UNITED STATES 530
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

September 17, 1951

Memorandum

To: Mr. Tom Lyon, Director, Supply Division

From: Mr. Stanley M. Walker, Acting Chief, Housing and Utilities Branch

Subject: Access Road - AR-22, Alamco, Inc., Fairbanks, Alaska

The Alamco Company applied for an access road and also an exploration project loan. The loan was subsequently withdrawn and the Alaska DMA Field Team therefore reported separately on the access road recommending a denial of the road but suggesting their approval of a modest exploration project if the request were made.

I am attaching hereto a copy of the field team report and also a copy of the report of Mr. Robert M. Chapman of the U. S. Geological Survey on this property for your future use in the event an application is made for an exploration project.

Stanley M. Walker

Stanley M. Walker

Attachments

REPORT OF ALASKA FIELD TEAM

Antimony

Application for Access Road, Alamco, Inc., Fairbanks, Alaska
(Sawtooth Mountains, Rampart District, Alaska)

INTRODUCTION

An application for an access road from Livengood to the applicant's antimony mine at the Sawtooth Mountains and an airstrip near the mine was referred to the D.M.A. Field Team on May 14, 1951. The access road application form indicated that the applicant was also applying for exploration assistance from D.M.A. To date the Field Team has no indication that an application for exploration assistance has been submitted.

Early this summer the only means of access to the mine was via the applicant's weasel; it was not available until the middle of July. Robert M. Chapman and Paul D. Benson, both geologists of the Geological Survey inspected the applicant's mine in July 1951. They were accompanied by Howard C. Sparks, President of Alamco, Inc.. Mr. Chapman's report on the mine is attached hereto.

At the present time the only means of access to the Sawtooth antimony mine is via a 35-mile tractor trail from Livengood, or by small airplane to a recently constructed landing strip at the base of the Sawtooth Mountains. Equipment has been hauled in, and ore hauled out, during winter months by tractor train, a generally satisfactory method of winter transportation in interior Alaska. Travel via the tractor trail is most difficult in the summer months when the ground is soft and the streams may be in flood.

ACCESS ROAD

The applicant requests approximately 40 miles of road from Livengood to the Sawtooth Mountains. The approximate course of the proposed access road would follow the present tractor trail shown on the map accompanying Mr. Chapman's report. It would follow the valley of the West Fork of the Tolovana River from Livengood to Chocolate Creek and thence to the mine.

Road construction in this area is rendered difficult by permafrost, swampy ground, and periods of high water and shifting stream channels. No detailed estimates have been made of the cost of constructing an access road and landing strip, but it is estimated that a seasonal-use truck road alone would cost at least $15,000 per mile, for a total cost of over $500,000. No estimate has been made of the cost of a suitable landing strip. A crude type of strip has been partially constructed by Alamco. (August 1951).

An access road from Livengood to the Sawtooth Mountains would serve no useful purpose other than to provide access to the present antimony mine. There are no inhabitants that would be served by the proposed road.

CONCLUSIONS

On the basis of the data contained in Mr. Chapman's report it is very obvious that there is no justification at the present time for expending public funds to construct an access road to the applicant's mine. The mine is so little explored that it is impossible to intelligently estimate the ore reserves of the antimony deposit. A total of about 246 tons of antimony ore averaging about 40 percent of antimony has been produced from the property over the last three years. The small amount of exploration that has been done on the property does not permit any appraisal of the potential ore reserves. Future production may or may not equal the ore that has been mined to the present.

The Field Team does not believe that construction of an access road by public funds to the applicant's antimony mine is justified at this time.

RECOMMENDATIONS

The Field Team recommends the following:

1. The access road application be denied. If at some future date additional exploration and development at the mine should reveal ore reserves that would justify an access road, then the applicant should re-apply for Government assistance.

2. The applicant should submit a modest request for Government assistance in exploring its deposit. The mine definitely has promise and additional work may well reveal substantial ore bodies.

FIELD TEAM, REGION I
August 31, 1951

_____, Executive Officer
S. H. Lorain, Regional Director
Region I, U. S. Bureau of Mines
By J. A. Herdlick, Alternate

W. S. Twenhofel
W. S. Twenhofel, Geologist
U. S. Geological Survey

STIBNITE DEPOSIT AT THE SAWTOOTH MOUNTAINS, ALASKA

REPORT OF INVESTIGATION FOR THE DEFENSE MINERALS ADMINISTRATION

July 1951

By

Robert M. Chapman, U. S. Geological Survey

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Figure 2. Sketches showing northeast and southwest walls of the Sawtooth Mountains mine . . . . . After P. 13

Figure 3. Plan view of bottom of Sawtooth Mountains mine shaft. . . . . After P. 13

Figure 4. Plan view of surface area at Sawtooth Mountains mine shaft. . . . . After P. 13

Figure 5. Map showing stibnite occurrences on Sawtooth Mountains . . . . . After P. 13

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FILE COPY
SURNAME:

Bourret

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

AIR MAIL

a, b, c -

Mr. Howard Sparks, President
Alamco, Incorporated
P. O. Box 1774
Fairbanks, Alaska

Re: Antimony Tok River Region
DMA docket 1035-X

Inasmuch as we have had no communication from you in reply to letters of the Minor and Rare Metals Branch on April 27, 1951 and May 15, 1951 we are obliged to assume that your application has been withdrawn.

If we are in error kindly advise us at your earliest convenience.

Yours very truly,

Weston Bourret, Chief
Minor and Rare Metals Branch

EGordon/ch 8-23-51
cc: Adm. Reading File
Reports and Records
Lyon
Bourret
Renick
McKnight - USGS
Field Team - I
DMA docket file

AIR MAIL

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Mr. Howard Sparks, President
Alamoo, Incorporated
P. O. Box 1774
Fairbanks, Alaska

Re: Antimony Yok River Region
DMA docket 1035-X

Inasmuch as we have had no communication from you in reply to letters of the Minor and Rare Metals Branch on April 27, 1951 and May 15, 1951 we are obliged to assume that your application has been withdrawn.

If we are in error kindly advise us at your earliest convenience.

Yours very truly,

Weston Bourret, Chief
Minor and Rare Metals Branch

EGordon/ch 8-23-51
cc: Adm. Reading File
Reports and Records
Lyon
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McKnight - USGS
Field Team - I
DMA docket file

STIBNITE DEPOSIT AT THE SAWTOOTH MOUNTAINS, ALASKA

REPORT OF INVESTIGATION FOR THE DEFENSE MINERALS ADMINISTRATION,

JULY 1951

By

Robert M. Chapman, U. S. Geological Survey

Introduction

The Sawtooth Mountains are located about 65 miles northwest of Fairbanks, about 30 miles west-southwest of Livengood, and about 20 miles southeast of Rampart at approximately 65°23' N., and 149° 30' W. This group of jagged peaks is one of the most prominent topographic features in the area and forms the highest part of the divide in this area between the Yukon and Tanana Rivers' drainages. The highest elevation in the group of mountains is 4808 feet. The antimony mine is located at the head of Chocolate Creek on the southeast side of Sawtooth Mountains near the top of the peaks.

The area can be reached during the summer season by a good gravel highway from Fairbanks to Livengood (81 miles) and via a trail, passable only for "weasel" 1/ or foot travel from Livengood to Sawtooth Mountains (35 miles). During the winter months, approximately mid-October to mid-April, the highway between Olness (about 20 miles from Fairbanks) and Livengood is not maintained, and travel over the road by truck or car is impossible. The trail from Livengood to Sawtooth Mountains is much better in the winter when there is a snow cover and the ground and streams are frozen. It is passable

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1/ A lightweight, tracked Army vehicle designated Carrier, Cargo, M 29 or M 29 C, which combines many features of the Jeep and caterpillar tractor.

to caterpillar tractors and tractor trains during this season. The bush airfield at Livengood is about 1500 feet long and is situated on a ridge immediately north of the town site. The runway is unimproved and is given a minimum of maintenance by local residents. Its restricted length and the prevailing cross wind make it an undesirable field, and it is suitable for landings of only small and medium size single engine planes.

In addition to the data that were gathered in the field, information on this area was obtained from the following sources:

1 - U. S. Geological Survey Bulletin 662-D, The gold placers of the Tolovana district, Alaska, by J. B. Mertie, Jr., 1917.

2 - U. S. Geological Survey Bulletin 872, The Yukon-Tanana region, Alaska, by J. B. Mertie, Jr., 1937.

3 - J. B. Mertie, Jr., Stibnite deposit on Chocolate Creek, Tolovana district, memorandum, U. S. Geological Survey files.

4 - Howard C. Sparks, Leo Mark Anthony, Fred Wackwitz -- personal communications.

