4-17-53 DMEA-2717
no. 204 Mica, Beryl F
Region III

TAGLO MINING CORPORATION, OVERTON, NEVADA. Santa Cruz Mine, Clark County, Nevada.

Letter to the applicant denying the application.

Field Reports

FIELD REPORTS

F

no. 187 DMEA-2717
Mica, Beryl
4-1-53 Region III

TAGLO MINING CORPORATION, OVERTON, NEVADA. Santa Cruz Mine, Clark County, Nevada.

Field Report recommending denial. The report was referred to the Liability Group.

April 16, 1953

Memorandum

To: Administrator

From: Nonmetallic Minerals Division

Subject: Closing Review of Docket No. DMEA-2717 - Mica-Beryl
Applicant: Taglo Mining Corporation
Overton, Nevada
Property: Santa Cruz Mine
Clark County, Nevada
Amount applied for: $50,000.00

Closing letter: Denial of application attached.

Docket Summary:

9/25/52	Application received. Proposes an ambitious program including drifts, trenches, metallurgical tests, and mill design to be done at a cost of $50,000.00.
10/7/52	Memo from W. F. Dietrich, USBM - Mica.
10/10/52	Memo from A. J. Kauffman, Jr., USBM - Beryl.
10/14/52	Memo from R. E. Van Alstine, USGS.
10/21/52	Referred to Region III for field examination and report.
10/31/52	Letter from Edmund G. Brown, Attorney General, State of California, requests expediting.
11/12/52	Letter to Brown giving status of case in Region III.
12/9/52	Received letter and preliminary report on application from Miller, Region III. He requests opinion of Bureau and Survey before making the requested field examination. The preliminary report by E. T. Schenck supplies data of sufficient interest to warrant a field examination.
12/29/52	Region III requests Schenck to forward one-half of his samples to G.S.A. Purchase Depot at Custer, South Dakota.
1/7/53	Memo - USGS recommends re-referral to field.
1/9/53	Memo - USBM recommends re-referral to field.
1/12/53	Samples forwarded to Custer, South Dakota, by Schenck.
1/21/53	Field examination again requested.
1/29/53	Telegram from applicant re status of application.
1/30/53	Reply telegram - re-examination has been requested.

2/10/53	Letter from G.S.A., Custer, South Dakota, mica not strategic samples contain beryl. The beryl crystals are high-grade.
3/23/53	Field report mailed by Region III. Recommends denial as mica is non-strategic and the beryl and chrysoberyl content is too low to encourage exploration.
4/3/53	Memo from USGS recommending denial.
4/9/53	Memo from USBM - Mica Section - recommending denial.
4/10/53	Memo from USBM - Beryl Section - recommending denial.
4/15/53	Denial letter and review prepared in the Division.

Resume: The data in the field report and the non-strategic quality of the mica indicate that exploration is not warranted. Applicant apparently believed that beryl is worth ten times its present price of approximately $500.00/ton. Without this misconception, the application would probably not have been filed.

In view of the unfavorable nature of the data in the field report, the Nonmetallic Minerals Division of DMEA recommends denial of this application.

Stanley A. Feitler
Nonmetallic Minerals Division

SAFeitler:gad 4/16/53
Copy to: Admr. R. File
Docket File
Mr. Houk

APR 17 1953

Dr. H. A. Tagliaferri, President
Taglo Mining Corporation
Overton, Nevada

Re: Docket No. DMEA-2717 - Mica-Beryl
Santa Cruz Mine
Clark County, Nevada

Dear Dr. Tagliaferri:

Your application for aid for an exploration project and other reports available to us in Washington relating to your mine have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting a small amount of marginal ore on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

SAFeitler:gad 4/16/53
Copy to: Admr. R. File
Docket File
Field Team, Region III
Operating Committee
Mr. Dietrich, 3526
Mr. Larrabee, G-232 GSA Bldg.
Mr. Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

April 10, 1953

Memorandum

To: L. G. Houk, Chief
Nonmetallics Division, MMA

From: Robert F. Griffith
Rare and Precious Metals Branch

Re: Mica-Beryl

Subject: Docket MMA-2717, Taylo Mining Corp., Overton, Nev., Santa Cruz Mine, Clark County, Nevada

In view of the adverse report submitted by the field team this office concurs with the recommendation that the application be denied.

