

Tysdal
6

MAS
257

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1904 - First reported in USGS report (119).

1906 - Arrastre mill erected capable of handling 700 lbs/day.
Nineteen tons of ore processed yielded approximately
25 oz gold (120).

1981 - Placer claims staked in area by Marvin Self.
Lode claims staked by Roy Roen (194).

Total reported production 25 oz gold (120).

RESOURCES: ND

OPERATING DATA:

Seventy ft adit and mill reported (120). The portal is caved and the
mill is demolished.

GEOLOGIC SETTING:

Mineralization consists of an irregular quartz vein up to 4-ft thick
striking NE and dipping 70°SE. Gangue consists mostly of quartz.
Metallic minerals include arsenopyrite, pyrite, sphalerite, galena,
and gold. The main vein is reportedly cut off by faults on both ends.

BUREAU WORK:

Four samples (2441, 2553-45) were collected from the vein where is is
exposed in and adjacent to the creek in 1982. Mineralization appears
to be of low grade. Data are listed in table C-96. Low mineral
development potential.

REFERENCES:

6, 108, 119-120, 184, 191-192, 194

TABLE C-96. - ANALYTICAL RESULTS - Kenai Lu Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)											Descriptions	
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
2441	Q.V.	Grab	NA	0.15	0.2	8	15	43	195	ND	ND	ND	ND	ND	ND	Float from mouth of creek.
2443	Q.V.	Chip	18 in.	0.03	0.1	20	16	53	225	ND	ND	ND	1	ND	ND	Portal site.
2444	Q.V.	Select Grab	NA	1.54	0.5	350	1450	1350	315	ND	ND	ND	4	ND	ND	Ore stock pile.
2445	Q.V.	Chip	24 in.	0.07	1.3	53	215	44	78	ND	ND	ND	3	ND	ND	Vein in creek.

493.

COMMODITIES: Au

Geographic: Located on Slate Creek at an elevation of approximately 1,500 ft.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-313	NA	5	NA	AA046900- AA046903	NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

1981 - Claims located by Larry McMasters (194).

No production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Two fault controlled quartz veins reported (184).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

184, 194

NAME (other names): Slate Creek No. 2 Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-6 NW 1/4 Sec 11 T 9N R 1E
 Meridian: Seward
 Geographic: Located about 1/2 mi east of Slate Creek on
 the south side of Turnagain Arm at sea level.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-314	NA	4	NA	AA046896- AA046899	NA

HISTORY & PRODUCTION:

1978 - First reported by Tysdal (184).

1981 - Claims located by Larry McMasters (194).

No reported production.

RESOURCES: ND

OPERATING DATA:

No reported workings.

GEOLOGIC SETTING:

Mineralization consists of quartz stringers 1- to 2-in. wide in a fault zone 4-ft wide striking N30°E and dipping 60°SE. Gangue consists of quartz and calcite. Metallic minerals include minor pyrite and arsenopyrite.

BUREAU WORK:

One sample (5585) was collected in 1981. Data are listed on table C-97. Low mineral development potential.

REFERENCES:

184, 194

TABLE C-97. - ANALYTICAL RESULTS - Slate Creek No. 2

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
5585	Q.V.	Disc. Chip	12 in.	0.01	0.2	26	16	63	157	ND	ND	ND	ND	ND	ND	ND

464

NAME (other names): Indian Occurrence

COMMODITIES: Au

LOCATION: Quadrangle: Seward D-7

NW 1/4 Sec 5 T 10N R 1W

Meridian: Seward

Geographic: Located on the west side of Indian Creek at
an elevation of approximately 150 ft.

REFERENCE NUMBERS:

Map
S-315

Kx
133

Tysdal
1

MAS
272

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1915 - Prospect was first reported (88).
Little work has been done since 1922.
Believed to be on private land.

No reported production.

RESOURCES: ND

OPERATING DATA:

ND

GEOLOGIC SETTING:

The mineralization is reported to consist of a fractured felsic dike containing pyrite. Quartz-calcite veins occur along fractures in the dike. The dike reportedly cuts slates and graywackes of the Valdez Group and also greenstone of the McHugh Complex (88).

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

6, 29-30, 88, 184, 191-192

NAME (other names): Bird Point Prospect COMMODITIES: Au, Ag
(Conway, Centennial)

LOCATION: Quadrangle: Seward D-7 1/4 Sec 25 T 10N R 1W
Meridian: Seward
Geographic: The prospect is located on the west tip of
Bird Point at and below current sea level.

REFERENCE NUMBERS:

Map	Kx	Tysdal	MAS	BLM	MS
S-316	151	2	269	NA	NA
	352				

HISTORY & PRODUCTION:

1911 - First located (88).

1912 - Mill test of 4,200 lbs of ore reported to yield 2.6 oz gold/ton
(88).

1981 - Evidence of recent flagging.

Reported production: <10 oz.

RESOURCES: ND

OPERATING DATA:

A 22 ft shaft is reported (88). However, its collar is currently
below sea level.

GEOLOGIC SETTING:

Mineralization is not currently exposed but is reported to be a quartz-
calcite vein 2- to 6-in. wide, striking N28°E parallel to local
foliation (88). Metallic minerals include pyrite, chalcopyrite,
galena, sphalerite, and gold. Other quartz veins and felsic dikes
occur in the area. The host rock consists of slate and graywacke, the
bedding of which generally strikes N45°E and dips nearly vertical.
Considerable faulting and some folding is evident in the area.

BUREAU WORK:

This property was briefly examined in 1981. The workings are silted
in and inaccessible. One sample (4917) was collected from the dump.
Data are listed in table C-98. Undetermined mineral development
potential.

REFERENCES:

6, 25-26, 88, 184, 191-192

TABLE C-98. - ANALYTICAL RESULTS - Bird Point Prospect

Sample No.	Material Type	Sample Type	Sample Width	Elements (ppm unless otherwise indicated)												Descriptions
				Au	Ag	Cu	Pb	Zn	As	Co	Mo	Ni	Sb	Sn	W	
4917	Q.V.	Grab	NA	9.45	2.2	20	250	210	2300	ND	ND	ND	ND	ND	ND	Dump.

4917

NAME (other names): Peterson Creek Quarry COMMODITIES: Rock

LOCATION: Quadrangle: Seward D-6 NE 1/4 Sec 11 T 9N R 2E

Meridian: Seward

Geographic: This quarry is located on the east side of the Seward Highway approximately 6 mi southeast of Girdwood.

REFERENCE NUMBERS:

Map
S-317

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1950-present - Used as a source of rock for highway construction (195).

1979 - Used as source of septic rock for the Girdwood sewage treatment plant (195).

RESOURCES: ND

OPERATING DATA:

Open pit.

GEOLOGIC SETTING:

Bedrock is composed of locally well-bedded carbonaceous metasiltstone and phyllite.

BUREAU WORK:

A surface examination of the quarry was made in 1980. The quarry has high mineral development potential for continued use as a source of construction materials.

REFERENCES:

195

NAME (other names): Peterson Creek Occurrence COMMODITIES: Au

LOCATION: Quadrangle: Seward D-6 SE 1/4 Sec 2 T 9N R 2E
 Meridian: Seward
 Geographic: Located about 1/2 mi east of the Seward
 Highway on the north side of Peterson Creek.
 Another prospect has been reported (6) near
 the head of Peterson Creek.

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-318	261	3	249	AA04T577	NA

HISTORY & PRODUCTION:

1980 - Located by Edward Ellis (194).

RESOURCES: ND

OPERATING DATA:

No known workings.

GEOLOGIC SETTING:

3-ft wide quartz vein in slate and graywacke.

BUREAU WORK:

This area was visited in 1980. Significant mineralization was not located. Undetermined mineral development potential.

REFERENCES:

6, 29, 184, 191, 194

NAME (other names): Lansing Mine Occurrence
(see also S-164)

COMMODITIES: Au, Ag, As

LOCATION: Quadrangle: Seward D-4 1/4 Sec 9 T 9N R 6E
 Meridian: Seward
 Geographic: This occurrence is reportedly located near
 the glacier 3 to 4 mi north-northeast of
 the Lansing Mine (S-163).

REFERENCE NUMBERS:

<u>Map</u>	<u>Kx</u>	<u>Tysdal</u>	<u>MAS</u>	<u>BLM</u>	<u>MS</u>
S-319	NA	NA	NA	NA	NA

HISTORY & PRODUCTION:

ND

RESOURCES: ND

OPERATING DATA:

No known underground workings have been identified. A small building and equipment are present.

GEOLOGIC SETTING:

Mineralization consists of quartz veins containing pyrite and arsenopyrite. USGS geologists located and briefly visited this prospect in 1981. Two samples contained 7 ppm silver and 300 to >10,000 ppm arsenic.

BUREAU WORK:

None. Undetermined mineral development potential.

REFERENCES:

Steve Nelson (personal communication)

NAME (other names): Mills Creek Occurrence COMMODITIES: Slate

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 11 T 6N R 1W

 Meridian: Seward

 Geographic: This occurrence is located at the base of a
 small falls on Mills Creek 1/4 mi south of
 its junction with Stormy Creek.

REFERENCE NUMBERS:

Map
S-320

Kx
NA

Tysdal
NA

MAS
NA

BLM
NA

MS
NA

HISTORY & PRODUCTION:

1982 - Located and examined by the Bureau.

RESOURCES: ND

OPERATING DATA:

No workings.

GEOLOGIC SETTING:

Mineralization consists of interbedded green, red, and purplish slate striking N25°E and dipping vertically. These rocks are extensively faulted with drag folds plunging near vertical. Right lateral longitudinal movement is indicated.

BUREAU WORK:

A specimen of the red and green slate was collected. This rock may have some use as a building or decorative stone. Undetermined mineral development potential.

REFERENCES:

This report.

NAME (other names): R. S. and S. Quarry COMMODITIES: Building stone

LOCATION: Quadrangle: Seward C-7 SE 1/4 Sec 11 T 5N R 2W

 Meridian: Seward

 Geographic: This prospect is located on the Sterling Highway approximately 1 mi west of the Seward junction.

REFERENCE NUMBERS:

Map
S-321

Kx
395

Tysdal
NA

MAS
NA

BLM
AAOT5007

MS
NA

HISTORY & PRODUCTION:

Pre 1960 - Quarry used as a borrow pit for construction of the Sterling Highway by the Alaska Dept. of Transportation (68).

1976 - Located by Sherman C. and Larry L. Smith (194).

Reported production 130 tons of lichen-coated metasandstone and 650 tons of shale (slate). Both have been used to construct rock panels and for fill (68).

RESOURCES: 73,000 tons (68).

OPERATING DATA:

A quarry and access road occur on the claim.

GEOLOGIC SETTING:

Bedrock consists of interbedded slate and metasandstone. Talus consists of lichen-coated metasandstone in blocks usually measuring less than 12 in. in their maximum dimension.

BUREAU WORK:

This property was briefly visited in 1980. Specimens were collected for reference. The rock appears to be suitable for riprap and building stone. Moderate mineral development potential.

REFERENCES:

6, 68, 191, 194

APPENDIX D.

Placer deposit descriptions PENINSULA
Study Area, Chugach National Forest, Alaska

Explanation of Listings

1. Localities are shown on figure 14.
2.
 - a) Deposit names are those given to stream drainages or other prominent geographic features on USGS 1:63,360 quadrangle maps.
 - b) Double underlines under the name designates significant (greater than 300 oz gold) recorded past production.
 - c) Single underline designates a stream with moderate or high placer gold mineral development potential.
 - d) Asterisk by name indicates newly named and/or identified occurrence.
3. Production figures given are estimates only through 1982.
4. Suction dredge samples were collected using a 3-in. nozzle for a period of one hour.

SM - refers to Seward Meridian

APPENDIX D. - Placer deposit descriptions Peninsula Study Area,
Chugach National Forest, Alaska

<u>Map No.</u>	<u>Page No.</u>	<u>Name</u>
P-32*		Western tributary to Unakwik Inlet
P-33		Northwestern tributary to Jonah Bay
P-34		Siwash Bay
P-35		Eaglek Bay
P-36		Avery River
P-37		Lafayette Glacier
P-38		Northwest Fork Coghill River
P-39		Bettles Bay
P-40		Pirate Cove
P-41		Billings Creek
P-42		Carmen River
P-43		Cotterell Glacier
P-44		Taylor Glacier
P-45		Claremont Glacier
P-46		Kings River
P-47		Kings River tributary
P-48		Wolverine Creek
P-49		Sheppard
P-50		Snow River
P-51		Victor Creek
P-52		Porcupine Creek
P-53		Martin Creek
P-54		Ship Creek
P-55		Falls Creek
P-56		Grant Lake
P-57		Unnamed tributary to Trail Creek
P-58		Trail Creek
P-59		Placer River
P-60		Groundhog Creek
P-61		Lynx Creek
P-62		Petes Creek
P-63		Spokane Creek
P-64		Bertha Creek
P-65		Taylor Creek
P-66		Lyon Creek
P-67		Tincan Creek
P-68		Wolverine Creek
P-69		Ingram Creek
P-70		Seattle Creek
P-71		Sawmill Creek
P-72		Sixmile Creek
P-73		Gulch Creek and East Fork Creek below Gulch Creek
P-74		East Fork Creek above Gulch Creek and Granite to Tincan Creek
P-75		Silvertip Creek

*P-1 through P-31 will be discussed in a separate report.