Geography and vegetation

This area is characterized by broad ridges, moderately steep hill slopes, wide and narrow flat-floored valleys, sharply cut headwater tributary valleys, and moderate relief. The average relief is 1,200 to 1,600 feet with the greatest relief at Sawtooth Mountains of about 3,600 feet. The lowest elevation, approximately 600 feet is near Livengood, and the highest, about 4,800 feet, at Sawtooth Mountains.

The hilltops and slopes are well drained, and the larger valleys are broad, level floored and swampy. The larger creeks meander but are confined to a single channel.

A good year around water supply does not exist on the top of Sawtooth Mountains. During the winter months water could probably be obtained only by melting the snow. As far as known no water was encountered in the mine shaft during the winter. Adequate water from normal melting and rainfall is available during the spring, early and late summer, and fall. In the middle part of the summer water would have to be stored in tanks to insure an adequate supply for camp use. At the time of the Geological Survey party's visit (during an unusually dry period) the only water available for drinking and cooking was that previously collected in a barrel. Sufficient water was flowing, however, in all the creeks below an elevation of approximately 2000 feet.

The vegetation, consisting of spruce, birch, alder, poplar, and willow trees, small brush, and moss, is the usual type found throughout interior Alaska. Some of the spruce trees are as much as 12 inches in diameter, and a fair amount of the timber is of a size that is usable for mine timber and rough construction. The elevation of timber line varies but averages about 2,200 feet. The top of the ridge on the north side of the West Fork of the Tolovana River is barren of timber, and Sawtooth Mountains are barren of all but small brush above 2,000 feet. The timber is thick enough in the valleys and on the slopes so that bulldozing or considerable hand cutting is necessary in order to clear a trail.

Geological Survey field work

A Geological Survey field party consisting of Robert M. Chapman and Paul D. Benson, geologists, and Mark N. Christensen, geologic field assistant, accompanied by Howard C. Sparks, lessee of the antimony mine, visited the area July 12-18, 1951. The party left Livengood via weasel on July 12

but was delayed at Lost Creek (10 miles from Livengood) until the 15th by mechanical difficulties with the weasel. The camp at the mine on Sawtooth Mountains was reached late in the evening of the 15th, and the two following days were spent on field work in the area. Benson supplemented the examination with Geiger counter traverses. The party made the return trip to Livengood in about 12 hours on the 18th.

History and ownership of the property

The original discovery of stibnite in the Sawtooth Mountains was made at the site of the present mine shaft by Fred M. Wackwitz in 1917. No work was done on it at that time. In September 1942 the deposit was revisited and restaked as Sawtooth No. 1 claim by Mr. Wackwitz. In 1948 Leo Mark Anthony and Clarence E. Wollan, operating under the name of Sawtooth Mountain Mining Company, made a working agreement with Wackwitz and spent several months on the Sawtooth Mountains. During this time they mined a reported 110 tons of the rich ore to a depth of 12 feet. They sacked a reported 80 tons of antimony ore and left about 30 tons in a dump. In the course of additional prospecting they located several more surface showings of stibnite and staked 5 more claims to cover these prospects.

The locations of the present claims in the area are shown on figure 1. The claims are:

1 - Sawtooth No. 1 - 600x1500 feet, staked September 11, 1942 by Fred M. Wackwitz.

2 - Sawtooth No. 2 - 600x1500 feet, staked September 22, 1948 by Mark Anthony and Wollan.

3 - Ptarmigan No. 1 - 600x1500 feet, staked July 28, 1943 by Fred M. Wackwitz.

These three claims were recorded in the Livengood District. The records for this district are now kept in Fairbanks.

4 - Windy No. 1 - 600x1500 feet, staked Sept. 20, 1948 by Mark Anthony and Wollan.

5 - Windy No. 2 - 600x1500 feet, staked Sept. 20, 1948 by Mark Anthony and Wollan.

6 - Caribou No. 1 - 600x1500 feet, staked Sept. 12, 1948 by Mark Anthony and Wollan.

7 - Caribou No. 2 - 600x1000 feet, staked Sept. 18, 1948 by Mark Anthony and Wollan.

These four claims were recorded in the Rampart District, and the records are kept in Rampart. The data on these claims were furnished by Mark Anthony.

Alamco, Inc., Howard C. Sparks, president, leased the seven claims from Mark Anthony, Wollan, and Wackwitz in October 1950 and purchased the 110 tons of ore that had been mined in 1948. Alamco now has leased, with option to buy, these claims. Alamco began mining and tractor train hauling about April 7, 1951 and shipped 80 tons of sacked ore and about 20 tons of newly mined ore. Three miners and two men for hauling were employed on this work until mid-May when the melting of the snow and thawing of the ground made the tractor trail impassable. During this time the shaft was mined to a depth of about 32 feet, about 66 tons of ore were put in barrels for shipment, and an estimated 50 tons of ore were put in a dump.

About July 21, 1951, Alamco sent six men to the mine, and they are reported to have cleared a tractor trail from Livengood to Sawtooth Mountains on the top of the ridges on the north side of the West Fork of the Tolovana

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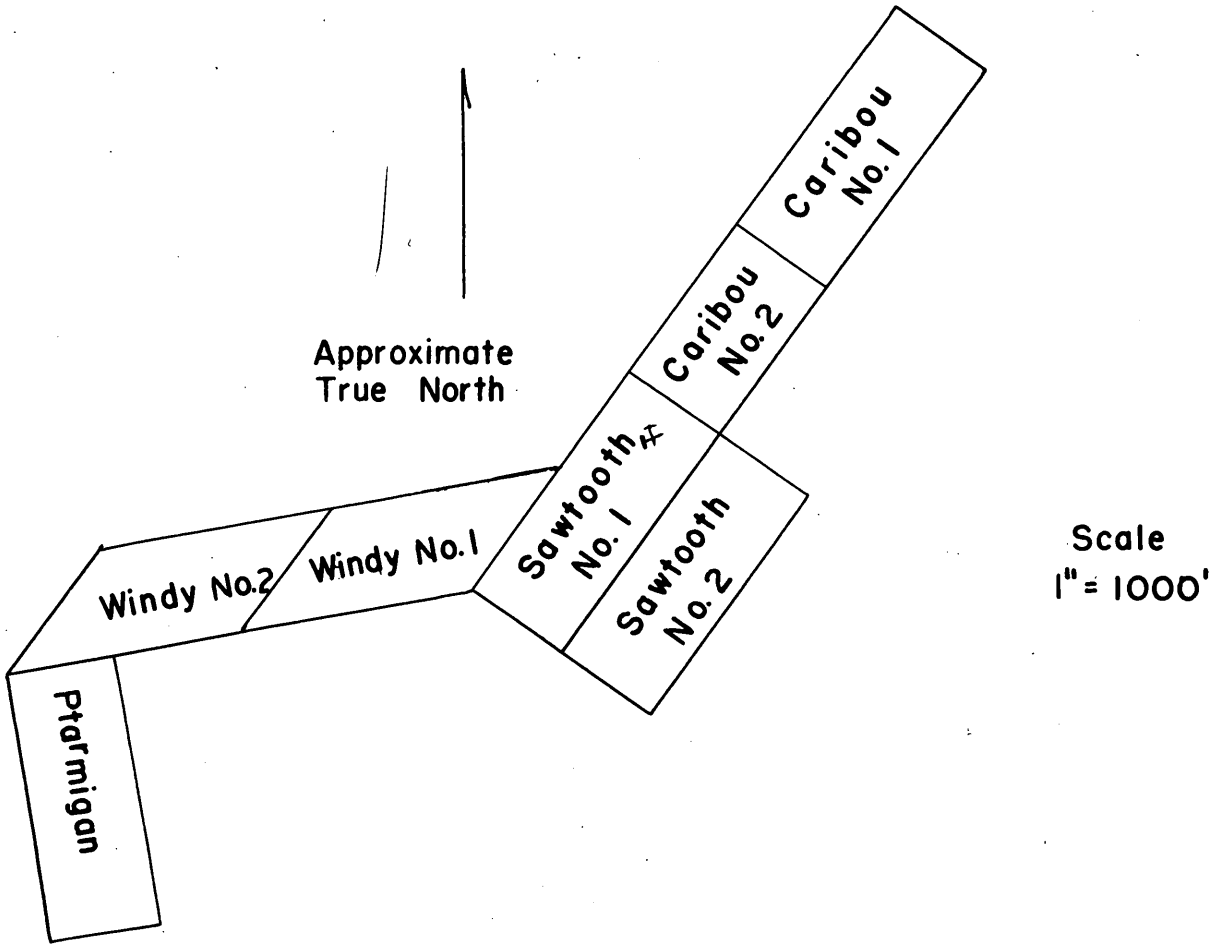

SKETCH MAP OF LODE CLAIMS ON THE SAWTOOTH MOUNTAINS
FIGURE 1

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Fairbanks, Alaska

CONFIDENTIAL

River. They are presently engaged in stripping an airfield site on the flats near the head of Buckeye Creek and improving the tractor trail on Buckeye Creek from the airfield site to the mine. They plan to attempt to haul ore to Livengood over the new trail.

