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131-6

TERRITORY OF ALASKA
DEPARTMENT OF MINES

REPORT ON THE PRELIMINARY EXAMINATION OF THE PENINSULA EXPLORATION CO. COPPER CLAIMS ON SITKALIDAK ISLAND, ALASKA

by

Robert H. Saunders

Associate Mining Engineer

January 1952

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ABSTRACT

The Peninsula Exploration Co. holds eight lode mining claims in the valley of Jack Creek on Sitkalidak Island, which is off the southeast coast of Kodiak Island. In several places on the claims, there are exposures of shear zones in which narrow fissures have been filled with copper-bearing minerals.

The prospecting that has been done shows that copper mineralization did occur; whether or not that mineralization formed commercial ore-bodies can be determined only by further prospecting.

INTRODUCTION

As part of its program to furnish aid to prospectors in Alaska, the Department of Mines regularly employs mining engineers to examine mines and prospects. Examinations are made at the request of property owners. Mr. R. E. Krautter, one of the partners of the Peninsula Exploration Co., requested that the Department of Mines send an engineer to examine the property owned by that company on Sitkalidak Island. In response to his request, a preliminary examination was made September 11 to 13, 1951 by Robert H. Saunders, Associate Mining Engineer. This report is written from notes taken during that examination.

Acknowledgement for hospitality and for assistance in gathering the information in this report is due Mr. R. E. Krautter and Mr. Nels Christiansen.

GENERAL INFORMATION

Sitkalidak Island lies on the southeast side of Kodiak Island at approximately 57° N latitude and 153° W longitude. The claims of the Peninsula Exploration Co. are in the valley of Jack Creek near Amee Bay on the north side of Sitkalidak Island. The town of Old Harbor, the nearest permanent settlement, is on Kodiak Island about five miles by water from Amee Bay. Old Harbor is a fishing village with a population of about 100. Mr. Krautter and Mr. Christiansen operate a cold storage plant on Sitkalidak Island across Sitkalidak Strait from Old Harbor.

A mail boat calls at Old Harbor on its monthly trip around Kodiak Island. Freight rates are about $20.00 per ton from Seattle to Kodiak and about $10.00 per ton from Kodiak to Old Harbor. Concentrates could probably be shipped to Seattle at a much lower rate, because they would provide a backhaul for ships bringing freight to Kodiak. Furthermore, concentrates in large quantities could probably be shipped directly to the States from Sitkalidak Island.

The Bob Hall Air Service of Kodiak provides air transportation between communities on Kodiak and adjacent islands; the fare from Kodiak to Old Harbor and return is $50.00 per passenger.

Jack Creek heads near a 2000 ft peak on the northern part of the island and flows northeastward to the cove on the west side of the entrance to Amee Bay. On the right limit side of Jack Creek, a sharp ridge about 1700 ft high parallels the creek, separating the Jack Creek valley from the depression that forms Amee Bay. On the left limit side of Jack Creek, rolling hills a few hundred feet high extend to the rugged coastline along Sitkalidak Strait.

The only trees in the area are a few cottonwoods growing in the lower part of the Jack Creek valley. The upper part of the valley is covered with dense growths of willow, alder, and grass. The highest parts of the mountains and ridges are barren of vegetation.

The partners in the Peninsula Exploration Co. are: Raymond E. Krautter, Nels Christiansen, Henry Nesseth, Robert Von Scheele, Tom Von Scheele, Alfred Torgramson, and Henry Petacchi. The company owns the following eight claims on Sitkalidak Island: Copper Ace, Copper King, Copper Queen, Copper Jack, Defence No. 1, Defence No. 2., Defence No. 3, and Defence No. 4. A sketch map of the property is included in Plate III of the appendix.