APPENDIX D. - Placer deposit descriptions Peninsula Study Area,
Chugach National Forest, Alaska - Continued

<u>Map No.</u>	<u>Page No.</u>	<u>Name</u>
P-76		Canyon Creek
P-77		Juneau Creek above Mills Creek
P-78		Fresno Creek
P-79		Mills Creek
P-80		Colorado Creek
P-81		Quartz Creek
P-82		Hargood Creek
P-83		Crescent Creek
P-84		Dry Creek
P-85		Stetson Creek
P-86		Cooper Creek
P-87		Kenai River
P-88		Falls Creek
P-89		Chickaloon River
P-90		Resurrection Creek
P-91		Bear Creek
P-92		California Creek
P-93		Crow Creek
P-94		Winner Creek
P-95		Kern Creek
P-96		Peterson Creek
P-97		Upper Twenty Mile River

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-32	Western tributary* to Unakwik Inlet (placer gold) Anchorage A2 T 11N, R 10E SM	Fine-grain gold disseminated in poorly washed fluvial glacial gravels with boulders to 5-ft diameter. Moderate clay hardpan. Grade is likely low but local concentrations of economic significance may exist.	None.	Alluvium sample contained 0.0021 oz gold/yd ³ . Low to moderate potential for suction dredging and small mechanized operations.
P-33	Northwestern* tributary to Jonah Bay (placer gold) Anchorage A2 T 11N, R 10E SM	Fine-grain gold disseminated in poorly washed fluvial glacial gravels derived from a glacier on the north and east flanks of Unakwik Peak. Large boulders present.	None.	Alluvium sample contained 0.0013 oz gold/yd ³ . Low potential for small mechanized and suction dredge operations.
P-34	Siwash Bay* (placer gold) Seward D2 T 10N, R 10E SM	Upper Siwash Creek descends rapidly with little gravel accumulation. Lower section occupies a relatively wide valley with a braided channel and flood plain. Gravel contains considerable clay. Anomalous concentrations of fine-grain gold below steep upper section of creek.	None.	0.1 yd ³ samples contained 0.0036 and 0.0009 oz/yd ³ . Mid-section of Siwash Creek has low to moderate potential for suction dredging or small mechanized operations.
P-35	Eaglek Bay* (placer gold) Seward D3 T 10N, R 9E SM	Uppermost section descends rapidly from its glacial sources followed by a wide braided portion about 1 1/2 mi long. Lower section occupies a steep narrow bedrock canyon below which a braided channel has developed. Very fine gold occurs in gravels accumulating below lower falls.	None.	0.1 yd ³ sample contained 0.001 oz gold/yd ³ . The gold required amalgamation to recover. Low mineral development potential for suction dredging and small mechanized operations.
P-36	Avery River (placer gold) Seward D3 T 10N, R 9E SM	Lower half of Avery River occupies a relatively broad gentle U-shaped valley filled with considerable alluvium. Middle section flows through a narrow, steep bedrock canyon with little gravel accumulation. Upper section occurs in a broad U-shaped valley with poorly washed fluvial glacial gravels containing highly anomalous concentrations of fine gold with particles up to 1/8 in. recovered. Upper gravels contain numerous boulders and considerable clay.	Possibly some hand placer activity and suction dredging has occurred.	Three samples from the upper section contained from 0.0001 to 0.008 oz gold/yd ³ ; sample collected just below the canyon 0.0002 oz gold/yd ³ ; other samples, trace amounts of gold. Upper section has moderate potential for a small mechanized operation. More than 200,000 yd ³ gravel present. Canyon section has moderate mineral development potential for suction dredging.
P-37	Lafayette Glacier* (placer gold) Anchorage A3 T 11N, R 9E SM	Very fine-grained gold is disseminated in poorly washed fluvial-glacial gravels associated with Lafayette Glacier. Large boulders are present. A large volume of gravel occurs along the stream.	No recorded production.	Alluvium sample contained 0.001 oz gold/yd ³ . Lafayette drainage has low mineral development potential for small-medium sized mechanized operations.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-38	Northwest Fork* Coghill River (placer gold) Anchorage A2 T 12N, R 10E SM	Gold is disseminated in thin, poorly to moderately sorted alluvial gravels and concentrated on and in slate bedrock exposed in the canyon portion of the northwest fork of the Coghill River. Minor gravel occurs in the canyon but has accumulated above its junction with the main fork of the Coghill River. Grades are low to marginal with good possibilities of identifying local economic concentrations of gold. Gold up to 1/16 in. in diameter was recovered.	No recorded production.	The three alluvium samples contained 0.0004 to 0.0063 oz gold/yd ³ . Considerable arsenopyrite was also recovered. Moderate mineral development potential for suction dredging in the canyon section, and low mineral development potential for a small operation below the canyon.
P-39	Bettles Bay stream draining Mineral King Mine (#140) (placer gold) Seward D4 T 10N, R 6E SM	Gold is disseminated throughout gravels with some concentration on bedrock. Creek occupies a steep narrow bedrock channel with little accumulation of gravel except at its extreme lower end. Gravel contains considerable clay and boulders.	Minor prospecting reported. No known production.	Samples collected near the mouth of the canyon contained 0.0009 and 0.018 oz gold/yd ³ . The second sample was collected on bedrock. Gravel volume is limited. Low to moderate mineral development potential for a small mechanized operation and suction dredge.
P-40	Pirate Cove* (placer gold) Seward D4 T 9N, R 6E SM	Gold is fine with a few small flakes to 1/16 in. recovered. The main tributary to Pirate Cove occupies a short U-shaped valley which has a steep gradient in its upper portion and a relatively gentle gradient along its middle and lower sections. Gravel contains numerous boulders.	None.	0.1 yd ³ sample of alluvial gravels contained 0.001 oz gold/yd ³ . Low mineral development potential for economic placer mining.
P-41	Billings Creek (placer gold) Seward D5 T 9N, R 5E SM	Billings Creek occupies a relatively short, wide gentle sloping U-shaped valley. Central section has a short bedrock canyon below which gravel bars contain fine disseminated gold accumulations. Gravels consist of a wide variety of metasedimentary and granitic clasts and have a high clay content.	None.	3-in. dredge sample yielded 0.0014 oz gold/hr of very fine gold requiring amalgamation to recover. Low to moderate mineral development potential for a small mechanized or suction dredge operation.
P-42	Carmen River*, (North Fork) (placer gold) Seward D5 T 9N, R 4E SM	Upper segment of Carmen River occupies a relatively broad, gently sloping U-shaped valley except in its uppermost forks entrenched in steep walled bedrock canyons. Little gravel has accumulated in the canyons. The flood plain gravels grade from boulder and clay rich at the upper portion to increasingly well-washed sandier sections near Carmen Lake. Gold is present in slightly anomalous concentrations in the alluvial gravels of the upper section.	None.	Three 3-in. dredge samples yielded from a trace to 0.0001 oz gold/hr. One 0.1 yd ³ channel sample collected in the east fork bedrock canyon contained 0.0014 oz/yd ³ . Sniping on bedrock yielded traces of gold. Carmen River has low mineral development potential for economic mining operations.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-43	Cotterell Glacier* (placer gold) Seward C5 T 6N, R 5E SM	Cotterell Glacier Creek occupies a relatively broad glacial valley with flood plain developed along most of its course. Gravel is somewhat compacted, with a high clay and boulder content. Gold is fine and required amalgamation to recover.	None.	0.1 yd ³ sample collected near the terminus of Cotterell Glacier contained 0.00005 oz/yd ³ . Low mineral development potential for placer mining.
P-44	Taylor Glacier* (placer gold) Seward C5 T 5N, R 5E SM	Taylor Glacier Creek occupies a very short broad valley and has a braided channel consisting of compacted gravels with a high clay and boulder content. Gold up to 1/8-in. diameter was recovered.	None.	0.1 yd ³ sample collected below a small waterfall contained 0.0044 oz/yd ³ . Low to moderate mineral development potential for a small mechanized operation or suction dredging. Boulders would be a problem.
P-45	Claremont Glacier* (placer gold) Seward C5 T 5N, R 5E SM	Claremont Glacier Creek occupies a short, steep, narrow glaciated valley in its upper section with a braided alluvial channel along its lower portion. The gravel is compacted with a high clay and boulder content. The gold is fine and required amalgamation to separate from concentrate.	None.	0.1 yd ³ sample gold contained 0.0013 oz/yd ³ . Low mineral development potential for placer commercial mining.
P-46	Kings River (placer gold) Seward B5 and C5 Quads. T 4N, R 4E SM	Kings River is fed by two short steep gold-bearing headwater tributaries. Below their junction the river flows through a relatively wide gently sloping valley with a 1/4 to 1/2 mi wide flood plain. The gravels contain considerable clay with coarse angular bedrock boulders in the upper section and become better sorted, less compacted and finer as Kings Bay is approached. Coarse gold, up to 3/16-in. diameter, was recovered in the upper section of the stream. Fine grain gold in anomalous quantities was found in surface gravels up to 5 mi from the headwaters.	None.	Three 0.1 yd ³ samples contained from 0.0003 to 0.0083 oz gold/yd ³ . Dredge sample yielded 0.0017 oz gold/hr. Upper section of Kings River has moderate mineral development potential for suction dredge and mechanized operations. Boulders would be a significant problem. Flood plain gravels (greater than 6 million yd ³) could support a medium to large mechanized operation.
P-47	Kings River* tributary (placer gold) Seward B5 T 5N, R 3E SM	This tributary occupies a short steep, narrow bedrock canyon in its upper section. The remainder has a narrow flood plain consisting of clay-rich gravels which contain anomalous gold values. The gold recovered was up to 1/8 in. diameter.	None.	Sample collected 150 ft below the canyon mouth contained 0.0035 oz gold/yd ³ . Sample from near junction with the Kings River contained only traces of gold. Low to moderate mineral development potential for suction dredging or a small mechanized operation in section just below the canyon mouth. Gravel reserves in the high grade portion of the stream are estimated to be less than 25,000 yd ³ .
P-48	Wolverine Creek* (placer gold) Seward B6 T 3N, R 3E SM	Wolverine Creek descends through a short narrow bedrock canyon with minor gravel accumulating until near its junction with the Nellie Juan River. Gravels contain considerable clay, numerous boulders and small amounts of fine gold and sulfides.	None.	0.1 yd ³ placer sample from surface gravels contained 0.0002 oz/yd ³ gold. Low mineral development potential for small mechanized and suction dredge operations.
P-49	Sheppard 1A, 1B, 2 Puget Bay (placer gold) Sec. 18, T 2S, R 6E SM	Quaternary alluvial sand and gravels consist of graywacke with some disseminated pyrite and small quartz veins.	No data.	Four 0.1 yd ³ placer samples contained from .04 ppm to 1.34 ppm gold. Low mineral development potential.
P-50	Snow River* (placer gold) Seward B6 and B7 T 3N, R 2E SM	Snow River occupies a long relatively wide glacial valley with a well-developed flood plain. Gravel contains considerable clay and very fine grain gold dispersed throughout. Best values are obtained below bedrock canyons above Lower Paradise Lake.	None.	Five placer samples contained from a trace to 0.0464 oz gold/yd ³ . Dredge sample yielded 0.0001 oz/hr. Gold required amalgamation to separate it from the concentrate. Low to moderate mineral development potential for medium or large mechanized operations. Greater than 5 million yd ³ of gravel are estimated to occur along the upper 9 mi of the Snow River.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-51	Victor Creek (placer gold) Seward B6 and B7 T 5N, R 1E SM	Victor Creek occupies a steep, narrow, bedrock-walled, avalanche debris-filled valley along most of its length. Narrow flood plain and alluvial fan have developed along lower 1/2 to 3/4 mi section. Gravels contain considerable clay and large boulders. Fine gold has been recovered in samples. Coarser gold has reportedly been recovered.	Prospect on lower section of Victor Creek reported between 1900 and 1916 when a shaft was dug, and again during the 1950's. Some suction dredging since 1977. Total production is estimated to be less than 50 oz.	Three 0.1 yd ³ samples contained 0.0002 to 0.0043 oz gold/yd ³ . Moderate potential for suction dredging in its lower canyon; low to moderate mineral development potential for small mechanized operations on alluvial fan.
P-52	Porcupine Creek (placer gold) Seward B7 T 3N, R 1W SM	Porcupine Creek occupies a deep, narrow, steep bedrock-walled canyon along most of its course with narrow flood plain and an alluvial fan developed along its lower portion. Gravel bars and channel deposits accumulated in the canyon in favorable locations which contain fine placer gold.	Minor suction dredging since 1975. Total estimated production is less than 25 oz.	Two samples contained 0.0008 and 0.0022 oz gold/yd ³ . Low to moderate mineral development potential for suction dredging.
P-53	Martin Creek (placer gold) Seward A7, A8, and B7 T 2N, R 2W SM	Upper Martin Creek occupies a moderately steep, narrow, shallow bedrock gorge with small amounts of gravel accumulating below plunge pools. Middle section, beginning about 1/2 to 3/4 mi below the junction with Mt. Ascension tributary, occupies a steep, narrow, deep, bedrock gorge with numerous falls and little accumulation of gravel. Narrow flood plain has developed beginning about 1 1/2 mi above its junction with the Resurrection River. Coarse gold (up to 1/4 in.) was recovered in gravels resting on and in bedrock fractures located just below the Mt. Ascension tributary. Significant gold was not located elsewhere along the drainage.	Minor prospecting has occurred along the lower section of Martin Creek. No known production.	Five dredge samples yielded from 0.0001 to 0.0278 oz gold/hr. Three 0.1 yd ³ sluice samples contained from a trace to 0.0106 oz gold/yd ³ . Pan samples of bedrock gravels yielded 0.1537 oz gold/yd ³ . Middle section of Martin Creek has high mineral development potential for suction dredging and small hand placer operations. Lower section has low mineral development potential for small equipment operations.
P-54	Ship Creek (placer gold) Seward B7 T 3N, R 1W SM	Most of Ship Creek occupies a very narrow, steep avalanche-debris filled bedrock valley. A short narrow flood plain and alluvial fan have formed at its lower end near Kenai Lake. Gravel is poorly sorted with abundant slate fragments and some hard packed clay near bedrock. Coarse gold (3/16 in.) was identified on the east fork of the stream 3/4 mi above large western tributary.	Some evidence of prospecting exists on the lower end of Ship Creek. Limited suction dredging occurred in 1982. Total estimated production is less than 25 oz.	Four suction dredge samples yielded from a trace to 0.0081 oz gold/hr. Three 0.1 yd ³ sluice samples contained 0.0001 to 0.0304 oz gold/yd ³ . Moderate potential for suction dredging. Alluvial fan and lower section has low to moderate mineral development potential for a small mechanized operation.
P-55	Falls Creek (placer gold) Seward B6 and B7 T 4N, R 1E SM	Falls Creek descends in a series of steps. The uppermost section descends rapidly along a bedrock canyon followed by the development of a relatively gentle portion with a narrow flood plain. A second canyon area begins just below the Falls Creek Mine and continues to within a mile of its junction with the Trail River. Anomalous amounts of gold have been identified in silty gravels 1/2 mi above the Falls Creek Mine and in alluvial fan gravels below the lower canyon. Coarse gold has reportedly been recovered by suction dredges in the lower canyon. Grade recovered by a mechanized operation near the mouth of the lower canyon was reported to be about 0.002 oz/yd ³ .	Drilling and prospect pits were dug in early 1900's and 1950's on the alluvial fan. Small mechanized operation worked alluvial gravels near the mouth of the lower canyon in 1980, without significant success. Suction dredging has occurred in the canyon area during each year since at least 1977. Total production is estimated to be between 200 and 300 oz.	Two 0.1 yd ³ samples yielded 0.0022 and 0.0077 oz gold/yd ³ . Dredge sample near the Falls Creek Mine yielded only traces of mercury-coated gold. Lower canyon has high mineral development potential for suction dredging, based on previous mining history. Upper flood plain and alluvial fan deposits have low to moderate mineral development potential for a small operation. In excess of 400,000 yd ³ of gravel are estimated to occur in the alluvial deposits below the lower canyon.
P-56	Grant Lake* (placer gold) Seward B6 T 4N, R 2E SM	Headwaters of Grant Lake occupy a relatively wide valley with some flood plain development along portions of its channel, interspersed with bedrock canyons. Gravels contain considerable clay and locally contain fine grain gold concentrated on bedrock.	None.	Two dredge samples yielded 0.0002 and 0.006 oz gold/hr. 0.1 yd ³ placer sample from surface gravels yielded only a trace of gold. Low to moderate mineral development potential for placer mining.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-57	Unnamed Tributary* to Trail Creek (placer gold) Seward C6 T 6N, R 2E SM	This creek occupies a very steep narrow bedrock canyon with gravel accumulating only near its junction with Trail Creek valley. Gravels are unconsolidated, poorly sorted with numerous boulders, and a high clay content. Gold is disseminated throughout.	None.	Dredge sample, which did not reach bedrock yielded, 0.0006 oz gold/hr. Low mineral development potential for suction dredging and small mechanized operations near canyon mouth.
P-58	Trail Creek* (placer gold) Seward C6 T 5N, R 1E, T 6N, R 2E SM	Trail Creek occupies a relatively wide, U-shaped valley and has a well-developed flood plain along most of its length. Upper Trail Creek has a narrow bedrock walled section containing coarse gravels with numerous boulders. Alluvium generally has a high clay content but becomes increasingly well-washed and sorted downstream. Fine grain gold is distributed throughout the gravels for several miles below Trail Glacier. Some concentration appears to occur on bedrock. Grades tend to decrease downstream. Gold up to 1/8-in. diameter was recovered, amalgamation was required to recover much of the gold from the samples.	None.	Three dredge samples yielded from 0.0005 to 0.0012 oz gold/hr. Three sluice samples from gravels adjacent to the stream channel contained from a trace to 0.0015 oz/yd ³ . Low mineral development potential for small to large mechanized operations and suction dredging. In excess of 7 million yd ³ of gravel are estimated within the flood plain of Trail Creek, between Trail Glacier and Moose Creek.
P-59	Placer River, section between Bartlett and Skookum Glaciers (placer gold) Seward C6 T 7N, R 2E SM	Upper portion of the Placer River occupies a narrow relatively steep valley much of which is filled with avalanche debris and till. A deep bedrock gorge extends for a mile above its confluence with Spencer Glacier valley. From there, the river occupies a broad U-shaped glacier trough with a 3/4 to 1 1/2 mi wide flood plain. Auriferous gravels occur from the terminus of Bartlett Glacier to at least Spencer Glacier valley but tend to be low in volume except at the mouth of the canyon. Gravels contain numerous large boulders and extensive clay. Gold is fine though particles up to 3/16 in. were recovered.	Minor production from recent suction dredging. Total estimated production is less than 25 oz.	Four dredge samples yielded from 0.0001 to 0.0028 oz gold/hr. Four 0.1 yd ³ samples of gravels adjacent to stream channel contained 0.001 to 0.0028 oz gold/yd ³ . Evaluation of the 10 million yd ³ gravel deposits in the main valley is recommended. Moderate mineral development potential for small mechanized and suction dredging operations between Bartlett Glacier and Placer River valleys.