Geology of the area

A wide variety of rock types of several ages occur in the area shown on Plate 1. Field examinations were made by the party in 1951 only on the Sawtooth Mountains, chiefly in the immediate vicinity of the antimony mine. The following descriptions are taken from U. S. Geological Survey Bulletin 872 by J. B. Mertie, Jr., and very little could be added to the excellent work of Mertie and others in this area without considerable detailed field work.

Silurian (?) and Devonian

The oldest rocks in the area are in a unit described as undifferentiated rock, mainly non-calcareous. They are believed, on the basis of scanty fossil evidence, to be Devonian, although some rocks of late Silurian age may be included. This unit includes phyllite, crystalline limestone, conglomerate, sandstone, graywacke, slate, vein quartz, and some diabasic greenstone and serpentine. The rocks are all highly metamorphosed and distorted. In the Sawtooth Mountains area they are believed to lie in an anticlinal basin surrounded by rocks of Mississippian age.

Mississippian

The Mississippian rocks crop out throughout this area and comprise a variety of sedimentary and igneous types. The sequence of rocks is only generally known and determination is complicated by lateral changes and varying degrees of metamorphism.

The oldest formation is the Livengood chert. It is made up chiefly of

chert with minor amounts of interbedded limestone and argillaceous rocks, and some basaltic or diabasic greenstone that is probably intrusive.

The next younger formation is designated as non-calcareous rocks and includes shale, slate, phyllite, sandstone, quartzite, schist, chert, limestone, greenstone and their metamorphic equivalents. A few of the larger limestone units, which are probably part of this formation, are mapped separately. This formation is prominent in the Rampart district where the structure is very complex, and the rocks immediately surrounding Sawtooth Mountains belong to this formation. The western spurs of the mountains are formed by siliceous slate and argillite, chert, chert conglomerate, and sandstone. The shale and argillite adjacent to the intrusive core of quartz monzonite are hardened and altered by contact metamorphism, and minerals, such as andalusite and cyanite, are developed in this zone. At one locality near the monzonite contact, a greatly sheared chert conglomerate was observed by Mertie. The bedding in the Sawtooth area strikes roughly east and dips both north and south. The cleavage dips steeply north.

The Rampart group overlies the non-calcareous formation. In this area it is made up of bedded volcanics and sedimentary rocks, including chert, shale, slate, sandy beds, and some limestone interbedded with diabasic and basaltic flows, tuffs, and breccias of greenstone habit. The structure is complicated by close folding, local faulting, and brecciation. There is a suggestion of a regional north dip in the area north of Sawtooth Mountains and near the Yukon River.

Cretaceous

The Cretaceous rocks in this area are mainly of Lower Cretaceous age with a few local occurrences of Upper Cretaceous rocks. Massive quartzite, argillite, slate, and micaceous or argillaceous sandstone, are the rock types.

They occur mainly in the vicinity of granitic intrusions and show marked effects of thermal metamorphism. Dynamic metamorphism that is genetically related to the granitic intrusions has modified them locally. The structure around the intrusives is complicated by folding, faulting, and shearing.

Pliocene, Pleistocene, and Recent

The alluvial deposits in this area are mainly of Recent age although Pliocene and Pleistocene ages are not differentiated. These deposits, consisting of gravel, sand, silt, and muck, are limited to the valley floors of the major streams and to the valley floors in the lower reaches of the minor streams. Nearly all of the alluvial deposits in the minor valleys and in the upper parts of the major valleys are gravel, sand, and silt. Permafrost appears to be present throughout nearly all of these deposits.

Igneous rocks

Upper Devonian

The Upper Devonian rocks that form the ridge on the south side of the West Fork of the Tolovana River are greenstones, chiefly altered diabase and diorite. These intrusives appear to be the source of chromite and chromiferous minerals in this area. A trace of nickel and a small platinum nugget have been found in adjacent areas.

Middle (?) Tertiary

A Middle (?) Tertiary quartz monzonite boss forms the central core of Sawtooth Mountains. The rock is light to dark gray, medium to very coarsely crystalline, and is commonly porphyritic, especially near the margins and in dikes. The feldspar phenocrysts range from 3 mm. to 5 cm. or more in long dimension, and a few as long as 12 cm. were observed. Feldspar, pyroxene, and biotite are the most abundant constituents of the rock. Finely crystalline to aphanitic dike rocks are present and tend to be differentiated into acidic

and basic fractions. Similar quartz monzonite intrusives form the prominent Roughtop, Elephant, and Wolverine Mountains which lie 7 to 14 miles southwest of Sawtooth Mountains.

Sawtooth Mountains antimony mine

The antimony mine is located close to the top of Sawtooth Mountains on the southeast side at the head of Chocolate Creek on lode claim Sawtooth No. 1. The stibnite ore body is localized along the contact between the quartz monzonite and the meta-sediments of the non-calcareous rocks formation. The strike of the contact and ore body is about N50-55°E., and the dip is vertical to 80° south.

At the time of the writer's examination the shaft had been sunk vertically to a depth of 32 feet and was accessible to a depth of about 30 feet. During the two months of inactivity preceding this, water, apparently from surface runoff, had filled the shaft to within 8 feet of the surface. This water was pumped out in two hours with an Ingersoll Rand, Model 35 pump. The walls of the shaft are timbered to a depth of 7 feet and below this are coated with ice varying from 1 to 8 inches in thickness, making detailed examination of the walls impossible. The ice was chopped away at a number of points in order to make representative observations and to take samples.

The mine shaft is 4x7 feet at the headframe and is sunk on the high grade ore. The mined ore body is hourglass shaped in cross section, and the shaft varies from 6 to 10 feet in width. The mined ore body is elongated along the strike, and the shaft varies from 7 to 9½ feet in length. The ore seems to have been extracted to the limit of minable ore on the southeast and northeast sides of the shaft. At the bottom of the shaft ore of at least fair grade seems to continue into the northwest and southwest walls. Sparks reports that test

holes drilled into the northwest wall indicated that about five feet more of milling grade ore is present in this direction. High grade ore is present in the bottom of the shaft.

The details of the mine and the geology are shown in figures 2, 3 and 4.

A number of ore samples and specimens that vary considerably in antimony content have been collected from this property. A sample from the surface (42AMt-295) was given to J. B. Mertie, Jr., in 1942 by Fred Wackwitz. It contained 63.87% Sb_2O_3 and 23.85% S. Leo Mark Anthony reported that an assay on the first 43 tons of ore that he sold through Alamco to Goldsmith Bros. showed 50.81% Sb.

The following confidential assay reports have been obtained from the Territorial Department of Mines' Fairbanks office. The samples were collected by the operators and prospectors, and it is not known how adequate and representative the sampling has been. Thus these percentages should be evaluated accordingly.

Howard Sparks' samples, 1951:

1-Average of grab samples from 90 (?) tons of ore mined by Anthony and Wollan . . . . . 42.77% Sb.

2-High grade ore after mining was resumed in April 1951 . . . . . 39.89% Sb.

3-Low grade ore after mining was resumed in April 1951 . . . . . 15.92% Sb.

Leo Mark Anthony's samples, 1948:

1-Ore dump #1 . . . . . 49.12% Sb.

2-Ore dump #2 . . . . . 37.26% Sb.

3-Ore dump #3 . . . . . 51.13% Sb.

The writer collected a composite grab sample (51ACh-210) at intervals of 1½ to 2 feet around the walls of the mine shaft at a depth of 27 feet. The assay of this sample, made by the Territorial Department of Mines, shows 26.88% Sb and 3.69% As. The gangue material is mainly silica. The relatively

low antimony content of this sample is to be expected, as the high grade ore at this level has been mined out and also some nearly barren wall rock, which could be avoided in mining, was included. Data on the arsenic content of the other samples are not available, but traces of arsenopyrite and an arsenic bearing mineral similar to olivenite have been noted in the field.

Mark Anthony reports that his samples collected during the mining of the ore to a depth of 12 to 15 feet indicate that the percentage of antimony increased toward the southwestern part of the ore body. Samples that assayed as high as 55% Sb. were obtained from this part of the ore. He also found that the arsenic content decreased to a trace toward the southwest.

The following spectrographic qualitative analysis of a sample of the high grade ore collected from the bottom of the shaft by Mark Anthony in late July 1951 has been furnished by him. The analysis was made by the John Herman Laboratory, Los Angeles, California.