GEOLOGY

The geology of Sitkalidak Island has been described by Stephen R. Capps in U.S.G.S. Bulletin 880-C, KODIAK AND ADJACENT ISLANDS, ALASKA. Plate II is a geologic map traced from the map included with Bulletin 880-C. The oldest known rocks are a complex series of metamorphosed lava flows and sedimentary rocks of Triassic and Jurassic age, designated by the letters "Sgs" on Plate II and hereafter referred to as "Group I". Part of the rocks of Group I were derived from slate, chert, graywacke, and limestone. Overlying the rocks of Group I, there is a group of Upper Cretaceous sedimentary rocks, designated by the letters "Ksg" on Plate II and hereafter referred to as "Group II". Group II includes slate, argillite, graywacke, and conglomerate; part of the rocks in Group II have also been metamorphosed. A group of Tertiary rocks, on Plate II designated by the letters "Tss", overlies the rocks of Group II. The Tertiary rocks include sandstone, shale, conglomerate,

and a few narrow coal seams. Present stream deposits of gravel, sand and silt overlie the Tertiary beds. In the northwestern part of the island, there is a body of granular intrusive rock of late Upper Cretaceous or early Tertiary age.

Three major faults, striking about northeast-southwest, are shown on Plate II. The downthrown block of each of these faults lies on the southeast side of the fault.

The upper part of Jack Creek follows roughly along the contact between granular intrusive rocks on the left limit side and rocks of Group II on the right limit side. The lower part of Jack Creek follows roughly along a major fault; here, as in the upper part of the valley, the rocks of Group II are on the right limit side of the creek, but on the left limit side are rocks of Group I.

All of the known exposures of copper-bearing minerals are on the right limit side of Jack Creek, where rocks of Group II constitute the wallrock. The deposits consist of shear zones in which narrow fissures are filled with chalcopyrite, pyrrhotite, and possibly minor amounts of other metallic sulfides. The fissure fillings are probably genetically related to the igneous rocks on the left limit of Jack Creek. All of the fissures exposed at the time of this examination were less than one-quarter inch wide; the fissures are spaced from two inches to a few feet apart within the shear zones. There is apparently one strong shear zone that has a vertical dip and parallels Jack Creek extending from the Defence No. 1 claim through the Copper King. Probably this zone is a branch of the

major fault shown on Plate II. A second zone that dips about 60° east cuts across the Jack Creek valley and outcrops near the southwest end of the Copper King. The exposure on this second zone has been called the "finger nail" by the owners.

SAMPLES AND ASSAYS

Table I shows the assay results of six samples taken during this examination and assayed at the Territorial Department of Mines Assay Office in Anchorage. The locations from which the samples were taken are shown on Plate III in the appendix.

Sample No. 6 was taken from an outcrop in the center of a steep ravine on the southwest side of the valley of East Jack Creek. Intermittent flow of water down the ravine has eroded channels on both sides of the outcrop. About fifty feet southeast of the site from which the sample was taken, there is another green-stained outcrop exposing chalcopyrite-filled fissures. Aside from these two outcrops, the side of the valley is covered with slide material and dense vegetation, making it impossible to determine the total width of the shear zone. The width, however, appears to be greater here than at the other exposures. Because of the apparent greater width, numerous mineralized fissures, and favorable topography, this exposure was selected as the site for starting a prospect tunnel.

Samples taken by the owners have assayed at least as high as 16.9% copper. It is likely, however, that those samples consisted of sulfides chipped from the narrow fissures, therefore, they are not indicative of the tenor of material that could be mined, but they are probably indicative

of the tenor of material that could be obtained from a gravity concentration process.

TABLE I

Sample No.	Length of Channel	Oz. per Ton Gold	Oz. per Ton Silver	% Copper	Remarks
1	3 ft	trace	0.10	Less than 0.10%	Shear zone with chalcopyrite in small fractures.
2	1	nil	nil	" " "	Quartz vein crossing Jack Creek.
3	5	nil	nil	" " "	Same as No. 1.
4	3	trace	nil	" " "	" " "
5	6	trace	nil	" " "	" " "
6	3	trace	nil	" " "	" " ".