P-60	Groundhog Creek including 1/2 mi of Bench Creek below Groundhog Creek (placer gold) Seward C6 and C7 T 7N, R 1E SM	Groundhog Creek occupies a steep narrow avalanche-debris filled glacial valley and has a V-shaped bedrock gorge characterized by numerous falls and cascades for a 1/2 mi stretch above Bench Creek. Small amounts of gold-bearing alluvial gravels have accumulated at the junction of Groundhog and Bench Creeks. Gold is disseminated throughout gravels but concentrated on bedrock. Particles up to 3/16 in. in diameter were recovered, but most of the gold is finer grained.	Some evidence of suction dredging and hand placering exists in the junction area. Total estimated production is less than 25 oz.	Two dredge samples collected from the junction area yielded 0.0006 and 0.0042 oz gold/hr. One 0.1 yd ³ sample of gravels adjacent to the channel and on bedrock contained 0.0012 oz gold/yd ³ . Small copper nugget (natural?) was recovered in one sample. Samples collected from the middle and upper portions of Groundhog Creek contained trace amounts of gold. Gravel volume is very limited. The junction area of Groundhog and Bench Creeks is believed to have low to moderate mineral development potential for suction dredging or a small hydraulic operation.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-61	<u>Lynx Creek</u> (placer gold) Seward C7 T 7N, R 1E SM	Lynx Creek occupies a steep narrow canyon cut into glacial till, poorly washed glacial-fluvial gravels and bedrock. Terraces mantled with avalanche debris extend along most of the creek. A well-developed alluvial fan has formed between the canyon mouth and its junction with Bench Creek. The auriferous bench deposits consist of poorly stratified and washed, partially cemented gravels, in excess of 15 ft thick, resting on bedrock. The alluvial fan consists of well-stratified and washed gravels containing fine grained particles of disseminated gold near the surface.	Pick and shovel operations occurred between 1897 and 1904. Hydraulic operations began in 1915 and mined bench deposits sporadically until 1980. Total estimated production is 7,500 oz of gold, less than 100 oz produced since 1975.	Fourteen samples collected from Lynx Creek. Four 3-in. dredge samples yielded 0.001 to 0.0149 oz gold/hr. Seven 0.1 yd ³ bench samples contained 0.0013 to 0.074 oz gold/yd ³ . Three gravel bar 0.1 yd ³ samples contained 0.0004 to 0.0412 oz gold/yd ³ . Lynx Creek has high mineral development potential for small hydraulic or mechanized operations and moderate to high mineral development potential for suction dredging in its upper section. Inferred reserves at one test location were 5,000 yd ³ with a grade of 0.015 to 0.02 oz/yd ³ . Lower portion, including the alluvial fan has low to moderate mineral development potential for a medium sized mechanized operation. Alluvial fan contains in excess of 1.5 million yd ³ of gravel.
P-62	<u>Petes Creek</u> (placer gold) Seward C6 and C7 T 7N, R 1E SM	Similar to Spokane Creek (P-63).	Similar to Spokane Creek.	Two samples of alluvial fan gravels contained a trace and 0.007 oz gold/yd ³ . Low mineral development potential for commercial placer mining due to lack of gravel and low grade.
P-63	<u>Spokane Creek</u> (placer gold) Seward C6 and C7 T 8N, R 1E SM	Spokane Creek occupies a U-shaped valley in its upper portion, a steep V-shaped bedrock canyon in its middle portion, and an alluvial fan in its lower section. Little stream-washed gravel has accumulated except on the fan where the gravel is moderately stratified and composed of considerable slate fragments with increasing clay content on bedrock. Gold appears to be concentrated on bedrock.	No commercial mining has occurred. Evidence of prospecting is present along its lower portions. Recreational mining, including suction dredging, has occurred in recent years. Total estimated production is less than 25 oz.	Dredge sample yielded 0.0022 oz gold/hr. Surface sample of bench gravels from the alluvial fan contained 0.0001 oz gold/yd ³ . Quantities of gravels are limited. Moderate mineral development potential for small mechanized operations, hand placer, and suction dredge mining.
P-64	<u>Bertha Creek</u> (placer gold) Seward D6 and C6 T 8N, R 1E SM	Bertha Creek occupies a U-shaped valley in its upper portion and a steep narrow canyon cut mostly in glacial debris and bedrock in its middle section. Below the canyon, an alluvial fan has been deposited which has been the major source of gold produced to date. Gravels are poorly to moderately stratified with a high clay and boulder content. Gold appears to be concentrated near bedrock.	Hand placer and hydraulic mining occurred between 1902 and 1904. Recreational mining has been popular on Bertha Creek since 1975. A suction dredge operation occurred near the power line in 1981. Total production since 1902 is estimated to be 750 oz with less than 35 oz veing produced since 1975.	Three samples were collected from lower Bertha Creek. Dredge sample yielded 0.0142 oz gold/hr from channel deposits. Bedrock was not reached. Two bench samples contained 0.0006 and 0.0129 oz gold/yd ³ . Traces of gold were recovered from surface gravels on upper Bertha Creek. Quantities of gravel are limited. Moderate to high mineral development potential for small mechanized, suction dredging, and hand placer activities.
P-65	<u>Taylor Creek</u> (placer gold) Seward D6 T 8N, R 1E SM	Taylor Creek is a short drainage similar to Bertha Creek and other eastern tributaries to Granite Creek. Along its lower section it cuts glacial till, believed to be a lateral moraine.	None.	Sample collected near lower end of Taylor Creek contained 0.0011 oz gold/yd ³ . Low mineral development potential for commercial mining.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-66	Lyon Creek (placer gold) Seward D6 T 8N, R 1E SM	Lyon Creek occupies a narrow avalanche-filled glacial trough for most of its length prior to cutting a steep bedrock gorge and flowing onto an alluvial fan which coalesces with that formed by Tincan Creek. Alluvial gravels thinly mantle bedrock in the lowermost canyon section. Relatively coarse gold (3/16 in.) was recovered on bedrock.	Evidence of prospecting is present near the mouth of the canyon. No known production.	Dredge sample yielded 0.0132 oz gold/hr from channel gravels near the mouth of the canyon. Channel deposits are very limited in quantity. Moderate to high mineral development potential for suction dredging and moderate mineral development potential for a small mechanized operation. The alluvial fan should be evaluated.
P-67	Tincan Creek (placer gold) Seward D6 T 8N, R 1E SM	Tincan Creek is similar in character to Lyon Creek (P-66) except that its upper valley is broader.	Hand placer operations occurred in the 1930's or earlier. Suction dredging has occurred since 1975. Total production is estimated between 50 and 100 oz.	Dredge sample yielded 0.0114 oz gold/hr from a previously mined area. A 0.1 yd ³ sample yielded 0.0023 oz gold/yd ³ from the upper portion of the creek. Lower Tincan Creek has moderate to high mineral development potential for suction dredging and hand placer operations and moderate mineral development potential for a small mechanized operation. The alluvial fan should be evaluated.
P-68	Wolverine Creek (placer gold) Seward D6 T 8N, R 2E SM	Wolverine Creek is the main tributary to and is similar in configuration to upper Ingram Creek (P-69). Pockets of moderately washed gravels have accumulated in favorable sites and contain gold concentrated with tan clay on bedrock. The gold was a mixture of fines, requiring amalgamation to recover, and relatively coarse gold.	Evidence of prospecting was located about 1/2 mi above its junction with Ingram Creek. No known production.	Dredge samples yielded 0.0018 and 0.0036 oz gold/hr. Quantities of gravel are limited. Moderate mineral development potential for suction dredging and low potential for mechanized operations.
P-69	Ingram Creek (placer gold) Seward D6 T 9N, R 2E SM	Upper Ingram Creek occupies a steep, narrow avalanche-debris filled glacial valley. The middle section is in a narrow, steep bedrock canyon with numerous falls and cascades. The lower 2 mi has a narrow flood plain developed. The gravels range from well-washed on the surface to angular blocky boulders mixed with considerable clay near bedrock. Fine grained gold is disseminated throughout but is concentrated near bedrock.	Evidence of prospecting is present along Ingram Creek but apparently no early attempts were made to mine the creek. Suction dredging with doubtful success occurred in 1981 and 1982. Total estimated production is less than 25 oz.	Dredge sample from upper Ingram Creek yielded 0.0011 oz gold/hr. Other samples contained trace amounts of gold. Quantities of gravel are limited except possibly along its lower end where in excess of 100,000 yd ³ of gravel are estimated to occur. Low mineral development potential.
P-70	Seattle Creek (placer gold) Seward D6 T 9N, R 2E SM	Seattle Creek occupies a long relatively narrow U-shaped valley with schist bedrock canyons developed along some sections. Gold occurs throughout the channel gravels but is concentrated on bedrock and in bedrock fractures. Gold also occurs as disseminated particles in bench deposits along the lower section of the stream. The gold is relatively fine grain though particles up to 3/16 in. diameter were recovered. The bench deposits contain considerable sand with boulders to 2 ft resting upon a 6- to 12-in. thick clay layer.	A hydraulic pit occurs on the west side of Seattle Creek about 1 mi south of Turnagain Arm. Small amounts of hand placering and suction dredging have occurred since 1975. Total estimated production is less than 300 oz.	Six suction dredge samples yielded from a trace to 0.0048 oz gold/hr. Two pan samples collected on bedrock contained 0.0136 and .0301 oz gold/yd ³ . Two bench gravel samples contained 0.001 and 0.0048 oz gold/yd ³ respectively but neither was taken on bedrock. Over 250,000 yd ³ of gravel are estimated to occur along lower Seattle Creek. Lower Seattle Creek has moderate mineral development potential for small mechanized operations. Much of Seattle Creek has moderate mineral development potential for suction dredging.
P-71	Sawmill Creek (placer gold) Seward D6 and D7 T 9N, R 1E SM	Sawmill Creek occupies a short, steep, narrow, avalanche-debris filled valley. Very little gravel has accumulated along the channel. Gold occurs in poorly sorted gravels sampled near the mouth of the stream.	None.	Suction dredge sample yielded 0.0007 oz gold/hr and a pan sample yielded 0.0029 oz gold/yd ³ . Due to the limited quantity of gravel the creek has low mineral development potential for commercial placer mining.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-72	<u>Sixmile Creek</u> below Canyon Creek including tributaries (placer gold) Seward D7 T 8N, R 1W, T 9N, R 1W SM	Sixmile Creek occupies a relatively broad alluvial filled valley with periodic development of bedrock canyons along its channel. Alluvial terraces, partially covered with avalanche debris, parallel the stream channel. Gold is relatively fine grain with nuggets coarser than 1/4 in. diameter rarely recovered. Flood plain deposits appear to be relatively thick with depths to bedrock in excess of 70 ft reported near the junction with Canyon Creek. Small auriferous alluvial fan deposits are associated with several western tributaries of Sixmile Creek, including Alder Creek, Cub Creek, and Old Woman Creek.	Several small operations produced gold from Sixmile Creek between 1897 and 1917. Prospecting, drilling, and limited hydraulic mining occurred in the 1930's. Recently, the gravels just below Canyon Creek have been tested by backhoe and 12-in. suction dredge. Results are unknown. Several small suction dredge operations have occurred within the last 3 years. Total estimated production since 1897 is 1,750 oz of which less than 250 oz have been produced since 1975.	0.1 yd ³ sample from Alder Creek contained 0.0017 oz gold/yd ³ . One from Cub Creek contained 0.0073 oz gold/yd ³ . Two suction dredge samples, which yielded 0.002 and 0.0182 oz gold/hr, and one bedrock pan sample, containing 0.0214 oz gold/yd ³ , were collected from channel deposits. Three bench placer samples contained 0.0005 to 0.0028 oz gold/yd ³ . Bench gravels and channel volumes are estimated to exceed 5 million yd ³ . Sixmile Creek is believed to have moderate mineral development potential for small and medium sized mechanized operations and high potential for suction dredging. The bench gravels and the flood deposits near the junction of Sixmile and Canyon Creeks may also have significant mineral development potential.
P-73	<u>Gulch Creek, and East Fork Creek</u> below Gulch Creek (placer gold) Seward D7 T 8N, R 1W SM	Gulch Creek and Lower East Fork Creek occupy narrow bedrock canyons along most of their length and contain thin discontinuous high-grade gravel deposits. At least one abandoned channel on Gulch Creek was mined in the early 1900's and others may occur along lower Gulch Creek and East Fork Creek. Channel gravels range from loose and sandy on the surface to clay cemented with boulders to 5 ft or more on bedrock. Fine grained gold is disseminated throughout the gravels but the pay streak occurs on and in bedrock fractures accompanied by a sticky tan clay. Relatively coarse gold, up to 5 oz nuggets have reportedly been recovered from Gulch Creek.	Hydraulic and hand placer operations on lower Gulch Creek and on the east side of East Fork Creek accounted for most of the production prior to 1917. Suction dredging has become popular along most of Gulch Creek and lower East Fork Creek in the past several years. Total estimated production is 2,150 oz of which up to 250 oz have been produced since 1975.	Three suction dredge samples collected from the headwaters of Gulch Creek yielded 0.0006 to 0.0034 oz gold/hr. Two additional samples collected from upper Gulch Creek contained 0.0008 to 0.0296 oz gold/yd ³ . Nine placer samples consisting of surface alluvium, collected from within the canyon of lower East Fork Creek, contained from 0.0019 to 0.015 oz gold/yd ³ . The quantity of gravel is limited. East Fork Creek and Gulch Creek have high mineral development potential for suction dredge operations and moderate mineral development potential for small mechanized operations at selected locations.
P-74	<u>East Fork Creek</u> above Gulch Creek and Granite Creek to Tincan Creek. (placer gold) Seward D7 and D6 T 7N, R 1E, T 8N, R 1W, T 8N, R 1E SM	Granite and upper East Fork Creeks occupy a relatively wide valley over most of their lengths with bedrock exposed in only a few locations. East Fork Creek occupies a narrow canyon beginning about 3/4 mi below Silvertip Creek. Stream gravels are loose and unconsolidated on the surface with increasing clay at depth. Bench deposits occur along portions of these drainages which are unevaluated except where they were mined at the mouth of Bertha Creek.	Significant production has not occurred along these drainages. Suction dredging has occasionally been attempted without success.	Three surface gravel samples from East Fork Creek contained trace amounts of very fine grain gold. Two suction dredge samples on Granite Creek yielded 0.0007 and 0.0011 oz gold/hr of very fine grain gold requiring amalgamation to recover. Significant gravel reserves occur along much of Granite Creek and East Fork Creek. East Fork Creek above Gulch Creek and Granite Creek have low mineral development potential for small to medium sized placer operations and suction dredging with moderate mineral development potential near their confluence with placer producing drainages such as Silvertip, Lynx, and Bertha Creeks.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-75	<u>Silvertip Creek</u> (placer gold) Seward C7 T 7N, R 1E SM	The upper portion of Silvertip Creek occupies a steep narrow bedrock canyon partially filled with avalanche debris. The lower sections occupy a slightly wider channel with bedrock near the surface covered by poorly washed and stratified clay-rich gravels containing gold. The lowermost section occupies an alluvial fan consisting of moderately well-stratified and washed gravels which supplied fill for construction of the Seward Highway.	Pick and shovel operations occurred between 1897 and 1904. A small hydraulic operation was attempted in 1911. Small mechanized operations have mined sporadically since 1950 and suction dredges since 1975. Total estimated production is 650 oz of which 50 to 100 oz is estimated to have been recovered since 1975.	One sample from Silvertip Creek contained 0.0019 oz gold/yd ³ . Reserves are limited along the main stream. The alluvial fan should be tested as significant quantities of gravel reside there. High mineral development potential for small mechanized and suction dredge operations based upon past activity.
P-76	<u>Canyon Creek</u> including Mills Creek below Juneau Creek (placer gold) Seward C7 and D7 T 7N, R 1W, T 8N, R 1W SM	Canyon Creek occupies a bedrock canyon deeply cut into a broader U-shaped glacial valley. Placer gold occurs in alluvial gravels associated with the current channel of Canyon Creek and in bench gravels at elevations up to at least 100 ft above present stream level. The bench gravels are locally compacted and cemented and contain considerable clay. Channel gravels are low in volume but reported to be of high grade. Gold is flaky with recovery of particles up to 3/16 in. in diameter common.	Considerable hand placer and hydraulic placer mining occurred on Canyon Creek, especially at its junction with Mills Creek between 1895 and 1940. Several small mechanized and hydraulic operations mined intermittently during 1955-1961 and in 1977-78. In recent years (1970-1984) suction dredging has become popular and likely accounts for 100 to 200 oz of production/year. Total estimated production is 37,700 oz since 1975.	Three samples from bench deposits in the old hydraulic pit, located just below the junction of Mills and Canyon Creeks on the west side of Canyon Creek, contained from 0.0001 to 0.14 oz gold/yd ³ . Bench gravels are estimated to exceed 2 million yd ³ . Potential for locating relatively high grade abandoned channels in the benches is good. Canyon Creek has high mineral development potential for suction dredge and small hand placer operations and moderate mineral development potential for small to medium sized mechanized and hydraulic mining operations.
P-77	<u>Juneau Creek</u> above Mills Creek (placer gold) Seward C7 T 7N, R 1W SM	Juneau Creek occupies a narrow, avalanche-debris filled glacial valley. A thick bench deposit, consisting of glacial till and poorly washed glacial-fluvial gravels occurs just above the junction of Juneau and Mills Creek. A pay streak is reported to occur near the top of an old hydraulic cut in the bench. Gravels are tightly cemented by clay and contain clay lenses and layers. Bedrock channel is believed to be very deep and covered with thick avalanche deposits and/or poorly washed gravels.	A single hydraulic operation apparently mined the bench deposit in the 1950's. Some exploration work including the excavation of a large prospect pit has occurred recently. No records of production are available.	Only trace amounts of gold have been identified in pan samples and 0.1 yd ³ samples. Low mineral development potential for commercial placer mining.