	Element	Estimated Quantity
"Anthony #2"	Antimony	Main Constituent
	Silicon	10%
	Aluminum	1% - 10%
	Arsenic	1%
	Potassium	1%
	Iron	0.1% - 1%
	Vanadium	0.1% - 1%
	Magnesium	0.1% - 1%
	Titanium	0.1%
	Calcium	0.01% - 0.1%
	Lead	0.01% - 0.1%
	Zinc	0.01% - 0.1%
	Sodium	0.01%
	Copper	0.01%
	Barium	0.01%
	Nickel	0.001% - 0.01%
	Chromium	0.001% - 0.01%
	Boron	0.001% - 0.01%
	Molybdenum	0.001%

Element	Estimated Quantity
Cobalt	Trace
Silver	Present

Estimated quantities to the nearest factor of ten

On the basis of the exposed mineralized zones, it is impossible to predict the extent of the ore body or to calculate any indicated or inferred ore. This deposit, like most other stibnite deposits, is irregular and probably pod-like and some exploratory drilling and trenching are necessary in order to determine the vertical and lateral extent of the ore body. In vertical section, judging from the shaft dimensions, the rich ore narrowed to less than 6 feet at a depth of 16 to 22 feet, and is as much as 10 feet wide at a depth of 22 to 31 feet. In horizontal section along the strike, the ore grades to country rock in the northeast direction, and the southwest extent is complicated by a possible fault zone. A deeply weathered zone of quartz veinlets and gouge clay, 1 to 2 feet wide, that trends about N.60°E. was observed on the surface a few feet southwest of the shaft. No positive evidence of movement along this plane was seen, but the shattered and altered rock within the zone is suggestive of at least a small amount of movement. A clayey gouge zone striking approximately N.30°E. was noted at several places in the northeast wall of the shaft.

Mark Anthony reports that a bluish green gouge clay zone, estimated to be 1 to 2 feet thick, was encountered down to a depth of about 15 feet on the northwest wall of the mine shaft. A sample of this clay assayed 10% As, 2-3% Sb, and 1.5 oz/ton Au. Another zone, 1 to 2 feet thick, of clay and large bluish lumps of stibnite lay adjacent to the southeast side of the bluish green gouge clay zone. An assay of this material showed 52% Sb, 2% As, and 2-2.5 oz/ton Au. He also reports that there was a small horse in the ore near these clay zones.

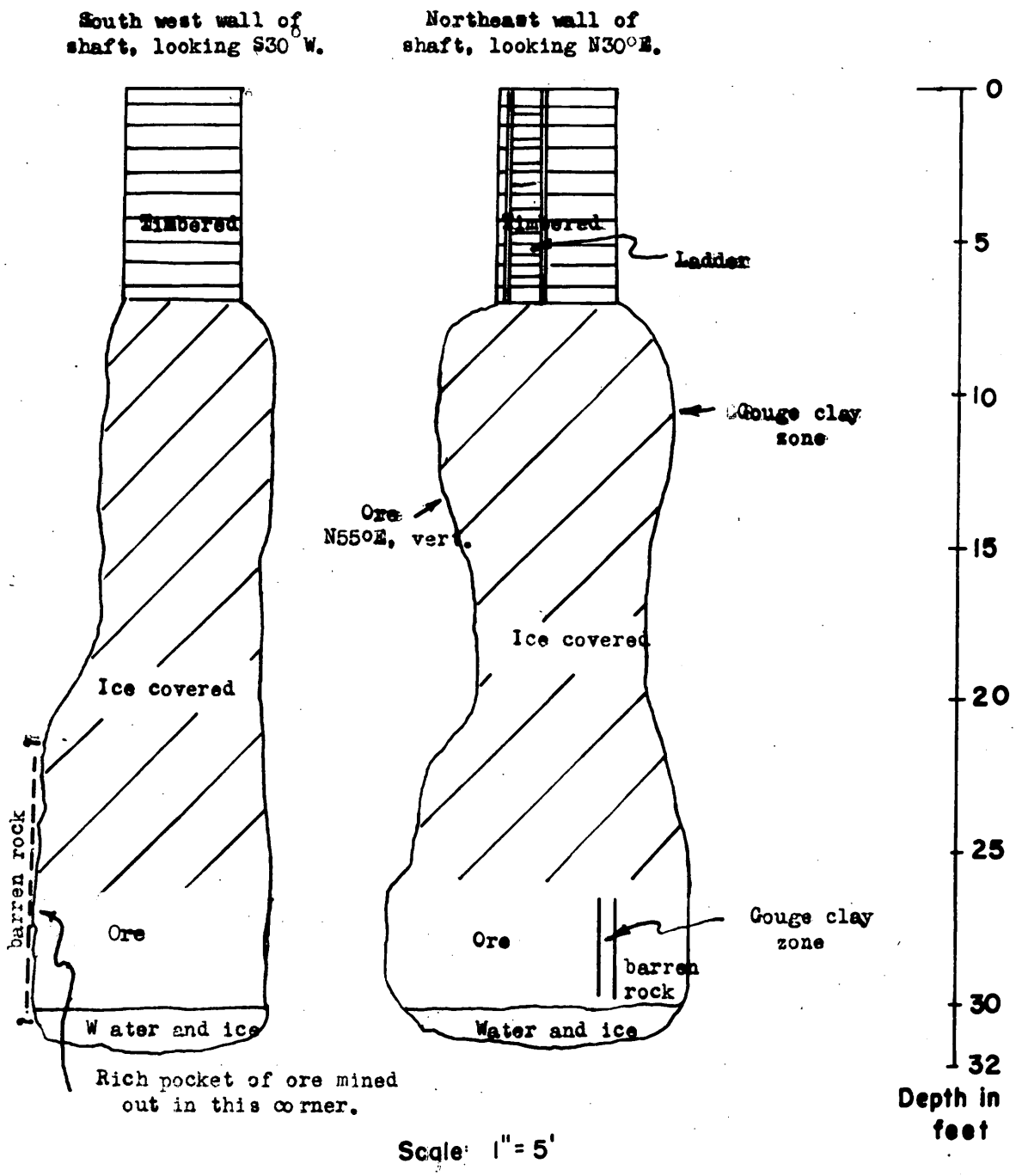
Another ore shoot about 6 feet from the southwest corner of the headframe has been mined to a depth of about 4 feet. It was subsequently covered with waste and could not be examined. Mark Anthony reports that this shoot was about 2x4 feet and appeared to terminate on the eastern side against a slickensided surface. The operators propose to drift into this ore shoot from the shaft.

The influence of these possible fault zones on the ore body and the magnitude of movement along them could not be determined.

Mark Anthony, Wollan, Wackwitz, and the Geological Survey party have examined the mountaintop in the vicinity of the mine and found a number of occurrences of stibnite mineralized float either on the surface or down to a depth of 2 to 3 feet. Those noted by the Geological Survey party are shown on figure 5. These shows of stibnite are aligned roughly on the strike of the ore body in the mine shaft and do not follow the contact of the quartz monzonite and the sedimentary formation. Apparently the ore is localized along zones of fracturing and/or faulting and not exclusively along the igneous-sedimentary contact zone.

Wackwitz reports that he found a gold prospect in the three pits that he dug on Ptarmigan No. 1 claim about 3/4 mile southwest of the mine. Wackwitz also reports that he found a small mineralized zone on the ridge top north of the West Fork of the Tolovana River and approximately 3 to 4 miles west of Lost Creek. His assay of a sample from this zone showed a lead content. He has not been able to locate the place since, and a brief, unsuccessful search was made for it by the Geological Survey party.

At the time of the writer's visit two buildings were on the property. One, a frame wanigan 11x13 feet, served as bunkhouse and cookhouse, and the other, a frame building, 10x18 feet, housed the compressor motor and hoisting