PROPOSALS

After the proposed tunnel has been driven about fifty feet into the hillside, crosscuts should be driven from the end of the tunnel to expose the total width of the shear zone. Within the shear zone, there may be one or more groups of closely spaced, chalcopyrite-filled fissures. If any such closely spaced fissures are found, channel samples, not less than thirty inches long, should be cut perpendicular to the strike of the fissures. In cutting these samples, rock between the fissures should be included in the samples in the same proportion that rock between the fissures would be included in the material mined. That is; the channel should be the same width and depth throughout its length. If the crosscuts do not expose any groups of closely spaced fissures from which channel samples can be cut that average at least 5% copper, work on the tunnel should be abandoned.

The small shear zone exposed at the "finger nail" probably intersects the main shear zone that parallels Jack Creek somewhere on the northeast end of the Copper Queen claim. Near such an intersection, brecciation of the wallrock may provide many closely spaced openings for mineralization. An effort should be made, therefore, to locate the intersection by tracing the course of the two shear zones on the surface.

Samples 3, 4, and 5 were taken across the total width of the shear zone exposed at the "finger nail". Further prospecting on this shear zone is not recommended except near the intersection previously mentioned.

In the deposits now exposed, mineralization has taken place by filling of open fissures; there has been little or no replacement of the wallrock. If there are any deposits that have been formed by replacement, those deposits are most likely in rocks rich in lime. Capps describes crystalline limestone and calcareous schist among the rocks of Group I. Plate II shows an area of rocks of Group I (Sgs) lying on the left limit side of Jack Creek between the rocks of Group II (Ksg) and the intrusive igneous rocks.

There is, therefore, a possibility that in this area there are deposits in which replacement accompanied fissure-filling. If such deposits exist, they are probably richer than any deposits yet discovered on the property. This area should be searched carefully for pieces of float and mineralized fractures, and any indications of mineralization should be thoroughly investigated.

(7,4,3.3)
57°11'
153°15'

TERRITORY OF ALASKA
DEPARTMENT OF MINES

SUPPLEMENT TO

REPORT ON THE PRELIMINARY EXAMINATION OF THE PENINSULA EXPLORATION CO.

COPPER CLAIMS ON SITKALIDAK ISLAND, ALASKA

by

Robert H. Saunders

Associate Mining Engineer

IC-131.8

October 1952

Between the time of the preliminary examination (September 1951) and the time of the second examination (October 1952), the owners did considerable work on the property. One additional claim, the Copper Penny, was staked parallel to, and adjoining the south-east side of, the Copper Jack claim. A temporary frame building large enough to house four men was built near the junction of East Jack Creek and Jack Creek. A cross-cut adit was driven into a mineralized zone on the right limit side of East Jack Creek near the site of Sample No. 1 as shown on Plate III in the original report. Surface outcrops indicate that the mineralized zone is about 20 ft wide at this place; the adit, however, is driven only nine feet in from the surface. Samples 18 and 23 were cut from that part of the mineralized zone exposed by the adit.

A narrow vein of metallic sulfide, mostly pyrrhotite, was discovered on the right limit side of Jack Creek 210 ft downstream from the mouth of East Jack Creek. The vein strikes N-5°-E and dips 60° West. Samples 19 and 22 were cut across the full width of the vein.

A similar vein was discovered, also on the right limit side of Jack Creek, 100 ft downstream from the mouth of East Jack Creek. This vein strikes N-20°-E and dips 85° West. Samples 20 and 21 were cut across the full width of this vein.

In 1951 , chalcopyrite was the only copper mineral identified; in exposures made since 1951, minor amounts of bornite can be seen with the chalcopyrite.