Robert F. Griffith

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

April 9, 1953

Memorandum

To: Nonmetallic Minerals Division
Defense Minerals Exploration Administration

From: Chief, Ceramic and Fertilizer Materials Branch

Subject: DMEA-2717, Mica, Santa Cruz Mine, Clark County, Nevada

I concur in the field team's recommendation to deny subject application on the basis that no strategic mica is present at this mine.

W. F. Dietrich

IN REPLY REFER TO:

G-MD-CNM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

April 3, 1953

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-2717 (Mica-beryl)

To: L. G. Houk, Defense Minerals Exploration Administration
From: J. J. Norton, U. S. Geological Survey
Applicant: Taglo Mining Corp., Overton, Nevada.
Name of property: Santa Cruz.
Location of property: Clark County, Nevada.
Date of field team report: March 17, 1953.
Authorship of field team report: W. E. Hall and W. P. Irwin, U. S. Geological Survey.
Field team's recommendation: Denial.
Comments: The field examiners say that the mica is non-strategic and the beryl content is not more than a few pounds per ton.
ACTION SUGGESTED: Follow field team's recommendation.

J. J. Norton

Norton:jeh
G-2 4/3/53
cc: Director's reading 4212
Branch reading 4212
DMEA 3
Norton G-228

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

March 23, 1953

Memorandum

To: George G. Selfridge, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2717 (Mica-Beryl)
Tagle Mining Corporation, Overton, Nevada, Santa Cruz Mine, Clark County, Nevada

Reference is made to your letter, dated January 21, requesting a regular field examination of the subject property by a mining engineer and a geologist.

The property was examined on February 5 - 8, 1953, by W. E. Hall and W. P. Irwin, of the Geological Survey, and George H. Holmes, Jr., of the Bureau of Mines.

Attached are four copies of a report entitled "DMEA 2717, Tagle Mining Corporation, Santa Cruz Mine, Clark County, Nevada, (Mica-Beryl) by Wayne E. Hall and W. P. Irwin, Geologists, U. S. Geological Survey," dated March 17, 1953.

The examining geologists report the property contains narrow pegmatitic dikes that average 0.4 pounds of beryl per ton and less than 5 percent muscovite. Some pods of pegmatite contain a little more beryllium and 10 percent non-strategic mica, but these are small. The geologists recommend the applicant's request for a DMEA loan be denied because the mica is non-strategic and the quantity of beryllium-bearing minerals is far too small to be of economic interest. As both of the geologists who made the examination have had considerable experience in the evaluation of pegmatite deposits, Mr. Bailey and I believe their opinions can be relied upon.

As the geologists' recommendations were that the property did not warrant an exploration loan, no effort was made by Mr. Holmes

DMEA CLEARANCE
4-1-53
(Date)

to collect pertinent data and cost such as would be helpful to you if a contract were to be drawn.

H. C. MILLER

H. C. Miller
Executive Officer
DMA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

[illegible]

[illegible]
[illegible] III

[illegible] 2[illegible], [illegible] Mining Corp., [illegible] Creek [illegible]

[illegible] County, [illegible]
(Mica-Beryl)

[illegible]
[illegible] P. Irwin, Geologist
U. S. Geological Survey

March 17, 1953

Reviewed by
DEPA[illegible]
4-1-53
(Date)

Summary

The Santa Cruz mica-beryl prospect consists of three adits totaling about 500 feet in length, and several shallow open cuts scattered over three groups of claims for a length of about 2 miles along a zone of muscovite schist. Abundant bodies of pegmatitic rock occur in the schist, ranging from lenticular pods 25 feet long and 5 feet thick to dikes more than 350 feet long and 8 feet thick. Muscovite, beryl, and chrysoberyl occur in some of the pegmatite bodies. Chrysoberyl was seen only in the smaller pod-shaped bodies, and in general, muscovite and beryl are more abundant in the smaller pegmatitic bodies.