SKETCHES SHOWING NORTHEAST AND SOUTHWEST WALLS OF THE SAWTOOTH MOUNTAINS MINE

FIGURE 2

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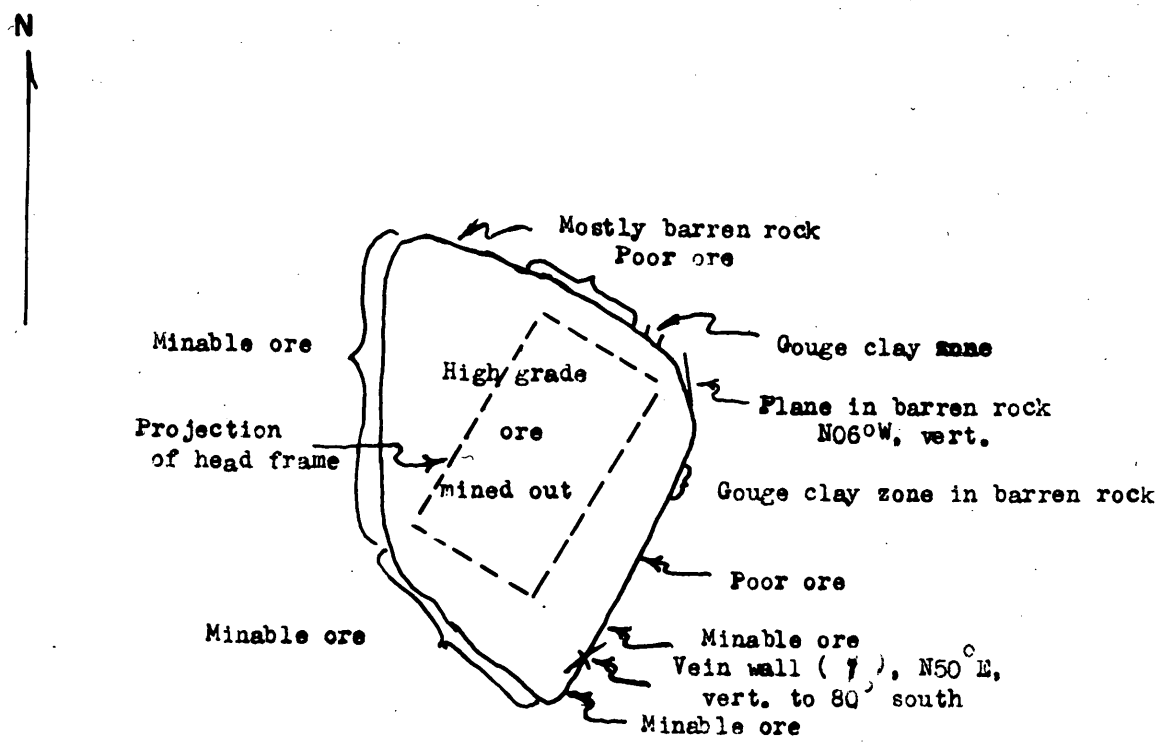
Fairbanks, Alaska

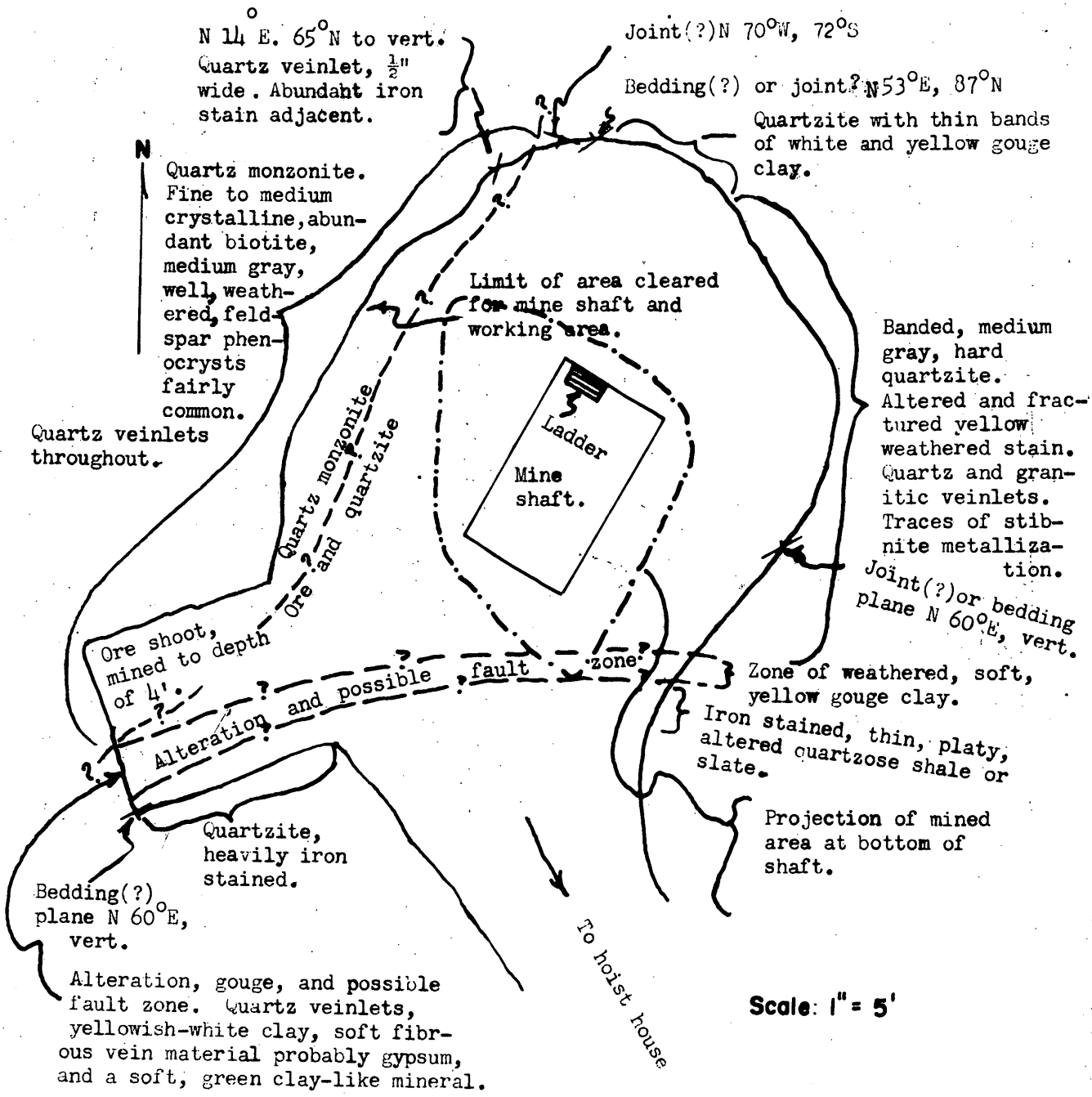


Scale: 1" = 5'