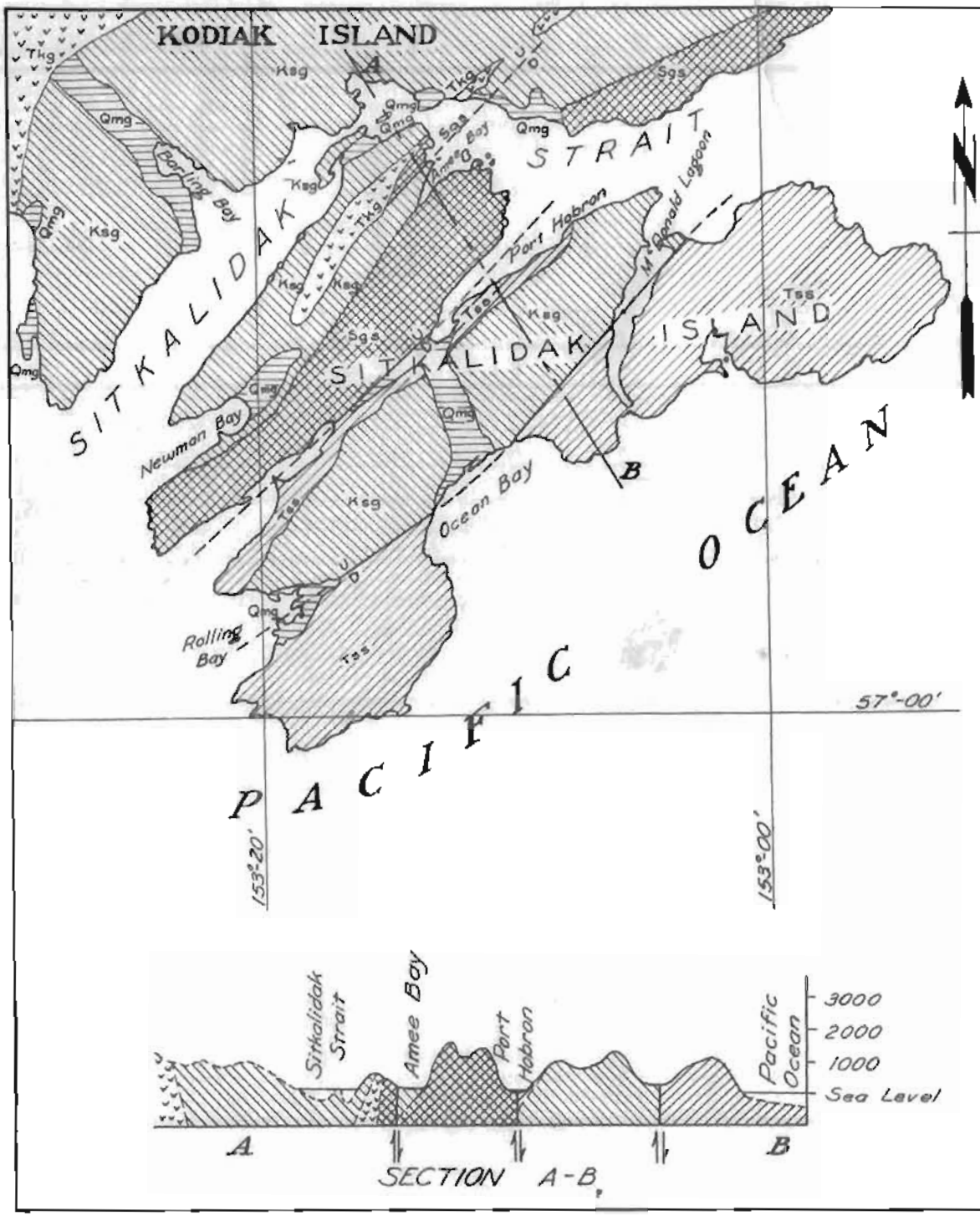
Although the samples taken in 1952 ran considerably higher than those taken in 1951, the copper content of these samples is still too low for commercial deposits in this locality.