The grade of the most promising pegmatite bodies was determined by making mineral counts of the beryl and chrysoberyl in the area the owner proposes to explore. The pegmatite dikes contain an average of 0.4 pounds of beryl per ton, and less than 5 per cent muscovite, whereas the better of the shorter, pod-like bodies contain an average of 0.3 pounds of beryl per ton, 0.6 pounds of chrysoberyl per ton, and about 10 percent muscovite. It is possible that exposures of the smaller pod-like bodies may have contained three or four times as much beryl and chrysoberyl as the mineral counts indicate as they have been picked over by many mineral collectors. None of the muscovite is of strategic grade.

The total tonnage of pegmatite that contains beryllium minerals and muscovite is very large, although it is the sum of many discontinuous pegmatite bodies. No measurement of the total tonnage has been made, but it is likely to be on the order of several hundred thousand tons, assuming a thickness of 5 feet to a depth of 100 feet. The reserve of the higher grade pegmatite pods, however, is small, and it is in these bodies that the operators have done all their exploration work. Four pod-shaped bodies in the area of the applicant's proposed exploration work contain an inferred reserve of 1300 tons of pegmatite that contains small quantities of beryl, chrysoberyl, and muscovite.

The applicant proposes to explore the dikes and pods on the Santa Cruz group of claims by 1000 feet of drifts and crosscuts, and an unspecified amount of trenching, at a cost of $10,000. It is recommended that the applicant's request for a [illegible] loan be denied, as the muscovite is not of strategic grade, and the beryllium-bearing minerals are far too sparsely distributed to be of economic interest.

Introduction

The Santa Cruz mica-beryl property of the Taylo Mining Corporation was examined for the Defense Minerals Exploration Administration by [illegible]. [illegible] Hall and [illegible]. P. Irwin of the Geological Survey and George Holmes of the Bureau of Mines during the period February 5 to 8, 1953. The purpose of the examination was to determine if a government loan of $40,000 requested by the Taylo Mining Corporation to explore the property was warranted.

Location

The property is at an altitude of 6,000 to 7,000 feet in the Virgin Mountains, Clark County, Nevada. According to the mine manager the northeastern part of the property is in Arizona. The property is accessible by 9 miles of well-graded road that extends south from U. S. Highway 93 at a point two miles west of Mesquite, Nevada. On the property, at least six miles of good road, though steep in places, leads from the graded gravel road to all places where the applicant proposes exploration work.

The Santa Cruz property consisted of 8 unpatented claims on September 19, 1952 when the application for DMEA loan was filed. Since then, the Taylo Mining Corporation acquired the Emerald Group of claims adjacent to the north end of the Santa Cruz group. According to Mr. Lloyd, manager of the Taylo Mining Corporation, and presumably owner of the Lloyd Mining Company, the Taylo Mining Corporation would also acquire the Blue Jay group of claims, adjacent to the south end of the Santa Cruz group, from the Lloyd Mining Company on February 14, 1953.

Little work has been done on the pegmatites, and there has been no production from the property. 220-foot adit was driven in schist between two pegmatites by earlier prospectors in search of tungsten; no ore was encountered. Two short adits have been driven by Lloyd, one in barren schist on the Blue Jay group, and another along the series of small thin pods of muscovite-rich pegmatites. The only other work on the property, besides an extraordinarily elaborate system of access roads, is a few small shallow cuts made by blasting outcrops.