PLAN VIEW OF BOTTOM OF SAWTOOTH
MOUNTAINS MINE SHAFT

FIGURE 3

AIR FORCE PHOTO
Released by Ladd AFB
Fairbanks, Alaska



PLAN VIEW OF SURFACE AREA AT SAWTOOTH MOUNTAINS MINE SHAFT

FIGURE 4

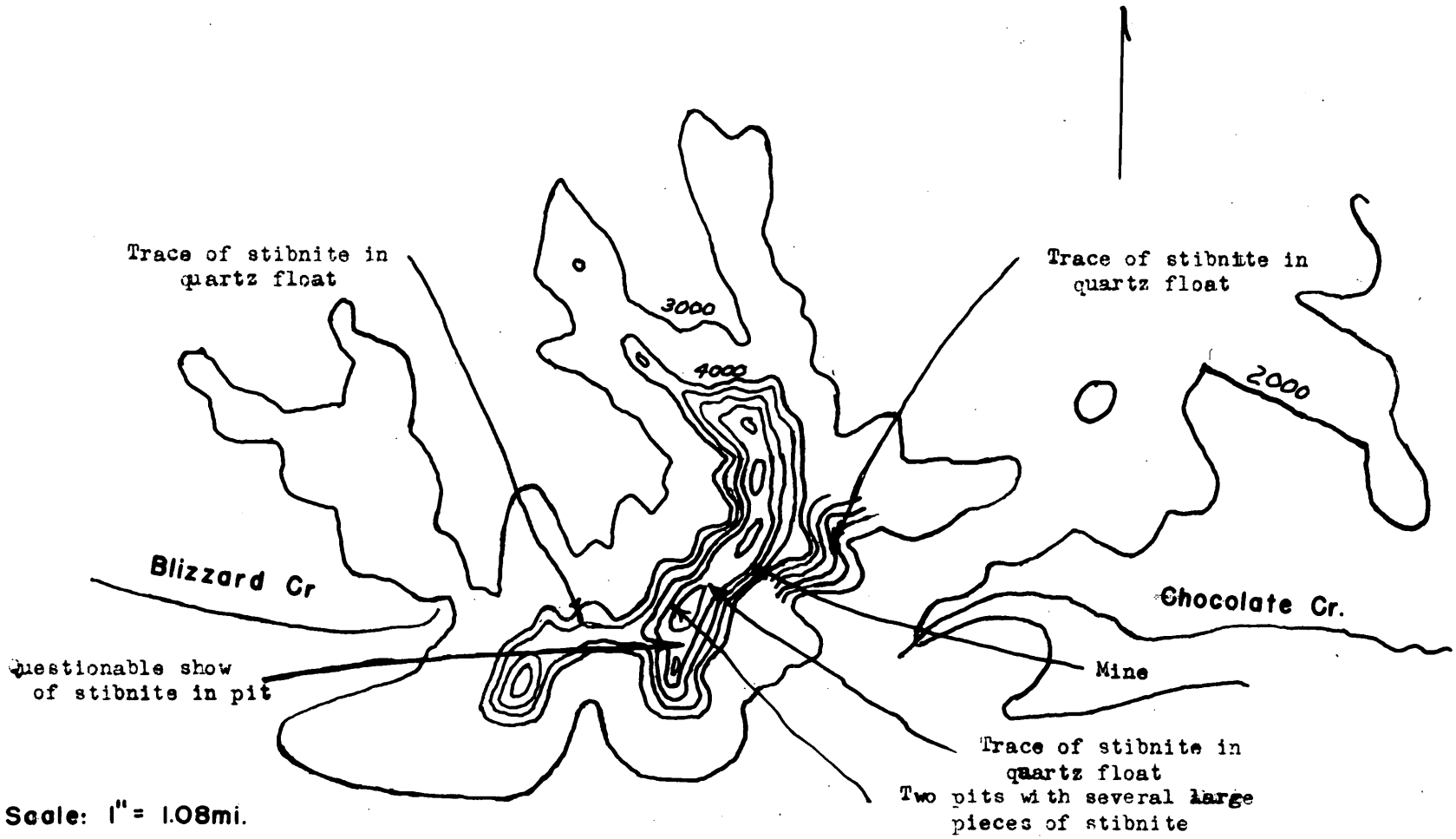
AIR FORCE PHOTO

Released by Ladd AFB

Fairbanks, Alaska

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS
ADMINISTRATION



MAP SHOWING STIBNITE OCCURRENCES ON SAWTOOTH MOUNTAIN

FIGURE 5

AIR FORCE PHOTO
Released by Ladd AFb
Fairbanks, Alaska

machinery. Only three men can be housed conveniently in these buildings.

Summary of ore extracted

It has not been possible to secure exact figures on the weight of ore extracted from the mine so far. In most cases the reported figures were given in round numbers. The following figures, however, are close approximations.

About 110 tons mined by Mark Anthony and Wollan in 1948. Sparks shipped about 80 tons of this in 1951. The remaining 30 tons is in an ore dump, which assayed 40% Sb according to Sparks and 32% Sb according to Mark Anthony.

About 20 tons mined and shipped by Sparks in 1951.

About 66 tons mined and ready to ship in 50 gal. oil drums in 1951. 138 barrels, estimated to contain 950 lbs. of ore per barrel, were ready to ship at the time of the writer's visit.

About 50 tons (guess) contained in an ore dump, mined in 1951. Estimated to be 45% Sb.

About 246 tons total.

Appraisal and recommendations

On the basis of present information the Sawtooth Mountains property certainly can not be condemned as a mining venture. Neither, however, can it be endorsed for a large expenditure of money for development or access roads until further exploration to determine the lateral and vertical extent of the known ore body has been done.

The following exploration is suggested to aid in delimiting the stibnite deposit:

1 - Vertical drilling from the bottom of the shaft to determine the depth of metallization.

2 - Lateral drilling from the mine shaft to determine the extent of the lower grade millable ore.

3 - Bulldozer trenching on the stibnite float area at the head of Buckeye Creek and at appropriate intervals between this area and the mine to cross cut a possible continuation of the ore in this covered interval. This area is a nearly level meadow with a thin frozen mantle of cover overlying the bedrock.

Drainage of surface or underground water from the mine would not be a problem. At present occasional pumping of the surface run-in is all that is necessary, but if large quantities of underground water are encountered, a hole could be drilled out from the southwest wall of the shaft to drain the water into the valley of Chocolate Creek. A horizontal hole about 65 to 75 feet long would reach from the 32 foot level of the shaft to the surface.

An improved tractor trail from the mine to an airfield site is necesary if further mining and development are done. The only practical route is the one heading southwest from the mine and down Buckeye Creek. This proved satisfactory during the winter season when considerable snow filled the sharp, rocky headwater portion of the valley and covered the large talus blocks. A passable summer trail can be made of this route after some bulldozer work to level the trail and clear the boulders. Some difficulty will be encountered due to the grade in the upper part of Buckeye Creek. The extreme head of the valley has a 20% grade, and a little farther down for several hundred yards the grade is as much as 27%.

The proposed airfield site is in a favorable location on a broad, nearly level area near the base of Sawtooth Mountains at the southwestern side between Buckeye and Gassam Creeks. Good air approaches can be made in this area, and a strip of suitable length and width for large multi-motor

aircraft can be made. Presumably solid ground, either gravel or bedrock, could be reached at shallow depth in this location. The altitude of this site is approximately 2400 to 2600 feet, and therefore an airstrip should be approximately 5000 feet long (nearly 1000 feet longer than at sea level) to allow a C-46 or C-47 aircraft to take off with a capacity load. Since the writer's visit an airstrip, approximately 1400 feet long, has been stripped in this area. It is reported that the unfrozen surface vegetation and muck have been removed to a depth of about one foot exposing frozen muck. In mid-August the strip was still too wet and soft for use. The exact location and orientation of the strip are not known.

The tractor trail that is already established from Livengood to Sawtooth Mountains is satisfactory for winter use but it is too swampy in many places to be passable when the ground is thawed. The several river fords on this route would cause no trouble except during the highest water stages. A better route could be established on the ridge tops on the north side of the West Fork of the Tolovana River to connect with the established trail at Chocolate Creek. The chief obstacle in this route is the crossing of Lost Creek valley. Swampy ground would be encountered in the valley bottom, and grades are steep on parts of the slopes on either side. Some road construction would be necessary to make this part of the trail usable for hauling by tractor train. Since the writer's visit a bulldozer has been taken to Sawtooth Mountains over this route, and it is reported that the crossing of Lost Creek valley was difficult and that some soft ground was encountered on the ridge top. Thus it is questionable whether this route will be feasible for hauling without improvements.

A road and/or airfield in this area would not only benefit the Sawtooth Mountains mine, but would also give easier access to several creeks

west and north of Sawtooth Mountains where small scale placer gold operations are in progress. At present these operations are accessible from Rampart during the summer only by foot trails. The proposed highway route from Livengood to Eureka has been surveyed and is shown on plate 1. The Alaska Road Commission does not know when funds will be made available for construction of this road. Even if it is built it would be of little value to the Sawtooth Mountains area, as it would be nearly 12 miles (airline) distant from the mine at the closest point.

View southwest up West Fork of the Tolovana River showing tractor trail. Sawtooth Mountains in the center distance.

Looking north from tractor trail to ridge on north side of West Fork of the Tolovana River about four miles west of Lost Creek.

View northeast toward mine on top of Sawtooth Mountains

Sawtooth Mountains mine, hoist house, and a part of the mined ore in drums.

Ore dump, estimated to contain 50 tons of high grade ore.

Looking south down Buckeye Creek from top of Sawtooth Mountains showing tractor trail route. Airfield site on level area at the lower end of valley.

View south down Left Fork of Buckeye Creek showing tractor trails.

Form MF-103
(May 1951)

Bouker

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA 1035

Date received MS-0872

Alamco, Incorporated
Box 1774
Fairbanks, Alaska

35565

Name and address of applicant

Date June 15, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced: Antimony Ore.
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point. (1)Near Sawtooth Mts. (2)Near Tok River
   (*b*) Mining district. Alaska
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production Just started in 1951

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	Antimony ore	----	-----	Approx. 200 tons	Over 100 tons
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)	Assaying between 35% and 55% Sb content.				

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(*a*) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, ~~crackers, millmen, etc.~~) of men employed during a recent representative payroll period.
Approximately 10 to 12 miners and engineers.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

ALAMCO, INCORPORATED
(Name of company)

By Marc S. Goldsmith
(Signature of authorized official)

JUNE 15, 1951
(Date)

Marc S. Goldsmith
Vice President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Form MF-100
(May 1951)

U.S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA-1035

Date received MS-0872

Alamco, Incorporated
Box 1774
Fairbanks, Alaska

35565

Name and address of applicant

Date June 15, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced: Antimony Ore.
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).
   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point. (1)Near Sawtooth Mts. (2)Near Tok River
   (*b*) Mining district. Alaska
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production Just started in 1951.
   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

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For Corporate Applicants

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Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

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1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	Antimony ore	-----	-----	Approx. 200 tons	Over 100 tons
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)	Assaying between 35% and 55% Sb content.				

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves;

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes ~~(miners, muckers, millmen, etc.)~~ of men employed during a recent representative payroll period.

Approximately 10 to 12 miners and engineers.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

ALAMCO, INCORPORATED
(Name of company)

By Marc S. Goldsmith
(Signature of authorized official)

JUNE 15, 1951
(Date)

Marc S. Goldsmith,
Vice President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

FILE COPY
SURNAME:

Bourret

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

AIR MAIL

May 15, 1951

Mr. Howard Sparks, President
Alamco, Incorporated
P. O. Box 17774
Fairbanks, Alaska

Re: Antimony Tok River Region
DMA docket - 1035x

Dear Mr. Sparks:

With further reference to our letter of April 27, concerning the execution of form MF-103, I wish to advise that Mr. Mark S. Goldsmith called at this office recently. We pointed out to Mr. Goldsmith that the process of reviewing his application might be simpler at such a distance if you would submit the forms directly to Mr. S. H. Lorain, DMA Executive Officer in Juneau, Alaska.