SAMPLE RESULTS

SAMPLE NO.	LENGTH OF CHANNEL	LOCATION (see Plate III, original report)	CU	AU	AG
18	7.5 ft.	NE side of x-cut adit. Near Sample No. 1, 1951.	1.36%	Tr	Tr
19	0.7	Right limit of Jack Creek, 210 ft downstream from mouth of East Jack Creek. Elev. 500 ft.	1.24	Tr	Tr
20	2.2	Right limit of Jack Creek, 100 ft downstream from mouth of East Jack Creek. Elev. 530 ft.	1.69	Nil	Tr
21	1.5	Three feet south of No. 20. Same vein as No. 20.	4.10	Tr	Tr
22	0.5	Five feet toward Jack Creek from No. 19. Same vein as No. 19.	0.87	Tr	Tr
23	6.3	Near No. 18. SW side of x-cut adit. Same mineralized zone as No. 18.	1.26	Tr	Tr

Samples 19, 22, and 23 were assayed for nickel and each showed a trace.

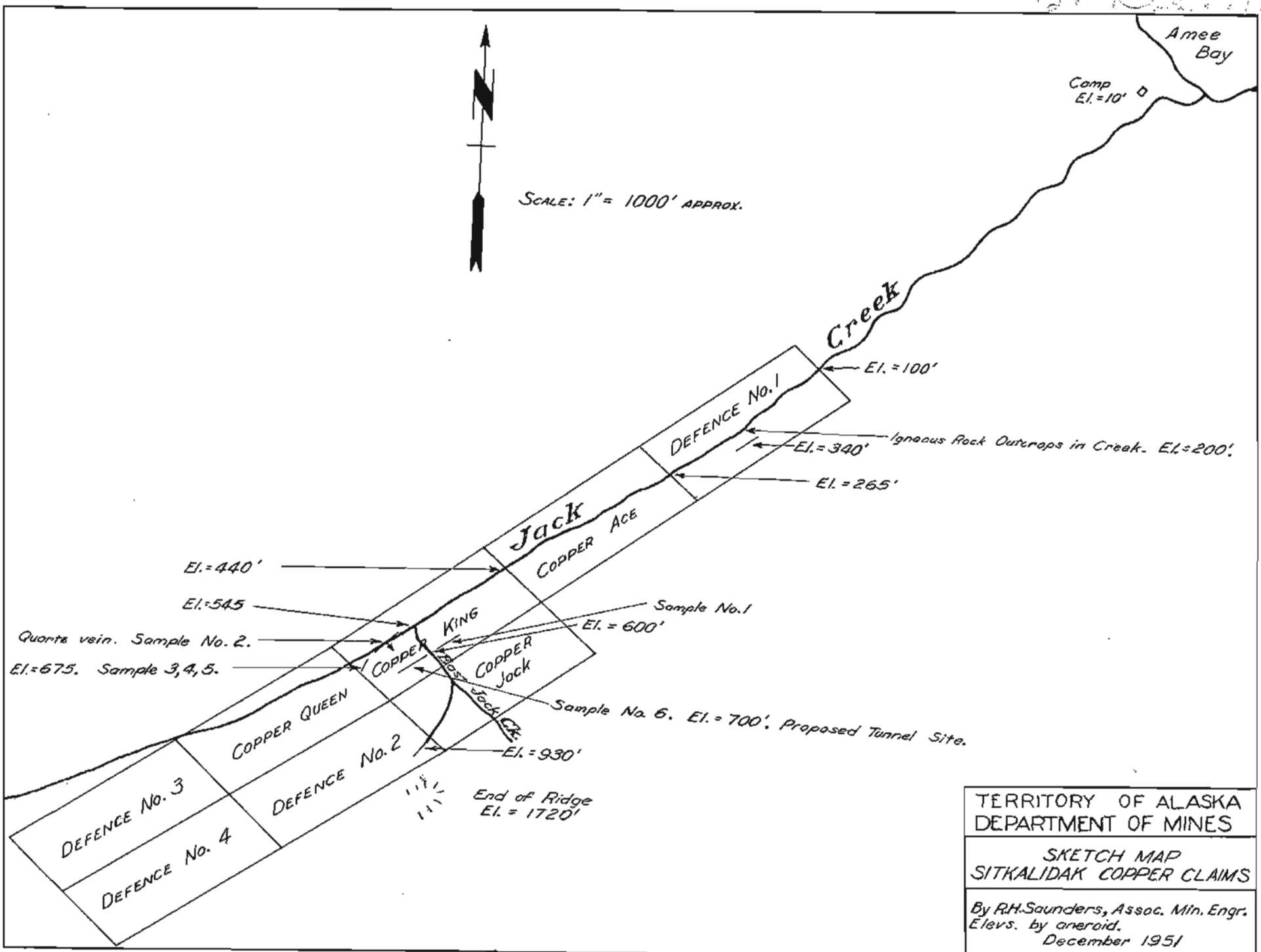
131 Kodiak



TERRITORY OF ALASKA
DEPARTMENT OF MINES

GEOLOGIC MAP
SITKALIDAK ISLAND

Traced from U.S.G.S. Map of Kodiak and Adjacent Islands By R.H. Saunders, Assoc. Min. Engr.


Amee Bay
Camp El. = 10'
Creek
El. = 100'
Igneous Rock Outcrops in Creek. El. = 200'.
El. = 340'
El. = 265'
DEFENCE No. 1
COPPER ACE
Jack
El. = 440'
El. = 545
Quartz vein. Sample No. 2.
El. = 675. Sample 3, 4, 5.
KING
COPPER
Sample No. 1
El. = 600'
COPPER Jack
Jack Ck.