Method of examination

The main purpose of examination was to determine the beryl content of the pegmatite body. Customary methods for sampling metalliferous deposits are not applicable to deposits of pegmatite. The most accurate method of sampling pegmatite deposits would be to collect numerous large samples for mill tests. Considering the many pegmatite bodies on the applicants property, and the wide variance in beryl content between individual bodies, the large tonnage of rock necessary to be collected made such a method impractical. Satisfactory results have been obtained more simply by the mineral count and allied methods.

Sketch map was made of the principal pegmatites on the Rising Star claim of the Emerald group. These pegmatites are similar to other pegmatites in the area, and it is doubtful whether the applicant proposes to explore. At intervals of 50 feet along the pegmatite outcrops the percentage of beryl was computed by determining the area of combined beryl in relation to the area of pegmatite. The percentages obtained may be somewhat lower than the grade of unexposed pegmatite, as beryl and chrysoberyl crystals at some of the richer spots have been removed by the applicant. The percentage figures obtained, however, are believed to be a reasonable approximation of the quantity of beryl present in the pegmatite bodies.

Geology

Swarms of pegmatite bodies occur in a band of muscovite schist that is several hundred feet wide. The band may be discontinuous, but occurs over a length of at least 1 miles through the Blue Jay, Emerald Queen and Emerald groups of claims. The foliation of the schist strikes northeast and dips steeply to the southeast. The pegmatite bodies are parallel to the foliation of the schist. They range from dikes 350 feet long and 3 feet thick to lenticular pods 25 feet long and 5 feet thick (see plate). They are fine to medium-grained and consist principally of perthitic microcline, plagioclase, quartz, and muscovite. Beryl, chrysoberyl, schorl, garnet, and biotite are minor constituents. The average grain size of the pegmatite is between 1/4 and 1/2 inch in diameter. In general the grain size of the smaller bodies is coarser than that of the larger.

Throughout most of the pegmatites the minerals are not concentrated in specific zones. Zoning is most common in the smaller and coarser grained bodies. The central part of a body where zoned consists of coarse microcline or quartz. At a few places, muscovite crystals form a thin zone for several feet along the hanging wall of the pegmatite.

Ore

Muscovite mica, and the beryllium-bearing minerals, beryl and chrysoberyl, are sought by the applicant. Mica constitutes from 5 to 30% of the pegmatite, the average being about 10 percent in the pegmatite pods and less than 5 percent in the pegmatite dikes. It ranges from small flakes to books as large as 8 inches across. The average size of the book mica is between 1 and 2 inches. Little is larger than 4 inches. Most of it is green colored, but in places with a suggestion of red color. The only ruby mica seen was in a small body on the Blue Jay group of claims. The books are tangled, ruled, warped, and marked by A - structure. Biotite, quartz and hematite (?) occur as intergrowths in the muscovite, particularly in a deposit on the Rattlesnake claim of the Emerald group that contains the largest books of mica that were seen on the property. Sheets 2 by 3 inches have been trimmed, but are worthless as strategic mica owing to the

hematite (?) intergrowths and stains. No mica of strategic grade was seen during the examination and it is unlikely that any is present on the three groups of claims.

Beryl occurs in the pegmatite as pale bluish-green crystals that range from 1/16 to 3/4 inch in diameter. Chrysoberyl occurs in the smaller bodies as thin yellowish-green plates as large as 1/16 by 1/2 by 1 inch. Nineteen mineral counts at intervals of 50 feet along pegmatite dikes on the Rising Star claim averaged 0.4 pounds of beryl per ton, ranging from 0 to 2.5 pounds of beryl per ton. Seven mineral counts of the smaller, pod-like bodies average 0.3 pounds of beryl per ton and 0.6 pounds of chrysoberyl per ton. The pods, however, have been picked over by the applicant, and it is possible that the beryl and chrysoberyl content before picking was several times greater than the mineral count indicates.