We also explained to Mr. Goldsmith that from the point of view of the examining engineer, the most significant information required at this time was as detailed an explanation as possible to questions No. 21 and 22 of form MF-103 including supporting maps and plan of your proposed work.

Yours very truly,

Weston Bourret
M. H.

Weston Bourret
Acting Chief
Minor and Rare Metals

WBourret/mh
cc: Adm. Reading File
Strobel
McKnight, USGS
Ruhlman
Bourret
Files
Field Team, I
Mr. Goldsmith

Dunn 1035

856

FILE COPY
SURNAME:

Bourret

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

AIR MAIL

April 27, 1951

Mr. Howard Sparks, President
Alamco Inc.
P. O. Box 1774
Fairbanks, Alaska

Re: Antimony-Tok River Region
DMA docket - 1035

Dear Mr. Sparks:

Several days ago Mr. Marc S. Goldsmith called at this office regarding government assistance for exploration projects.

At Mr. Goldsmith's request we are enclosing herewith five copies of form MF-103. Detailed instructions for completing these forms are contained in MO-5, which is also attached. Will you kindly complete the forms in quadriplicate and return to this office, retaining one copy for your file. Should you require further help or assistance, please apply to the Defense Minerals Administration field office, Federal Building, P. O. Box 2990, Juneau, Alaska.

Very truly yours,

Weston Bourret
Acting Chief,
Minor and Rare Metals Branch

Enclosures

WBourret/mh
cc: Adm. Reading File
Mr. Strobel
Mr. Mittendorf
A. S. Kemp
Field Team I
Mr. Bourret
F i l e s

Defense Minerals Administration
Reference Slip

Date 4/23/51

To: 1. Mr. Bossert

2.

3.

4.

DMA 1035

For Action ✓
Reply
Information
Remarks:

Sender Strobel (WD)

3
Mr. Strobel DMA

Forwarded to

Branch

Date

Sender

2
Mr. Strobel DMA

Forwarded to

Branch

Date

Sender

1
Mr. Strobel DMA

Forwarded to

Branch

Date

Sender

92758

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1035 X

Date received 4-18-51

Participation

Alamco, Inc.
P.O. Box 1774
Fairbanks, Alaska
Att – Mr. Howard Sparks, Pres.

Name and address of applicant

Date Mar. 16, 1951 *

FILL IN THIS BLOCK

Date of application Mar. 16, 1951 *

Estimated cost

Mineral or metal Antimony

Percentage of Government participation 75%

Location of mine Jok River region – Refer Page 30-35 R.I. 4173 – Jan. 1948 by Norman Ebbley Jr. + Wilford S. Wright Bureau of Mines
Approx. Longitude 143° 48' W, Latitude 63° 15' N.

Date of filing MF-100

DMA Docket Number, if available dma 1035 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT — Marc S. Goldsmith 4/17/51

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

* Refers to meeting of Mr. Arnold S. Kemp, Mr. Killeen, Mr. Gates and Mr. Parsons with Marc S. Goldsmith, Vice Pres. of Alamco, Inc. – when original request for Exploratory aid was made.

MF-200
(April 1951)

Docket No. DMA[1] _____

Commodity _____

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

It is agreed this _____ day of _____, 195___, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and[2] _____

_____

_____

_____

_____

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of _____, County of _____ described as follows:[3] _____

_____

_____

_____

with respect to which the Operator represents and undertakes:[4]

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: _____

_____

_____

_____

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within _____ days from the date of this contract shall commence work on a project of exploration for[5] _____; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of[6] _____ from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Attached hereto, marked "Exhibit 'B'," is a detailed list of additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute its agreed pro-rata share of the cost. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

6. *Operating equipment.* Attached hereto, marked "Exhibit 'C'," is a detailed list of operating equipment divided into categories of items to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or rental value, as the case may be, annexed to each. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

TITLE 32A—NATIONAL DEFENSE, APPENDIX

Chapter XII—Defense Minerals Administration, Department of the Interior

[MO-5]

MO-5—Regulations Governing Government Aid in Defense Exploration Projects

This regulation is found to be necessary and appropriate to carry out the provisions of the Defense Production Act of 1950 with reference to the encouragement of exploration, development, and mining of critical and strategic minerals and metals pursuant to section 303 (a) (2) of the act. In the formulation of this regulation there has been consultation with industry representatives, including trade association representatives, and consideration has been given to their recommendations.

EXPLANATORY PROVISIONS

Sec.
1. What this regulation does.
2. Government aid.

APPLICATIONS AND CONTRACTS

3. Forms and filing.
4. Scope of application.
5. Action on applications.
6. Form and term of contracts.
7. Criteria.
8. Definitions.

GOVERNMENT PARTICIPATION

9. Ratio of contributions.
10. Fixtures and improvements.
11. Operating equipment.
12. Title to and disposition of property.
13. Allowable costs of the project.
14. Repayment by Operator.

Authority: Sections 1 to 14 issued under sec. 704, Pub. Law 774, 81st Cong.; E. O. 10161, Sept. 9, 1950, 15 F. R. 6105; E. O. 10200, Jan. 3, 1951, 16 F. R. 61; Order of the Secretary of the Interior No. 2605, Dec. 4, 1950, as amended; delegation of the Defense Production Administrator to the Secretary of the Interior, Feb. 28, 1951. Interpret or apply sec. 303 (a) (2), Pub. Law 774, 81st Cong.

EXPLANATORY PROVISIONS

Section 1. *What this regulation does.* This regulation sets forth procedures under which Government aid may be obtained in financing the cost of projects for exploration for unknown or undeveloped sources of strategic or critical metals and minerals.

Sec. 2. *Government aid.* The Government, in suitable cases, will aid in an exploration project for strategic or critical metals and minerals by providing some part of the costs of the project, the Government's contribution to be repayable from the net returns from any ore, concentrates, or metal produced as a result of the exploration project.

APPLICATIONS AND CONTRACTS

Sec. 3. *Forms and filing.* Application for Government aid in any specified exploration project shall be submitted in quadruplicate on Form No. MF-103, either to

The Defense Minerals Administration,
Department of the Interior,
Washington 25, D. C.

or to the nearest Defense Minerals Administration field executive officer as indicated by the following addresses:

Region	Area served	Address
I	Alaska	Federal Bldg., P. O. Box 2990, Juneau, Alaska.
II	Washington, Oregon, Idaho, and Montana.	South 157 Howard St., Spokane, Wash.
III	California and Nevada	1415 Appraisers Bldg., San Francisco, Calif.
IV	Arizona, New Mexico, Colorado, Utah, and Wyoming.	224 New Customhouse Bldg., Denver 2, Colo.
V	North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, and Michigan.	426 Plymouth Bldg., Minneapolis, Minn.
VI	Kansas, Louisiana, Oklahoma, Texas, Arkansas, and Missouri.	P. O. Box 431, Joplin, Mo.
VII	Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi.	Room 13, Post Office Bldg., Knoxville, Tenn.
VIII	Illinois, Indiana, Ohio, Kentucky, Virginia, West Virginia, Maryland, New York, Vermont, Maine, New Hampshire, Connecticut, Rhode Island, New Jersey, Delaware, and Pennsylvania.	Eastern Experiment Station, College Park, Md.

Applications filed prior to the effective date of this regulation, if sufficient, will be treated as though filed on the prescribed form. Applications must be filed at least 30 days prior to the expiration of the authority granted by the Defense Production Act of 1950, which at the time of issuing these regulations, is June 30, 1951.

Sec. 4. *Scope of application.* Each application shall relate to a single exploration project which shall be fully described and justified by detailed substantiating data as called for by the application form. The Administrator may require the filing of additional information, reports, and exhibits, in connection with the application, and may, at his discretion, require such physical examination of the project as he deems necessary.

Sec. 5. *Action on applications.* The Administrator, after considering the application and all matters relating thereto, shall either approve or disapprove the application. If the Administrator approves the application, he shall certify it as presenting a suitable project for an exploration project contract.

Sec. 6. *Form and term of contracts.* If the application is approved and certified for a contract, the Government, acting through the Administrator, will enter into an exploration project contract with the applicant on Form MF-200. No exploration project that will take more than two years to perform shall be approved for an exploration project contract.

Sec. 7. *Criteria.* The following factors will be considered and weighed in passing upon applications:

(a) Strategic importance of the mineral involved.

(b) The geologic probability of making a significant discovery.

(c) The availability of manpower.

(d) The availability of equipment and supplies.

(e) The accessibility of the project.

(f) The availability of water and power.

(g) The operating experience and background of the applicant.