Sample No. 6. El. = 700'. Proposed Tunnel Site.
COPPER QUEEN
DEFENCE No. 2
El. = 930'
End of Ridge El. = 1720'
DEFENCE No. 3
DEFENCE No. 4
SCALE: 1" = 1000' APPROX.
TERRITORY OF ALASKA
DEPARTMENT OF MINES
SKETCH MAP
SITKALIDAK COPPER CLAIMS
By R.H. Saunders, Assoc. Min. Engr.
Elevs. by aneroid.
December 1951

DM-11
Rev. 10/67

Rep No. 1657

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report Dec. 27, 1968

Samples from Sithalibak Prospect.
Sampler unknown.

LABORATORY ANALYSIS REPORT

For R. A. Ugvenny Address Box 4-2050, Anchorage, Ak. 99503

Number of Samples 5 Date Sample Received 12/20/68

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☒ semi-quant. ☐
F. Fire assay ☐
G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
36040	#3 8' wide	0.003	36.0	2.81	0.009	0.152
36041	#4 upper 6' wide	0.003	63.4	1.93	0.003	0.070
36042	lower 4 3' wide	0.008	00.44	3.50	0.008	0.182
36043	#5 upper 6' wide	0.008	00.41	3.09	0.005	0.085
36044	#7 upper In stream	0.01	153.	5.46	0.022	0.317
36045	#9 North side, 8' vein	0.008	00.33	3.15	0.047	0.167

E. Accuracy for the atomic absorption exam is ±10% of the reported value for Gold and Silver. Accuracy for the Copper, Lead, and Zinc is ±5% of the reported value.