P-78	<u>Fresno Creek</u> (placer gold) Seward C7 T 7N, R 1W SM	Fresno Creek occupies a steep narrow avalanche-debris filled glacial valley with a bedrock canyon along much of its course. Little gravel has accumulated along the stream. Fine grained gold is sparsely disseminated throughout the poorly washed gravel samples.	None.	One sample contained 0.0006 oz gold/yd ³ from surface gravels. Low mineral development potential for commercial mining because of low volume and grade.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-79	<u>Mills Creek</u> above junction with Juneau Creek (placer gold) Seward C7 T 5N, R 1W, T 7N, R 1W SM	High-grade alluvial deposits occurred in and along the current channel and narrow flood plain of Mills Creek; lower grade deposits occurred on benches. Gravels are poorly to moderately sorted and contain considerable clay. Gold is concentrated close to and in bedrock associated with a tan sticky clay which fills bedrock fractures. Gold particles are relatively coarse compared to other drainages on the Kenai Peninsula. Flakes and small gold nuggets up to 0.05 oz are common in Mills Creek gravels below Timberline Creek. Only fine grain gold has been collected above the junction of Timberline Creek. Production grades in the channel gravels are estimated to average 0.0125 to 0.015 oz/yd ³ .	Hydraulic operations began in Mills Creek, about 1/2 mi above Juneau Creek in 1938. One hydraulic or small mechanized operation has mined intermittently since that time. Total estimated production is 4,000 oz though no records are available.	Ten placer samples were collected from Mills Creek. Seven samples (four bench samples and three stream channel samples) were collected below the junction of Timberline Creek. Bench samples contained from a trace to 0.0044 oz gold/yd ³ . A suction dredge sample yielded 0.0554 oz gold/hr. Two samples collected next to the stream channel contained 0.0011 to 0.0869 oz gold/yd ³ . Three suction dredge samples above Timberline Creek yielded from 0.0005 to 0.0012 oz gold/hr. Below Timberline Creek bench deposits are estimated to exceed 0.5 million yd ³ and unworked channel gravels are estimated to range from 50,000 to 150,000 yd ³ . High mineral development potential for small to medium sized mechanized and hydraulic operations and for suction dredging below Timberline Creek. Low to moderate mineral development potential above Timberline Creek.
P-80	Colorado Creek (placer gold) Seward C7 T 7N, R 2W SM	Colorado Creek occupies a steep narrow avalanche-debris filled glacial valley with a bedrock gorge developed near its lower end and a well-developed alluvial fan near its terminus. Gravels are poorly stratified and contain considerable clay. Gold is disseminated throughout the gravels with minor concentration on bedrock. Gold is generally fine-grained though small nuggets up to 3/8 in. in diameter have been recovered. Production grades of approximately 0.0015 oz gold/yd ³ were reported.	A small mechanized operation mined sporadically on Colorado Creek between 1977 and 1982 with little success. Total estimated production is less than 50 oz.	Two samples yielded 0.0002 and 0.0022 oz gold/yd ³ . In excess of 200,000 yd ³ of gravel are estimated to occur in the lower section of the creek. Low to moderate mineral development potential for small mechanized operation and suction dredging.
P-81	<u>Quartz Creek</u> (placer gold) Seward C7 and C8 T 6N, R 1W, T 6N, R 2W SM	Upper Quartz Creek occupies a steep, narrow, avalanche-debris filled valley partially cut into bedrock. An alluvial fan has developed between the mouth of the canyon and the Seward Highway. Alluvial fan deposits are poorly washed and stratified with fine gold disseminated throughout and concentrated on bedrock. Gold up to 1/8 in. in diameter was recovered. The remainder of Quartz Creek occupies a broader more gentle valley with a bedrock canyon formed along a 1/2 mi stretch above Devils Creek. High-grade channel deposits and bench deposits have been successfully mined in the canyon section. Production grades of 0.015 gold/yd ³ are typical. Bench gravels are locally stratified and typically compacted. They have a high clay content; boulders to 3 ft in diameter are common. Gold is mostly of the flake variety with nuggets coarser than 1/4 in. in diameter rarely present.	Some prospecting indicated by pits and trenches occurred in the early 1900's and 1950's-60's. Total estimated production is less than 25 oz from upper Quartz Creek. A hand placer and hydraulic operation mined bench deposits about 1/3 mi above Devils Creek between 1904 and 1915. Several hand placer, suction dredge, and one small mechanized operation have mined mostly in and just above the canyon section since 1971. Total estimated production is 800 oz of which up to 400 oz have been produced since 1975.	Two samples from upper Quartz Creek at the mouth of the canyon. 0.1 yd ³ sample contained 0.0024 oz gold/yd ³ sample collected on bedrock contained 0.0384 oz gold/yd ³ . Upper Quartz Creek is believed to have moderate potential for small mechanized and suction dredge operations. Several surface samples from untested bench gravels contained from a trace to 0.0024 oz gold/yd ³ . One sample of mine run gravel contained 0.0384 oz gold/yd ³ average through 4 ft of gravel resting on bedrock. In excess of 750,000 yd ³ of bench and channel gravels are estimated to occur between Devils Creek and Johns Creek. Portions are likely currently feasible to mine. Quartz Creek is believed to have high mineral development potential for small mechanized hydraulic, hand placer, and suction dredge operations for about a 1 1/4 mi stretch above Devils Creek and moderate mineral development potential in other areas.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-82	<u>Hargood Creek</u> (placer gold) Seward C7 and C8 T 5N, R 2W SM	Hargood Creek (name given by present mine owner) occupies an abandoned channel in a narrow valley, possibly related to an earlier Quartz Creek channel. A broad alluvial fan has developed near the mouth of the valley and extends to Quartz Creek Valley, by which it is truncated. Gold is concentrated in distributary channels within the fan and occurs along certain horizons within each channel. Bench gravels are also present. Gold occurs as flakes with little gold coarser than 3/16 in. present.	An old hydraulic excavation is present on the alluvial fan just south of Crescent Creek trail-head. A small mechanized operation tested the alluvial fan and bench gravels in 1981 and 1982. Total estimated production is 300 oz of which up to 150 oz have been produced since 1980.	Three alluvial fan gravel samples contained from 0.0004 to 0.0315 oz gold/yd ³ . Systematic evaluation of alluvial fan and bench deposits is recommended. Alluvial fan gravels are estimated to exceed 350,000 yd ³ . High mineral development potential for a small mechanized placer operation.
P-83	<u>Crescent Creek</u> (placer gold) Seward B7, B8, C7, and C8 T 5N, R 2W SM	Crescent Creek occupies a relatively steep, narrow, avalanche-debris filled valley. The creek descends in a series of steps with auriferous gravels deposited below each drop. The gravels are clay-rich with numerous boulders to 3 ft diameter. Gold is disseminated throughout the gravels but concentrated on bedrock. Bench gravels contain anomalous gold values. Gold occurs as flakes and is fine grain in the lower part of the creek but nuggety and coarse in the upper section. Production grades of 0.015 oz gold/ton are estimated.	Evidence of early hand mining exists. A small mechanized operation has worked the lower end of Crescent Creek since 1978. Numerous prospect pits have been dug on the alluvial fan below the lower canyon of Crescent Creek. Suction dredging has been tried with some success on upper Crescent Creek. Total estimated production is 500 oz of which up to 200 oz have been produced since 1975.	Three samples from lower Crescent Creek contained 0.01 to 0.031 oz gold/yd ³ . The area sampled has since been mined. One bedrock sample collected from the middle section of Crescent Creek contained 0.0127 oz gold/yd ³ . High mineral development potential for small mechanized and suction dredge operations.
P-84	<u>Dry Creek</u> (placer gold) Seward B7 and B8 T 5N, R 2W SM	Dry Creek occupies a steep narrow avalanche-debris filled valley. The lower end cuts through alluvial gravels believed to be associated with a higher level of Quartz Creek. These bench gravels contain anomalously high gold values.	Very minor prospecting and no significant production has occurred.	0.1 yd ³ sample of surface gravels collected at the lower end of Dry Creek yielded 0.0005 oz gold/yd ³ . Gravels are limited in volume. Low mineral development potential for placer mining. Bench gravels are present in large volumes and have low potential for a small to medium size mechanized operation.
P-85	<u>Stetson Creek</u> (placer gold) Seward B8 T 4N, R 3W SM	Stetson Creek occupies a very steep, narrow, avalanche-debris filled valley with a bedrock gorge developed along its lower section. Gravel deposits below several sets of falls are reported to contain relatively abundant coarse gold. Alluvial fan gravels deposited during an earlier and higher stage of Stetson Creek remain well above the current creek level near its junction with Cooper Creek. Auriferous alluvial fan gravels are at least 50 ft thick, moderately stratified, and have a high clay content.	Hydraulic mining of the alluvial fan deposits occurred in the 1950's. Suction dredging has occurred near the junction of Stetson and Cooper Creeks. Total estimated production is 300 oz of which up to 100 oz have been produced since 1975.	Two samples of channel gravels from the middle portion of Stetson Creek yielded from a trace to 0.0043 oz gold/yd ³ . Small amounts of gold were obtained in 3 samples collected from the old hydraulic pit in the alluvial fan. Gravels are limited in volume. Low to moderate mineral development potential for a small hydraulic operation and moderate to high potential for suction dredging.
P-86	<u>Cooper Creek</u> (placer gold) Seward B8 T 4N, R 3W SM	Cooper Creek occupies a very narrow bedrock-walled gorge nearly to its junction with the Kenai River. An alluvial fan has been deposited along the last 1/2 mi section of the creek. Auriferous alluvial gravels associated with Cooper Creek locally form bench deposits 60 ft above the current creek level. Gold occurs as flakes, with some of it up to 3/16 in. size. Nuggets up to 0.025 oz have been recovered.	Bench and alluvial fan gravels at the mouth of Cooper Creek were worked by pick and shovel and later by hydraulic mining techniques between 1899 and 1917. Only minor production has occurred since, mostly in the form of recreational mining including suction dredging. Total estimated production is 1,100 oz of which less than 50 have been produced since 1975.	Four 0.1 yd ³ samples from bench and bar deposits near the mouth of Cooper Creek contained 0.0018 to 0.019 oz gold/yd ³ . This portion of the creek has high potential for a small mechanized or hydraulic operation. Limited quantities of unmined gravel remain. Cooper Creek below Stetson Creek, has moderate to high mineral development potential for suction dredging.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-87	Kenai River between Cooper Creek and Schooner Bend (placer gold) Seward B8 T 5N, R 4W SM	This stretch of the Kenai River has a well-developed flood plain containing considerable quantities of moderately sorted and stratified alluvium. Fine flakes of gold are disseminated throughout the gravels and is sometimes found in high concentrations near the heads of river bars during periods of low water. Overall grades are believed to be low. Production grades in 1911 and 1912 were reported to be 0.004 oz gold/yd ³ .	Doroshin prospected the area in 1851. A small bucket line dredge operated during 1911 and 1912. Prospecting using dozers and drilling occurred between 1935 and 1956. Only recreational panning has occurred recently. Total estimated production is less than 200 oz.	Three point bar gravel samples collected in the area just above Schooner Bend, yielded from 0.0135 to 0.0449 oz gold/yd ³ . Two samples collected above Cooper Creek yielded only trace amounts of gold. The Kenai River between Cooper Creek and Schooner Bend is estimated to contain in excess of 5 million yd ³ of alluvial gravel. This section has moderate mineral development potential for a medium to large scale mechanized operation and locally for the use of large suction dredges.
P-88	Falls Creek (placer gold) Seward C8 T 6N, R 3W SM	The upper portion of Falls Creek occupies a relatively broad U-shaped valley containing little alluvial gravel. The middle section descends through a steep bedrock-walled canyon and empties out onto an alluvial fan at its junction with Juneau Creek valley.	Small prospect pit was located near the canyon mouth. No production known.	Pan sample from bedrock yielded 0.0042 oz gold/yd ³ . Three 0.1 yd ³ bulk placer samples of surface gravels contained traces of very fine grain gold. Low mineral development potential for commercial placer mining.
P-89	Chickaloon River (upper section) (placer gold) Seward C8 T 7N, R 4W SM	The upper section of the Chickaloon River occupies a narrow steep-sided avalanche-debris filled valley. Alluvial gravel samples contained no large boulders and a moderate to low clay content. Gold is very fine grain.	None.	0.1 yd ³ sample of surface gravels yielded 0.00063 oz gold/yd ³ . Low mineral development potential for commercial placer mining in its upper portion.
P-90	<u>Resurrection Creek</u> including Palmer Creek (placer gold) Seward D7 and D8 T 9N, R 2W SM	Alluvial gravels occupy a flood plain 1,000 ft wide along Resurrection Creek below Palmer Creek. High bench deposits flank the flood plain along both sides. Gravels average 7 ft thick and typically rest upon a tan-yellow clay hard-pan with streaks of blue clay present. Gold is disseminated throughout the gravels but is concentrated on the clay hard-pan and on bedrock in the few locations where it is exposed. The auriferous gravels are moderately well washed and contain boulders generally less than 3 ft in diameter. Production grades of 0.01 oz gold/yd ³ are typically reported for several operations though higher grades occur locally. Upper Palmer Creek flows through a relatively broad valley filled in with avalanche and glacial debris, including large boulders. Lower Palmer Creek occupies a narrow canyon cut partly in bedrock and partly in gravel terraces associated with Resurrection Creek.	Operations on Resurrection and lower Palmer Creeks date back to 1888. Extensive hydraulic and hand placer mining began in 1895 and continued intermittently into the 1950's. Mechanized mining replaced hydraulic mining in the 1960's. Considerable recreational mining currently occurs on Resurrection Creek below Palmer Creek. Little mining has occurred on Palmer Creek above the lower canyon area. However, evidence of prospecting is evident up to Bonanza Creek. Total estimated production since 1895 is 25,80 oz. Approximately 2,000 to 3,000 oz have been produced since 1980.	Due to the current level of mining on Resurrection Creek and because the drainage occurs outside of the study area, placer samples were not collected. Pan samples from Palmer Creek contained traces of gold. The bench deposits are extensive and may eventually prove to have high potential for gold production. Considerable evaluation is needed prior to their development. Based on mining history, the flood plain deposits are believed to have high mineral development potential for small and medium size mechanized operations, for hand placer mining, and suction dredging.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-91	<u>Bear Creek</u> (placer gold) Seward D7 T 10N, R 2W SM	Bear Creek occupies a steep, narrow valley for most of its length and is filled in with avalanche and glacial debris containing large boulders. Lower portion of Bear Creek rests upon an alluvial fan consisting of better sorted and washed gravels. Gold is relatively coarse with nuggets up to 10 oz reportedly recovered. Gold is less pure than gold obtained from most Kenai Peninsula streams.	Mining began in 1894 on Bear Creek. Early mining was restricted to pick and shovel operations with hydraulic mining becoming more prevalent by 1904. Mechanized operations have been mining intermittently since 1975. Total estimated production since 1894 is 5,000 oz of which 1,000 to 1,500 oz have been produced since 1975.	0.1 yd ³ sample of surface channel gravels from upper Bear Creek contained 0.0021 oz gold/yd ³ . Upper Bear Creek will be difficult to mine due to the large boulders present. The alluvial fan deposits at the mouth of Bear creek may have significant gold development potential. Lower Bear Creek is believed to have high mineral development potential for small mechanized mining, hand placer methods, and suction dredging.
P-92	<u>California Creek</u> (placer gold) Anchorage A6 and Seward D6 T 10N, R 2 E SM	California Creek occupies a steep, narrow avalanche-debris filled glacial valley with little accumulation of gravel. An alluvial fan deposited at the lower end of the creek contains disseminated fine grain gold. Middle section of the creek occupies a bedrock gorge. Gravels exposed along California Creek contain considerable clay and in large part are probably glacial till. Grades are reported to be extremely variable.	Hand placer operations worked intermittently between 1898 and 1914. Some hand placer activity has also occurred since 1975. Total estimated production since 1898 is 400 oz.	Two 0.1 yd ³ bench samples collected at the canyon mouth, yielded 0.0006 and 0.0007 oz gold/yd ³ . Low to moderate mineral development potential for a small scale mechanized operation at lower end, and for hand placer mining, and suction dredging operations.
P-93	<u>Crow Creek</u> (placer gold) Anchorage A6 T 11N, R 2E SM	Placer gold is found in four types of gravels on Crow Creek: high bench gravels, recent stream deposits, glacial gravels, and avalanche debris. Bench deposits and recent stream deposits are the highest in grade and have historically produced most of the gold. Glacial deposits and avalanche debris are low grade but may locally contain significant concentrations of gold. The highest grades appear to be associated with old channels in high benches which likely consist of gravels deposited prior to the last glacial advance. The presence of numerous large boulders and cemented gravels may cause mining difficulties. Gold is relatively coarse with 0.0025 to 0.05 oz nuggets common and nuggets up to 1 oz occasionally obtained by recreational miners.	One large and one small hydraulic operation accounted for the majority of the production from Crow Creek prior to 1940. Several historic buildings are maintained at the Erickson Gold Mine and numerous mining artifacts occur along the banks of Crow Creek. One mechanized operation mined intermittently in 1981 and 1982. Recreational mining is currently popular at the Erickson Gold Mine. Total estimated production since 1898 is 42,500 oz. Production since 1979 is estimated to be approximately 400 oz.	Eleven bench and alluvium samples from Crow Creek contained from 0.0013 to 1.17 oz gold/yd ³ . High mineral development potential for suction dredging, small hand placer operations, for small to medium mechanized and hydraulic mining operations.