According to Mr. Lloyd, 50 tons of pegmatite from the Blue Jay claim was mined to determine the value of the recovered mica and beryl. He reports that 20 percent mica was recovered, and 15 pounds of beryl per ton. Although the deposit is one of the most beryl-rich seen in the area, it seems very likely that it would need to be hand sorted before milling to give the results reported by Lloyd. The mill test consisted of coarse crushing and hand picking the beryl and mica from an inclined vibrator table.

Ore reserves

One of the pegmatite bodies contains qualitative amounts of beryllium-bearing minerals on a scale also to be termed large. The lengths of individual pods at the north end of the Rising Star claim (see plate 1) range from 100 to several hundred tons, averaging a depth equal to one-half the length of the pods. The exposed pods total about 1,100 tons with an average grade of 0.3 lbs. of beryl, and 0.6 lbs. of chrysoberyl per ton. The best deposit on the Blue Jay claim, of which ten mill test was made, is inferred to contain about 2500 tons of pegmatite that may contain several pounds of beryl per ton. Two small pods being developed on the Emerald Group contain an inferred reserve of about 250 tons of pegmatite of similar grade. The total of the exposed pods on the Santa Cruz, Blue Jay, and Emerald Group of claims is an inferred 4,950 tons. The larger dike-like bodies constitute considerably larger tonnages, but contain no chrysoberyl and an appreciably lower percentage of beryl and muscovite.

Exploration

The applicant's proposed exploration is all on the Santa Cruz group of claims. He proposes to drift on pegmatites on the Rising Star, Sundown, and Santa Cruz claims by 3 adits with a total length of 900 feet, and to

run crosscuts totalling 100 feet from the 225 foot adit in mica schist on the Rising Star claim to pegmatite, and also included was an unspecified amount of trenching on the [illegible] claim. The applicant has estimated that this would cost about $20,000 including engineering and supervision. Mr. Lloyd states that the $10,000 requested for metallurgical tests and mill design is no longer needed, as the Beryllium Corporation has agreed to underwrite the cost of this work. The field team saw no verification of this and apparently no engineer from the Beryllium Corporation has visited the property.

The applicant proposes to start each of the adits from 50 to 100 feet below a high-grade pegmatite pod and to continue the adit along a pegmatite dike. Most of the adits would explore dikes of pegmatite that contain too little muscovite and beryl to be worthy of exploration.

Qualification of the applicant

The applicant has spent probably more than $20,000 on building impressive roads to the property and in leveling off a mill site, but little has been done to develop the pegmatites or to prove their grade. The two adits totalling about 275 feet, driven on the Harold and Blue Sky claims, are almost entirely in mica schist with their targets presumably a little farther ahead. All of the figures on grade quoted by Lloyd have been taken at his word, as he has neither assays nor systematic mill tests to substantiate his claims.

The price of beryl was discussed with Lloyd. He claims to receive $2.50 per pound of beryl crystals, or $5,000 per ton. He became quite incensed when told by the Field Team that they believed beryl to be worth only $.25 per pound, or $500 per ton. Lloyd stated that if the price of beryl was only $.25 per pound his deposits would be worthless. The Field Team agreed with his last statement.

Recommendation

It is recommended that the applicant's request for a $[illegible] loan to explore the pegmatite bodies on the Ta Ko Mining Corporation property be denied, as there appears to be no ore of strategic grade and the pegmatites contain insufficient amounts of beryl and sterroberyl to be mined economically.

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

February 3, 1953

AIR MAIL

Memorandum

To: Mr. Lawrence Houk, Defense Minerals Exploration Administration, Interior Building, Washington, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2717 (Mica-Beryl), Eagle Mining Corporation, Overton, Nevada, Santa Cruz Mine, Clark County, Nevada

Reference is made to my subject memorandum, dated December 29, to R. R. Lloyd of which you received a copy.