Namok Cho
E. Namok Cho ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: Paul L. Anderson
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

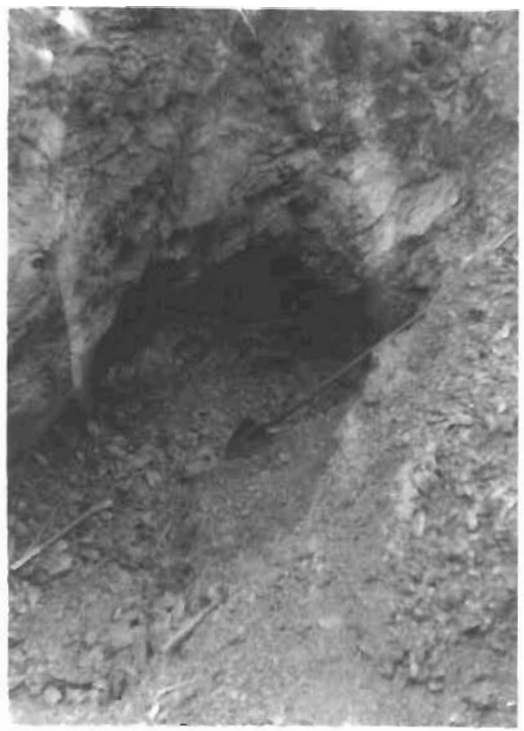
Paul L. Anderson

Cold storage plant, Sitkalidak Island.

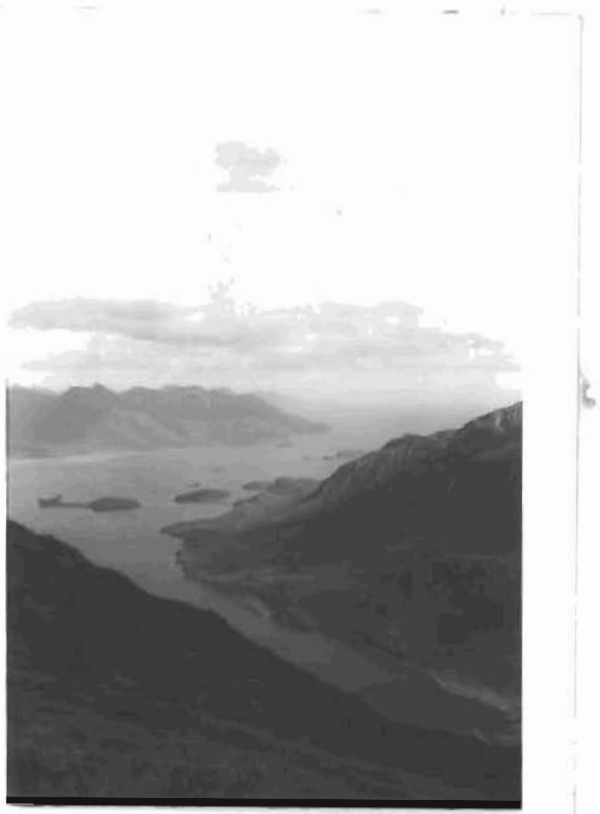
Harbor at cold storage plant. Kodiak Island in background.

Valley of Jack Creek.

Camp at mouth of Jack Creek.