Map No.	Name (commodity) (location)	Summary of mineralization	Workings and production	Sample data and resource assessment
P-94	Winner Creek (placer gold) Seward C6 T 10N, R 2E SM	Winner Creek occupies a relatively wide and gentle U-shaped valley along most of its length with a short bedrock canyon and falls near its junction with Glacier Creek. Gravel deposits consist of well-stratified and washed alluvium within the channel and in some bench deposits and also as clay-rich, cemented glacial or fluvial-glacial bench deposits in other locations. Clay-rich gravels contained relatively coarse (3/16-in.) gold at one sample site.	Hand placer and a hydraulic operation recovered gold between 1898 and 1917. Hand placer methods and suction dredges have been used sporadically since 1975. Total estimated production, all of which has come from the lower 1/4 mi of the creek, is 400 oz of which less than 25 oz has been produced since 1975.	Sampling on bedrock yielded 0.002 oz gold/hr. A bench deposit sample contained 0.002 oz gold/yd ³ . Both samples were collected from the lower end of Winner Creek. Samples collected from the middle and upper portions contained only trace amounts of gold. Winner Creek is believed to have moderate to high mineral development potential along its lower section for small mechanized or hydraulic operations and for suction dredging. The remainder of the creek has low mineral development potential for commercial mining.
P-95	Kern Creek (placer gold) Seward D6 T 10N, R 2E SM	Kern Creek occupies a steep narrow avalanche-debris filled valley with numerous falls and cascades allowing for little accumulation of alluvial gravels until its junction with Turnagain Arm.	Minor production reported.	Samples collected contained only trace amounts of gold. Kern Creek is believed to have low mineral development potential for mechanized operations and suction dredging.
P-96	Peterson Creek (placer gold) Seward D6 T 9N, R 2E SM	Similar to Kern Creek (P-95) except with larger alluvial fan near its terminus. Significant quantities of gold reportedly have been found on bedrock and in bedrock fractures.	Minor production reported. Prospecting has occurred since 1975.	Samples contained only trace amounts of gold. Low to moderate mineral development potential for small mechanized and suction dredge operations.
P-97	Upper Twenty Mile* River (placer river) Anchorage A5 T 11N, R 3E SM	Placer gold is disseminated in currently uneconomic quantities in poorly to moderately washed glacial-fluvial gravels along the upper portions of the Twentymile River. Numerous large boulders are present. Pockets of higher grade material may occur within and adjacent to the river channel.	No recorded production.	Five alluvium samples from the upper portions of the Twentymile River contained from a trace to 0.0073 oz gold/yd ³ . The upper Twentymile River has low to moderate mineral development potential for small mechanized hand placer and suction dredge operations.