Sec. 8. *Definitions.* As used in these regulations:

(a) "Exploration project" means the search for unknown or undeveloped sources of strategic or critical metals or minerals within a specified area or parcel of ground in the United States, its territories or possessions, whether conducted from the surface or underground, including recognized and sound procedures for obtaining pertinent geological, geophysical, and geochemical information. The work shall not go beyond a reasonable delineation and sampling of the ore, and shall not include work prosecuted primarily for mining or preparation for mining.

(b) "Operator" means a person, firm, partnership, corporation, association, or other legal entity by whom or for whose account and interest an exploration project is to be carried out.

(c) "Administrator" means the Administrator of Defense Minerals Administration or his representative authorized in writing.

(d) "Government" means The United States of America.

GOVERNMENT PARTICIPATION

Sec. 9. *Ratio of contributions.* The Government will contribute to the exploration project, upon the terms specified in the contract, a certain percentage of the total cost of the project, depending upon the mineral which is the subject of exploration, as follows:

(a) In the case of chromium, copper, fluorspar, graphite (crucible flake), iron ore, lead, molybdenum, sulfur, and zinc (and cadmium)—50 percent.

(b) In the case of antimony, manganese, mercury, tungsten—75 percent.

(c) In the case of asbestos (spinning grade), beryl, cobalt, columbium-tantalum, corundum, cryolite, industrial diamonds, kyanite (strategic), mica (strategic), monazite, uranium, and rare earth ores, nickel, platinum group metals, quartz crystals (piezo-electric), talc (steatite), and tin—90 percent.

SEC. 10. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. With the written approval in advance by the Administrator, necessary additional facilities, buildings, and fixtures may be purchased, installed and erected by the Operator, and the Government will contribute its agreed pro-rata share of the cost thereof. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

SEC. 11. *Operating equipment.* With the written approval in advance by the Administrator, necessary operating equipment may be rented, purchased, or otherwise furnished by the Operator. Rentals paid for equipment rented and the rental value of equipment owned and furnished by the Operator shall be allowed as costs of the project. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

SEC. 12. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

SEC. 13. *Allowable costs of the project.* The allowable costs of the project in which the Government will participate shall include the following:

(a) The necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, labor, direct supervision, engineering, power, water, and utilities.

(b) The reasonable, necessary cost of rehabilitating and putting into useful and operable condition existing facilities, buildings, installations, and fixtures, and of maintaining them in that condition.

(c) If the purchase, installation, or erection was approved in advance by the Administrator, as provided in section 10 of this regulation, the depreciation on fixtures and improvements computed as provided in section 10 of this regulation.

(d) If the rental or purchase of operating equipment was approved in advance by the Administrator, as provided in section 11, of this regulation, the rental, rental value, or depreciation, on operating equipment, computed as provided in section 11 of this regulation.

No items of general overhead, corporate management, interest, or any other indirect costs not expressly allowed by these regulations, or work performed or costs incurred before the date of the contract, shall be allowed as costs of the project in which the Government will participate.

SEC. 14. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, Administrator considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Administrator, within six months thereafter shall so certify to the Operator, particularly describing and delimiting his estimate of the discovery of the development. Thereafter, if and when ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said ten years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: one and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: one and one-half (1½) percent, plus one-half (½) percent additional for each full fifty cents ($.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the property which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said ten-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This section is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

This regulation shall become effective upon publication in the FEDERAL REGISTER.

JAMES BOYD,
Administrator,
Defense Minerals Administration.

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

April 26, 1951

Mr. Howard Sparks, President
Alamco, Inc.
P. O. Box 1774
Fairbanks, Alaska

Subject: DMA-1035 X
Re: Loan
Gamblin Antimony Prospect

My dear Mr. Sparks:

Receipt is acknowledged of your application and attachments of March 16 from the ALAMCO, INC. for a Government loan under the Defense Production Act of 1950.

The application was assigned Docket Number 1035 X and referred to Mr. Weston G. Bourret, Acting Chief, Minor and Rare Metals Branch, on April 23.

In any future correspondence relating to your application, kindly refer to DMA-1035 X.

Sincerely yours,

a.e.c.

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:aec
copies to Strobel-2
Files
Mr. Bourret
Mr. Lyon

April 26, 1951

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Mr. Bourret
Mr. Lyon

dma 10.3

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

April 18, 1951

MEMORANDUM

TO: Mr. L. F. Strobel

FROM: Weston Bourret

Subject: Gamblin Antimony Prospect, Fairbanks, Alaska

Alaska

The attached application was delivered by hand to the Supply Division yesterday without reference to your office.

Mr. M. S. Goldsmith of Chicago, Illinois, completed the application forms in order to learn if he could be given a docket number on the basis of his meeting with A. S. Kemp, et al, on March 16, 1951.

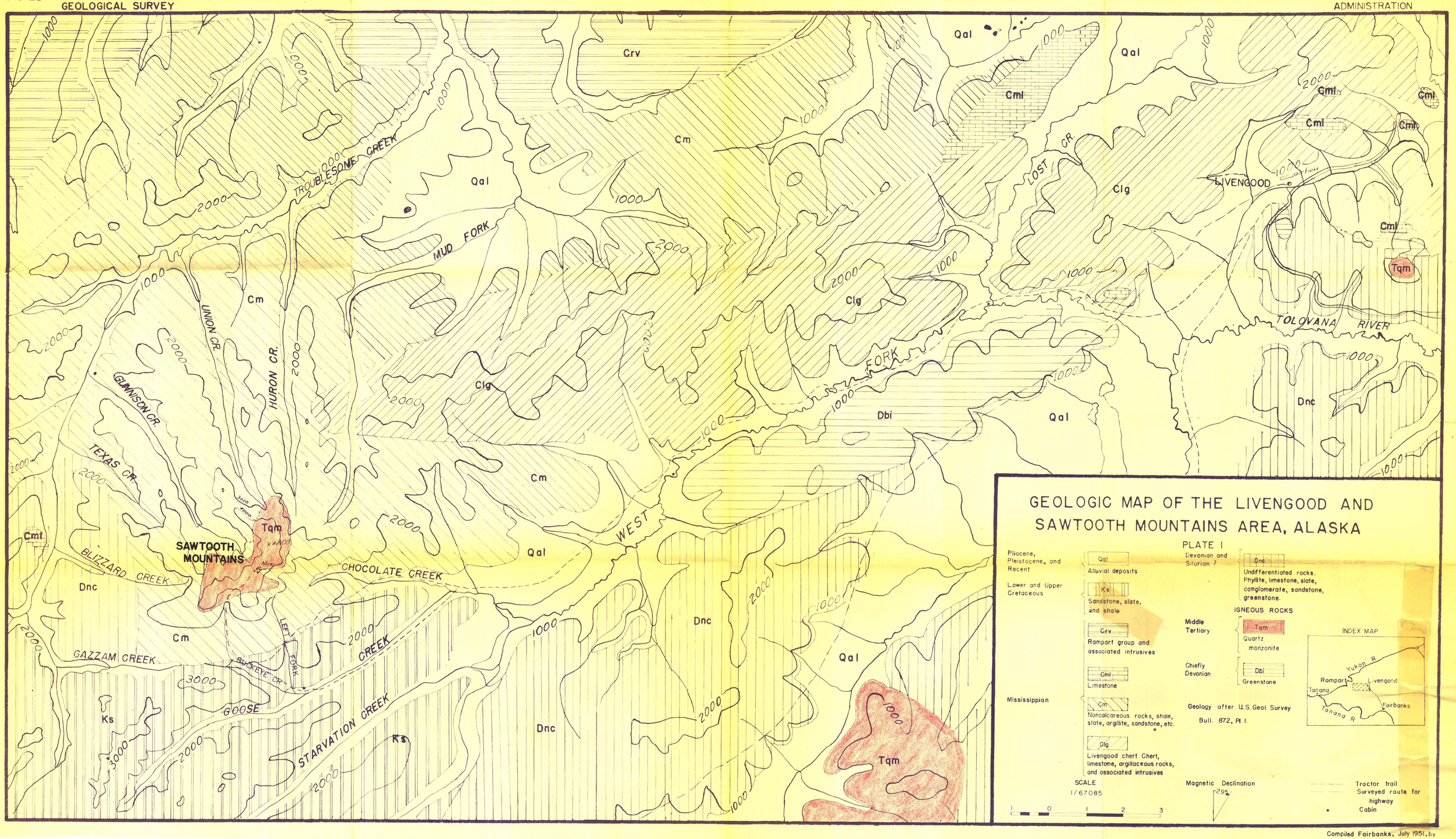
Weston Bourret
Weston Bourret

Attachment

Received 4/20/51.
To Mr. Bourret 4/23/51.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS
ADMINISTRATION



Compiled Fairbanks, July 1951, by
Robert M. Chapman