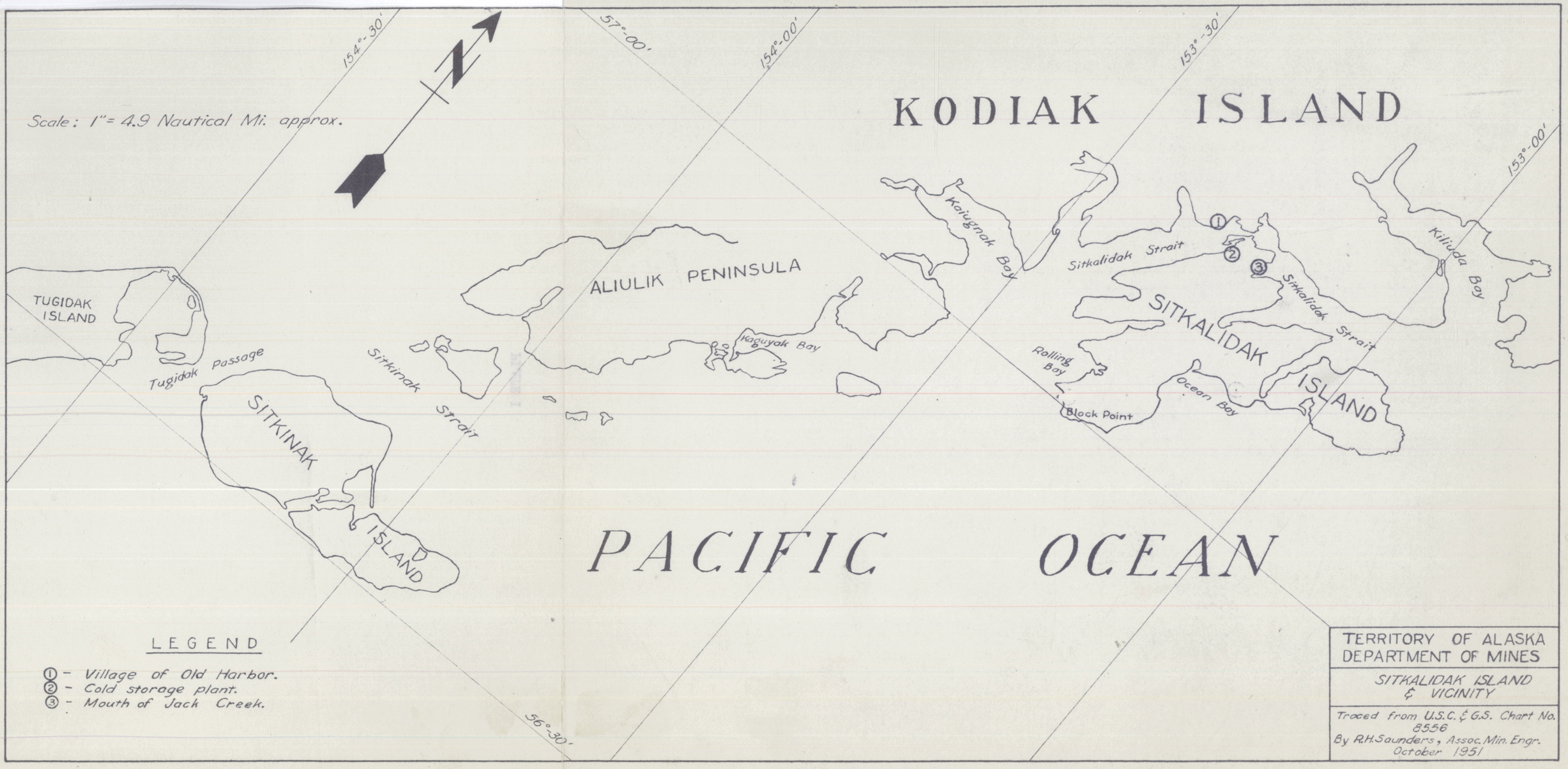


Excavation at the "finger nail".



Amee Bay

Mouth of Amee Bay.


Scale: 1"= 4.9 Nautical Mi. approx.
154°-30'
57°-00'
154°-00'
153°-30'
153°-00'
KODIAK ISLAND
ALIULIK PENINSULA
Kaiugnak Bay
Kaguyak Bay
Sitkalidak Strait
SITKALIDAK ISLAND
Sitkalidak Strait
Kiliuda Bay
TUGIDAK ISLAND
Tugidak Passage
Sitkinak Strait
SITKINAK ISLAND
Rolling Bay
Block Point
Ocean Bay
PACIFIC OCEAN
56°-30'
LEGEND
① - Village of Old Harbor.
② - Cold storage plant.
③ - Mouth of Jack Creek.
TERRITORY OF ALASKA
DEPARTMENT OF MINES
SITKALIDAK ISLAND
& VICINITY
Traced from U.S.C. & G.S. Chart No. 8556
By R.H. Saunders, Assoc. Min. Engr.
October 1951