APPENDIX E

Analytical Results of Placer Samples Collected in the
PENINSULA Study Area, Chugach National Forest, Alaska

Analytical Results of Placer Samples Collected in the Peninsula Study Area, Chugach NF, Alaska

Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/yd3	Oz /hour	% Gold* Content	Comments
Sew D7	Alder Creek	72	5876	Sluice	0.1yd3	0.0017	----		Alluvial gravels on bedrock.
Sew D3	Avery River	36	5451	Sluice	0.1yd3	0.0002	----	82.2	Coarse gold recovered.*
Sew D3	Avery River	36	5453	Sluice	0.1yd3	0.0083	----		-----"
Sew D3	Avery River	36	5454	Sluice	0.1yd3	0.0016	----		-----"
Sew D3	Avery River	36	5456	Sluice	0.1yd3	0.0001	----		-----"
Sew D6	Bear Creek	91	5872	Sluice	0.1yd3	0.0021	----	69.7	Included some avalanche debris.
Sew D5	Bear Valley		7218	Dredge	1 hr.	----	trace		Amalgamation required***
Sew C6	Bench Creek	11	2464	Dredge	1 hr.	----	trace		Amalgamation required.
Sew C6	Bench Creek	11	2468	Dredge	1 hr.	----	0.001		-----"
Sew C6	Bench Creek	11	2470	Dredge	1 hr.	----	trace		-----"
Sew C6	Bench Creek	11	2471	Dredge	1 hr.	----	0.0001		-----"
Sew D7	Bertha Creek	64	4912	Dredge	0.667 hr.	----	0.0142	77.3	
Sew D6	Bertha Creek	64	5519	Sluice	0.1yd3	0.0129	----	77.7	Bench gravels 10' above creek level, 50' from bank.
Sew C6	Bertha Creek	64	5815	Sluice	0.1yd3	0.0006	----		
Sew D4	Bettles Bay	39	4981	Sluice	0.1yd3	trace	----		Gold too fine to sep.
Sew B4	Bettles Bay	39	5417	Sluice	0.1yd3	0.0009	----		Sample on bedrock.
Sew B4	Bettles Bay	39	5419	Pan	1 pan****	0.018	----		Sample on bedrock.
Sew D5	Billings Creek	41	7222	Dredge	1 hr.	----	0.0014		Amalgamation required.
Sew B8	Boulder Creek *****		5257	Sluice	0.1yd3	0.0003	----		
Sew B8	Boulder Creek		7109	Dredge	1 hr.	----	trace		Amalgamation required.
Sew D6	California Creek	92	5779	Sluice	0.1yd3	0.0006			Extremely high clay content.
Sew D6	California Creek	92	5780	Sluice	0.1yd3	0.0007			High clay content.
Sew C7	Canyon Creek	76	2437	Sluice	0.1yd3	0.0001	----		Amalgamation required.
Sew C7	Canyon Creek	76	4752	Sluice	0.1yd3	0.0054	----	84.0	Coarse gold recovered.
Sew C7	Canyon Creek	76	4753	Pan	0.05yd3	0.014	----	85.5	Bedrock sample-coarse Au
Sew C7	Canyon Creek	76	5609	Sluice	0.1yd3	0.0004	----		Bench gravels to bedrock
Sew D5	Carmen River, NF	42	2446	Dredge	0.883 hr	----	trace		Amalgamated - insignificant recovery.
Sew D5	Carmen River, NF	42	2447	Dredge	1 hr.	----	trace		Amalgamation required.
Sew D5	Carmen River, NF	42	2448	Dredge	1 hr.	----	trace		Amalgamation required.
Sew D5	Carmen River, NF	42	5544	Sluice	0.1yd3	0.0014	----		
Sew D5	Carmen River, SF	42	2449	Dredge	1 hr.	----	trace		Amalgamation required.
Sew C6	Center Creek		2472	Dredge	1 hr.	----	0.0001		Amalgamation required.
Sew C6	Center Creek		2473	Dredge	1 hr.	----	0.0001		Amalgamation required.
Sew C6	Center Creek		2474	Dredge	1 hr.	----	0.0001		Amalgamation required.
Sew D8	Chickaloon River	89	4822	Sluice	0.1yd3	0.0006	----		
Sew C5	Claremont Glacier	45	5731	Sluice	0.1yd3	0.0013	----		
Anch A3	Coghill River, NWF	38	5439	Sluice	0.1yd3	0.0063	----	79.9	Coarse gold - sampled to bedrock.
Anch A2	Coghill River, NWF	38	5702A	Sluice	0.1yd3	0.0011	----		Considerable sulfide recovered.
Anch A2	Coghill River, NWF	38	5702B	Sluice	0.1yd3	0.0004	----		
Sew C7	Colorado Creek	80	4856	Sluice	0.1yd3	0.0002	----		
Sew C7	Colorado Creek	80	5667	Sluice	0.1yd3	0.0022	----	660	
Sew B8	Cooper Creek	86	4805	Sluice	0.1yd3	0.01	----	572	Coarse gold recovered.
Sew B8	Cooper Creek	86	4735	Sluice	0.1yd3	0.0018	----	820	
Sew B8	Cooper Creek	86	4841	Sluice	0.1yd3	0.019	----		Coarse gold recovered.
Sew B8	Cooper Creek	86	5255	Dredge	0.75 hr.	----	0.0001	770	
Sew B8	Cooper Creek	86	5256	Sluice	0.1yd3	0.0046	----		Coarse gold recovered.
Sew C5	Cotterell Glacier	43	5729A	Sluice	0.1yd3	0.0005	----		