I have now received a copy of a letter sent to Mr. R. R. Lloyd, Bureau of Mines, Boulder City, dated January 27, 1953, from Mr. J. F. McGinness, Superintendent, General Services Administration, Custer, South Dakota, informing us that the samples of Mica and Beryl were received on January 13, but to date he has not heard from you.

Kindly notify Mr. McGinness directly as to what you wish done with the samples.

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: R. R. Lloyd, Boulder City, Nevada
J. F. McGinness, Supt., GSA
Custer, South Dakota

HCMiller:mpp
Files
Chron.

2717

[illegible] 4637

[illegible] Administration
January [illegible], 1955
[illegible]

Region [illegible]

Attn: [illegible]

[illegible] - [illegible]

It is [illegible] - [illegible]

[illegible]

C. O. Mittendorf

[illegible]
[illegible] Administration

Houk:[illegible] 1/[illegible]/55

Copy to: Mr. [illegible] File
Docket File
Field Team, Region III
Mr. Dietrich, 3526
Mr. Morton, G-[illegible] GSA Bldg.
Mr. Houk

[illegible] California

Subject: [illegible] 777 - Plan-Beryl
[illegible] Nevada
[illegible] Cross Wise
[illegible]

JAN 21 1953

[illegible]

George C. Selfridge

[illegible] Committee

[illegible]/Battlerifle 1/19/53

Copy to: Admr. [illegible] File
Secret File
Operating Committee (2)
Mr. Griffith, 3641A
Mr. Norton, G-232 GSA Bldg.
Mr. Houk

Approved:

J. H. Hedges

Member, [illegible]

T. P. Thayer

Member, [illegible]

[illegible] P

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
P. O. DRAWER "B"
BOULDER CITY, NEVADA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 16 1953

January 9, 1953

General Services Administration
Mica Purchasing Depot
Custer, South Dakota

Attention: Mr. McGuinness

Gentlemen:

Under separate cover we have shipped you samples of mica and beryl collected by our Mineralogist from the Santa Cruz Mine, Clark County, Nevada. This mine is controlled by the Tagio Mining Corporation, who have made application for a development loan, Docket DMEA-2717. The samples of beryl were picked; the pegmatite is estimated to contain 5 to 8 pounds of such beryl per ton. The book mica, also picked, is not thought to be strategic, but the deposit may contain strategic mica at depth.

The samples were shipped at the request of Mr. Lawrence Houk, DMEA, Washington, D. C. You will hear shortly from Mr. Houk regarding these samples, if you have not already been so advised.

Very truly yours,

R. R. Lloyd, Chief
Electrometallurgical Branch
Metallurgical Division
Region III

cc: Lawrence Houk, DMEA, Wash.
H.C. Miller, S.F.
E.H. Bailey, USGS

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 5 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

December 29, 1952

Memorandum

To: R. R. Lloyd, Bureau of Mines, Boulder City, Nevada

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMFA-2717 (Mica-Beryl), Taglo Mining Corp., Overton, Nevada, Santa Cruz Mine, Clark County, Nevada

On Wednesday December 24, I had a telephone call from Mr. Lawrence Houk, DMEA, Washington, D. C., requesting us to ship one-half of the samples of Mica and Beryl collected by E. T. Schenk at the subject property to him and one-half to GSA Mica Purchasing Depot, Custer, South Dakota, % Mr. McGuinness.

Mr. McGuinness should be informed that the samples are being sent to him at Mr. Houk's request, and that he will hear shortly directly from Mr. Houk regarding them if he has not already heard from him.

H. C. MILLER
H. C. Miller
Executive Officer, DMEA Field Team
Region III

Copy to: Lawrence Houk, DMEA, Washington
E. H. Bailey, USGS

HCMiller:mpp
Files
Chron.

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 9 1952

December 5, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2717 (Mica-Beryl), Taglo Mining Corp., Overton, Nevada, Santa Cruz Mine, Clark County, Nevada

Reference is made to your subject letter, dated October 21, requesting a field team report on the Santa Cruz Mine.