Analytical Results of Placer Samples Collected in the Peninsula Study Area, Chugach NF, Alaska

Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/3yd3	Oz/hour	% Gold Content	Comments
Sew C8	Crescent Creek	83	5260	Sluice	0.1yd3	0.01	----	77.0	
Sew C8	Crescent Creek	83	5261	Sluice	0.05yd3	0.031	----	77.0	1yd2 bedrock worked - coarse gold recovered.
Sew C8	Crescent Creek	83	5262	Sluice	0.1yd3	0.015	----	81.8	Coarse gold recovered.
Sew C8	Crescent Creek	83	5356	Pan	0.04yd3	0.0135	----	77.3	1 hr. sniping on bedrock coarse gold recovered.
Sew D6	Crow Creek	93	4736	Sluice	0.1yd3	0.0127	----	71.1	Coarse gold recovered.
Sew D6	Crow Creek	93	4737	Pan	1/2 hr bedrock sniping	----	0.012	74.4	Coarse gold recovered.
Sew D6	Crow Creek	93	4739	Sluice	0.1yd3	0.144	----	71.9	Coarse gold recovered.
Sew D6	Crow Creek	93	4740	Sluice	0.1yd3	1.17	----	70.6	Coarse gold recovered.
Sew D6	Crow Creek	93	4743	Sluice	0.05yd3	0.074	----	72.9	Coarse gold recovered.
Anch A6	Crow Creek	93	4744	Sluice	0.1yd3	0.039	----	71.5	Coarse gold recovered.
Anch A6	Crow Creek	93	4751	Sluice	0.1yd3	0.0042	----		Coarse gold recovered.
Sew D6	Crow Creek	93	5513	Sluice	0.1yd3	0.0013	----		Coarse gold recovered.
Sew D6	Crow Creek	93	5514	Dredge	0.667 hr	----	0.0003		Coarse gold recovered.
Sew D6	Crow Creek	93	5873	Sluice	0.1yd3	0.0021	----		Coarse gold recovered.
Sew D7	Cub Creek	72	5877	Sluice	0.1yd3	0.0073	----	74.5	
Sew C4	Culross Mine Drainage		5397	Sluice	0.1yd3	0.0009	----		
Sew B8	Dry Creek	84	4877	Sluice	0.1yd3	0.0005	----		
Sew D2	Eaglek Bay	35	5716A	Sluice	0.1yd3	0.001	----		Amalgamation required.
Sew D7	East Fork Creek	73	4919	Pan	1 pan	0.0025	----		
Sew D7	East Fork Creek	73	4921	Sluice	0.1yd3	0.0267	----	80.0	Coarse gold recovered.
Sew D7	East Fork Creek	73	4926	Sluice	0.1yd3	0.0320	----	78.9	Coarse gold recovered.
Sew D7	East Fork Creek	73	4927	Pan	2 pans	0.05	----	78.8	
Sew D7	East Fork Creek	73	4928	Sluice	0.1yd3	0.0035	----	81.0	Bench gravels 11.5' to 15' above creek.
Sew D7	East Fork Creek	73	4929	Sluice	0.1yd3	0.0032	----	79.7	Bench gravels 9' to 11.5' above creek.
Sew D7	East Fork Creek	73	4930	Sluice	0.1yd3	0.0019	----		Bench gravels 6' to 9' above creek.
Sew D7	East Fork Creek	73	5511	Sluice	0.1yd3	0.0082	----	80.2	Old tailings?
Sew D7	East Fork Creek	73	5512	Hydraulic/Sluice	0.42 hr.	----	0.0042	80.2	Recovery estimated at less than 50%.
Sew D7	Falls Creek		2492	Dredge	1 hr.	----	0.0002		Amalgamation required.
Sew D7	Falls Creek		5871	Sluice	0.1yd3	0.0003	----		
Sew C8	Falls Creek	88	4847	Sluice	0.1yd3	trace	----		Not recoverable.
Sew C8	Falls Creek	88	4848	Pan	0.03yd3	0.0042	----	80.8	Coarse gold recovered.
Sew B7	Falls Creek	55	4858	Sluice	0.1yd3	0.0077	----	77.6	
Sew B7	Falls Creek	55	5305	Sluice	0.1yd3	0.0022	----	80.3	
Sew B7	Falls Creek	55	7159	Dredge	1 hr.	----	0.0001		Mercury covered gold recovered.
Sew C7	Fresno Creek	78	4857	Sluice	0.1yd3	0.0006	----		
Sew D6	Granite Creek	74	2481	Dredge	1 hr.	----	0.0011		Amalgamation required.
Sew C7	Granite Creek	74	2486	Dredge	1 hr.	----	0.0007		Amalgamation required.
Sew D6	Granite Creek	74	5525	Sluice	0.1yd3	0.0008	----		
Sew B6	Grant Lake Headwaters	56	7160	Dredge	1 hr.	----	0.0006		Amalgamation required.
Sew B6	Grant Lake Head.56		7197A	Sluice	0.1yd3	trace	----		
Sew B6	Grant Lake Head.56		7197B	Dredge	1 hr.	----	0.0002		Amalgamation required.
Sew C6	Groundhog Creek	60	2466	Sluice	0.1yd3	0.012	----		Gravel bar, bedrock reached.
Sew C6	Groundhog Creek	60	2467	Dredge	1 hr.	----	0.0042		Copper nugget recovered.
Sew C7	Groundhog Creek	60	2469	Dredge	1 hr.	----	0.0006		Amalgamation required.
Sew D7	Gulch Creek	73	2487	Dredge	1 hr.	----	0.0006		
Sew D7	Gulch Creek-NW headwaters	73	2408	Dredge	1 hr.	----	0.0007		

Analytical Results of Placer Samples Collected in the Peninsula Study Area, Chugach NF, Alaska

Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/yd3	Oz/hour	% Gold Content	Comments
Sew D7	Gulch Cr.-Middle Headwater Trib.	73	2489	Dredge	1 hr.	----	0.0034		Coarse gold recovered.
Sew D7	Gulch Creek	73	5867	Sluice	0.1yd3	0.0008	----		
Sew D7	Gulch Creek - East Trib.	73	5868	Pan	4 pans	0.0296	----	76.1	Coarse gold recovered - bedrock sample.
Sew C8	Hargood Creek	82	5835	Sluice	0.1yd3	0.0289	----	80.4	Coarse gold recovered.
Sew C8	Hargood Creek	82	5836	Sluice	0.1yd3	0.0036	----	73.1	Coarse gold recovered.
Sew C8	Hargood Creek	82	5837	Sluice	0.1yd3	0.0315	----	76.4	Coarse gold recovered.
Sew D6	Ingram Creek	69	2483	Dredge	1 hr.	----	0.0011		Coarse gold recovered.
Sew C7	Johnson Creek		2463	Dredge	1 hr.	----	trace		
Sew D2	Jonah Bay	33	5714A	Sluice	0.1yd3	0.0013	----		
Sew B8	Kenai Lake Trib.		2499A	Dredge	1 hr.	----	trace		
Sew B8	Kenai Lake Trib.		2499B	Sluice	0.1yd3	0.0008	----		Flood gold.
Sew B8	Kenai River	87	4733	Sluice	0.1yd3	0.0135	----	81.4	
Sew B8	Kenai River	87	4913	Sluice	0.1yd3	trace	----		Not recoverable.
Sew B8	Kenai River	87	4914	Sluice	0.1yd3	0.0001	----		Amalgamation required.
Sew B8	Kenai River	87	4915	Sluice	0.1yd3	0.0449	----	86.0	Very fine gold recovered
Sew B8	Kenai River	87	4916	Sluice	0.1yd3	0.0270	----	82.6	Very fine gold recovered
Sew B8	Kenai River	87	5899	Dredge	1/2 hr		0.003		
Sew C5	Kings River	46	4959	Sluice	0.1yd3	0.0003	----		
Sew C5	Kings River	46	5373	Sluice	0.1yd3	0.0083	----	81.2	Coarse gold recovered.
Sew C5	Kings River	46	5379	Dredge	1.5 hr.	----	0.0017	82.7	
Sew C5	Kings River	46	5381	Sluice	0.1yd3	0.0014	----		
Sew B5	Kings River Trib	47	5316	Sluice	0.1yd3	0.0035	----	74.2	
Anch A3	Lafayette Glacier	37	5432	Sluice	0.1yd3	0.0010	----		
Sew A7	Lost Creek		7168	Pan	3 pans	trace	0.0003		Bedrock sample.
Sew D6	Lyon Creek	61	2485	Dredge	1 hr	----	0.0132		Coarse gold recovered.
Sew C7	Lynx Creek	61	2475	Sluice	0.1yd3	0.0013	----		Bench gravels sampled.
Sew C7	Lynx Creek	61	2476	Dredge	1 hr	----	0.0001		
Sew C7	Lynx Creek	61	2477	Dredge	1 hr	----	0.0004		Amalgamation required.
Sew C7	Lynx Creek	61	2478	Dredge	0.5 hr	----	0.0011		
Sew C7	Lynx Creek	61	2479	Dredge	0.5 hr	----	0.0149		Coarse gold recovered.
Sew C7	Lynx Creek	61	2480A	Sluice	0.1yd3	0.0085	----		Bench from surface to -5'
Sew C7	Lynx Creek	61	2480B	Sluice	0.1yd3	0.0203	----		Bench sampled from -5' to -8'
Sew C7	Lynx Creek	61	2480C	Sluice	0.1yd3	0.0118	----		Bench sampled from -8' to -11'
Sew C7	Lynx Creek	61	2480D	Sluice	0.1yd3	0.0163	----		Bench sampled from -11' to -13.5'
Sew C7	Lynx Creek	61	2480E	Sluice	0.1yd3	0.0741	----		Bench sampled from -13.5' to -16'
Sew C7	Lynx Creek	61	2480F	Sluice	0.1yd3	0.0298	----		Bench sampled from -16' to -17', bedrock reached.
Sew C7	Lynx Creek	61	2480G	Hydraulic/Sluice	1.25 hr	----	0.0087		Recovery estimated at less than 50%.
Sew C7	Lynx Creek	61	5604	Sluice	0.1yd3	0.0036	----	77.0	Old tailings?
Sew C7	Lynx Creek	61	5605	Sluice	0.1yd3	0.0412	----	84.6	Clay covered gravel and false bedrock from old drain.
Sew B7	Martin Creek	53	5744A	Sluice	0.1yd3	0.0106	----	80.7	Coarse gold recovered.
Sew B7	Martin Creek	53	5744B	Pan	2 pans	0.1537	----	82.9	Bedrock sample.
Sew B7	Martin Creek	53	7128	Dredge	1 hr	----	0.0001		
Sew B7	Martin Creek	53	7129	Dredge	1 hr	----	0.0006		
Sew B7	Martin Creek	53	7130	Dredge	1 hr	----	0.0278		
Sew A7	Martin Creek	53	7142A	Sluice	0.1yd3	0.0004	----		Amalgamation required.
Sew A7	Martin Creek	53	7142B	Dredge	1 hr	----	trace		Amalgamation required.
Sew B7	Martin Creek	53	7143	Dredge	0.5 hr	----	trace		Amalgamation required.
Sew B7	Meadow Creek		7145	Sluice	0.1yd3	trace	----		Majority of sample probably avalanche debris
Sew C7	Mills Creek	79	4898	Sluice	0.1yd3	0.0011	----		
Sew C7	Mills Creek	79	5879	Sluice	0.1yd3	0.0869	----	83.4	Coarse gold recovered.
Sew C7	Mills Creek	79	7110A	Sluice	0.1yd3	0.0001	----		Bench gravels sampled from -4' to -7'.

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Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/3	Oz/hour	% Gold Content	Comments
Sew C7	Mills Creek	79	7110B	Sluice	0.1yd3	0.0035	----		Bench gravels sampled -7' to -8.5'.
Sew C7	Mills Creek	79	7110C	Sluice	0.1yd3	0.0044	----		Bench gravels sampled from -8.5' to -9.5'.
Sew C7	Mills Creek	79	7111A	Sluice	0.1yd3	trace	----		Bench gravels & avalanche debris.
Sew C7	Mills Creek	79	7111B	Dredge	1 hr	----	0.0554		Coarse gold recovered.
Sew C7	Mills Creek	79	7113	Dredge	0.75 hr	----	0.0005		
Sew C7	Mills Creek	79	7115	Dredge	1 hr	----	0.0012		Coarse gold recovered.
Sew C7	Mills Creek	79	7200	Dredge	1 hr	----	0.0006		Coarse gold recovered.
Sew C6	Moose Creek		2461	Dredge	1 hr	----	0.0001		Coarse gold recovered.
Sew B7	Mt. Ascension drainage		7131	Dredge	1 hr	----	trace		
Sew A7	Paradise Creek		5274	Sluice	0.1yd3	0.0001	----		Galena recovered in concentrate
Sew C7	Petes Creek	62	5515	Sluice	0.1yd3	trace	----		Some sulfides present.
Sew C7	Petes Creek	62	5516	Sluice	0.1yd3	0.0007	----		
Sew D4	Pirate Cove	40	4979	Sluice	0.1yd3	0.0010	----		
Sew C6	Placer River	59	2452	Dredge	1 hr	----	0.0003		Considerable sulfide recovered.
Sew C6	Placer River	59	2453	Dredge	1 hr	----	0.0028		Coarse gold recovered.
Sew C6	Placer River	59	2454	Sluice	0.1yd3	0.0001	----		Amalgamation required.
Sew C6	Placer River	59	2455	Dredge	1 hr	----	0.0015		Coarse gold recovered.
Sew C6	Placer River	59	2456	Dredge	1 hr	----	0.0001		Amalgamation required.
Sew C6	Placer River	59	5580	Sluice	0.1yd3	0.0028	----	75.2	
Sew C6	Placer River	59	5581	Sluice	0.1yd3	0.0009	----		
Sew C6	Placer River	59	5582	Sluice	0.1yd3	0.0010	----		
Sew B7	Porcupine Creek	52	4890	Pan	0.02 yd3	0.0022	----		Bedrock sample.
Sew B7	Porcupine Creek	52	4891	Sluice	0.1yd3	0.0008	----		
Sew B7	Primrose Creek		4892	Sluice	0.1yd3	trace	----		Gold very fine.
Sew B7	Ptarmigan Creek		4962	Sluice	0.1yd3	0.0003	----		
Sew B6	Ptarmigan Lake Headwaters		7157	Sluice	0.1yd3	trace	----		Amalgamation required.
Sew C7	Quartz Creek	81	4820	Sluice	0.1yd3	0.0024	----	74.7	Coarse gold recovered.
Sew C7	Quartz Creek	81	4938	Pan	1 pan	0.0384	----		Sample taken on bedrock.
Sew C7	Quartz Creek	81	4939	Sluice	0.1yd3	0.0024	----		
Sew C7	Quartz Creek	81	5522	Sluice	0.1yd3	0.0340	----	79.5	Coarse gold recovered.
Sew C7	Quartz Creek	81	5523	Pan	1.13 lb	----	----	81.7	Concentrate from mining operation contained 0.001 oz of gold or 2.84 oz gold/short ton of concentrate after 1 pass through concentrator.
Anch A6	Raven Creek		5549	Sluice	0.1yd3	0.0017	----		Coarse gold recovered.
Sew A8	Redman Creek		5270	Sluice	0.1yd3	0.0003	----		
Sew D8	Resurrection Creek (90)		4911					83.7	Gold donated by mine owner.
Sew D6	Sawmill Creek	71	2440	Dredge	1 hr	----	0.0004		Amalgamation required.
Sew D6	Sawmill Creek	71	5583	Pan	0.05yd3	0.0029	----		
Sew D6	Seattle Creek	70	2432	Dredge	1 hr	----	0.0029		Coarse gold recovered.
Sew D6	Seattle Creek	70	2433	Dredge	1 hr	----	0.0048		Coarse gold recovered.
Sew D6	Seattle Creek	70	2434	Dredge	1 hr	----	0.0009		Coarse gold recovered.
Sew D6	Seattle Creek	70	2435	Dredge	1 hr	----	0.0014		Coarse gold recovered.
Sew D6	Seattle Creek	70	2436	Dredge	1 hr	----	trace		Amalgamation required.
Sew D6	Seattle Creek	70	2438	Dredge	1 hr	----	0.0001		Amalgamation required.
Sew D6	Seattle Creek	70	2442A	Sluice	0.1yd3	0.0010	----		Bench gravels from top to -3'.
Sew D6	Seattle Creek	70	2442B	Sluice	0.1yd3	0.0048	----		Bench gravels from -3' to -10'; Coarse gold recovered.
Sew D6	Seattle Creek	70	5530	Pan	0.025yd3	0.0301	----	73.5	Bedrock sample.
Sew D6	Seattle Creek	70	5532	Pan	0.0125yd3	0.0136	----		Bedrock sample.
Sew B7	Ship Creek	54	2493A	Sluice	0.1yd3	0.0001	----		Amalgamation required.
Sew B7	Ship Creek	54	2493B	Dredge	1 hr	----	trace		Amalgamation required.

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Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/yd3	Oz/hour	% Gold Content	Comments
Sew B7	Ship Creek	54	2494	Dredge	1 hr	----	0.0081		Coarse gold recovered.
Sew B7	Ship Creek	54	2495	Dredge	1 hr	----	0.0001		Amalgamation required.
Sew B7	Ship Creek	54	2496	Dredge	1 hr	----	0.0002		Amalgamation required.
Sew B7	Ship Creek	54	2497	Dredge	1 hr	----	trace		Amalgamation required.
Sew B7	Ship Creek	54	4960	Sluice	0.1yd3	trace	----		Amalgamation required.
Sew B7	Ship Creek	54	5745A	Sluice	0.05yd3	0.0304	----	82.4	Bedrock sample - coarse gold recovered.
Sew C7-D7	Silvertip Creek	75	4918	Sluice	0.1yd3	0.0019	----	78.0	
Sew D2	Siwash Bay	34	5715A	Sluice	0.1yd3	0.0036	----		
Sew D2	Siwash Bay	34	5715B	Sluice	0.1yd3	0.0009	----		Bedrock sample.
Sew D7	Silmile Creek	72	4922	Sluice	0.1yd3	0.0016	----		
Sew D7	Silmile Creek	72	4923	Dredge	1 hr	----	0.0182	81.4	Bench gravels sampled from surface to -5'.
Sew D7	Silmile Creek	72	4924	Sluice	0.05yd3	0.0028	----		Coarse gold recovered.
Sew D7	Silmile Creek	72	4925	Dredge	1 hr	----	0.0020	78.4	Bench gravels.
Sew C7	Silmile Creek	72	5777	Sluice	0.1yd3	0.0005	----		Coarse gold recovered.
Sew D7	Silmile Creek	72	5878	Pan	0.0167yd3	0.0214	----	87.4	Poorly sorted bench gravels.
Sew B6	Snow River	50	4864	Sluice	0.1yd3	trace	----		Bedrock sample - coarse gold recovered.
Sew B6	Snow River	50	4882	Sluice	0.1yd3	trace	----		
Sew B6	Snow River	50	4883	Pan	1 pan	0.0464	----		Amalgamation required.
Sew B6	Snow River	50	4886	Sluice	0.1yd3	0.0011	----		Amalgamation required.
Sew B6	Snow River	50	5306	Dredge	0.667 hr	----	0.0001		
Sew B6	Snow River	50	5748B	Sluice	0.1yd3	0.0006	----		Amalgamation required.
Sew C7	Spokane Creek	63	5517	Sluice	0.1yd3	0.0001	----		
Sew C7	Spokane Creek	63	5518	Dredge	1 hr	----	0.0022		Bench from surface to -6'.
Sew B8	Stetson Creek	85	5340	Sluice	0.1yd3	0.0043		83.5	Coarse gold recovered from bedrock.
Sew C7	Summit Creek		4851	Sluice	0.1yd3	0.0001	----		
Kenai B1	Surprise Creek		4903	Sluice	0.05yd3	trace	----		
Kenai B1	Surprise Creek		4904	Sluice	0.05yd3	0.0013	----		
Kenai B1	Surprise Creek		5251	Sluice	0.2yd3	0.0045	----	81.1	Coarse gold recovered.
Kenai B1	Surprise Creek		5252	Sluice	0.2yd3	0.0105	----		Coarse gold recovered.
Kenai B1	Surprise Creek		5253	Sluice	0.1yd3	0.022	----	82.0	Coarse gold recovered.
Kenai B1	Surprise Creek		5254	Sluice	0.1yd3	0.025	----	81.1	Coarse gold recovered.
Sew D6	Taylor Creek	65	5814	Sluice	0.1yd3	0.0011	----		
Sew C5	Taylor Glacier	44	5730	Sluice	0.1yd3	0.0044	----	67.7	Coarse gold recovered, considerable sulfide present.
Sew C7	Timberline Creek		7112	Dredge	1 hr	----	0.0001		Amalgamation required.
Sew D6	Tincan Creek	67	2484	Dredge	1 hr	----	0.0114		Coarse gold recovered, area had been previously dredged.
Sew D6	Tincan Creek	67	5812	Sluice	0.1yd3	0.0023	----		
Sew C6	Trail River	58	2457	Dredge	1 hr	----	0.0012		Coarse gold recovered.
Sew C6	Trail River	58	2458	Dredge	1 hr	----	0.0007		Amalgamation required.
Sew C6	Trail River	58	2459	Dredge	1 hr	----	0.0005		Amalgamation required.
Sew C6	Trail River	58	2460	Sluice	0.05yd3	0.0003	----		Amalgamation required.
Sew C6	Trail River Trib	58	2462	Dredge	1 hr	----	0.0006		
Sew C6	Trail River	58	5747A	Sluice	0.1yd3	0.0015	----		
Sew D5	Twentymile Glacier	(97)	2450	Sluice	0.1yd3	trace	----		Amalgamation required.
Sew D6	Twentymile River Tributary	97	5765	Sluice	0.1yd3	0.0007	----		
Sew D6	Twentymile River Tributary	97	5766	Pan	2 pans	0.0373	----	87.1	Bedrock sample.

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Quad	Drainage	Map No.	Sample No.	Sample Type	Sample size	Concentration Oz/yd3	Oz/hour	% Gold Content	Comments
Anch A5	Twentymile River	97	7223	Sluice	0.1yd3	0.0035	----		Coarse gold recovered.
Anch A5	Twentymile River	97	7224	Pan	3 pans	0.0065	----		Bedrock sample.
Anch A5	Twentymile River	97	7229	Sluice	0.1yd3	0.0001	----		Considerable sulfide present.
Anch A5	Twentymile River	97	7231	Sluice	0.1yd3	0.0005	----		Sampled to bedrock.
Anch A5	Twentymile River Tributary	97	7235	Dredge	1 hr	----	trace		Amalgamation required.
Anch A2	Unakwik Inlet	32	5713A	Sluice	0.1yd3	0.0021	----		
Sew B7	Victor Creek	51	4860	Sluice	0.1yd3	0.0043	----	74.5	Coarse gold recovered.
Sew B7	Victor Creek	51	4935	Sluice	0.1yd3	0.0002	----		
Sew b7	Victor Creek	51	4936	Sluice	0.1yd3	0.0007	----		
Sew D7	Walker Creek		2490	Dredge	1 hr	----	0.0001		Coarse gold recovered.
Sew D7	Walker Creek		2491	Dredge	1 hr	----	0.0003		
Sew D6	Winner Creek	94	4746	Sluice	0.1yd3	0.0283	----		Coarse gold recovered.
Sew D6	Winner Creek	94	4748	Pan	4 hr	----	0.002		Bedrock sampling - coarse gold recovered.
Sew D6	Wolverine Creek	68	2482A	Dredge	1 hr	----	0.0036	71.6	Coarse gold recovered.
Sew D6	Wolverine Creek	68	2482B	Dredge	1 hr	----	0.0018	70.9	Coarse gold recovered - Amalgamation required.
Sew B6	Wolverine Glacier	48	5371	Sluice	0.1yd3	0.0002	----		

* % Gold Content - based upon fire assay of the gold recovered. Impurities include silver, base metals and silica (see table 4).

** Coarse gold refers to particles >0.05 inches in diameter.

*** Amalgamation required: indicates that considerable fine gold is present which requires amalgamation or other fine gold recovery process to recover.

**** Calculated concentration assumes 160-16 inch pans equals 1 cubic yard.

***** No map number given due to lack of anomalous gold in samples.
Streams appear to have very low placer potential.