In carrying out your request for a field examination, it was deemed advisable by Mr. Bailey and me to first find out more about the occurrence of mica and beryl in the Clark County, Nevada pegmatite than was known at the time the request reached us. As E. T. Schenk, Bureau of Mines Mineralogist, who is stationed at our Boulder City Plant, which is only about 100 miles from the Santa Cruz Mine, due to his training and experience, knows mica and beryl and other minerals found in pegmatite probably as well as or better than anyone else in Government service in the West, we requested him to make a preliminary examination of the Santa Cruz deposit.

Mr. Schenk examined the Taglo Mining Corporation's Santa Cruz property and a copy of his report, entitled Report on the Taglo Mining Corporation's Mining Claims in the Virgin Mountains, Clark County, Nevada is attached.

Mr. Schenk has prepared an excellent report. He collected samples during his examination of the property but is holding them at Boulder City because he does not believe they will add anything to the information already available to us.

Before proceeding with further investigation of the property, we would like to have the opinion of the Survey and Bureau experts in the Washington Office on Mica and beryl as to whether further consideration of the property is advisable. If they feel that Schenk's report warrants further consideration of a loan, we will then send mining engineers to the property to work out an adequate exploration program and the costs thereof.

H. C. MILLER
H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

NOV 12 1952

Hon. Edmund G. Brown
Attorney General
State of California
State Building
San Francisco, California

Subject: [illegible]-2717
Pagio Mining Corp.
Santa Cruz Mtns

My dear Mr. Brown:

Reference is made to your letter of October 31, 1952, addressed to the Secretary, in which you express your interest in the captioned application for exploration assistance. In the absence of Mr. Chapman from the city, your letter has been referred to me for reply.

We assure that this application will be processed as rapidly as possible. On October 21 it was referred to our Region [illegible] Office in San Francisco for a field examination of the property. On the same date the applicant was advised that it was being forwarded to the field.

Your interest in the Defense Minerals Exploration Administration's program is appreciated.

Sincerely yours,

D. O. Mittendorf

Administrator

[illegible]/Mittendorf/gad/fw
11/17/52

cc: Adm. Reading File, [illegible]
Secretary's Reading File
Asst. Sec'y for Mineral Resources
Mails & Files, [illegible]
Field Team, Region [illegible]
Mr. Norton, [illegible]-232 [illegible] Bldg.
Mr. Dietrich, 3526
Mr. Houk
Mr. Mittendorf

Mr. H. C. Miller
Executive Officer, DMEA
Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Subject: Docket No. DMEA-2717 - Mica-Beryl
Taglo Mining Corp.
Overton, Nevada
Santa Cruz Mine

Dear Mr. Miller:

Reference is made to the subject application for exploration assistance at the Santa Cruz Mine in the Virgin Mountains, Clark County, Nevada.

Production of 1,800 pounds of book mica from pegmatites in the Virgin Mountains during the 1890's has been reported, and a later report mentions the occurrence of beryl. Copies of pertinent memoranda from the Geological Survey and the Bureau of Mines are enclosed.

The Taglo Mining Corp. proposes a more comprehensive exploration program than is justified by the information in the application. No reason is given for the location and extent of the proposed drifts nor has a definite plan for trenching and sampling been presented.

Please arrange for a field examination of the Santa Cruz Mine to determine the merits of the property. If exploration is desirable, work out a suitable and adequate program with the applicant and submit it with the examination report. In the event that exploration is to be undertaken, a qualified engineer could supervise the work.

Unless it is obvious that no ruby mica acceptable for stockpiling can be recovered, a sample of the mica should be sent to the General Services Administration mica purchasing depot at Custer, South Dakota, attention of Mr. McCuinness, to determine whether it is strategic quality.

The Field Team's report should include observations and conclusions concerning the mica (strategic and scrap), beryl,

feldspar, and any minor strategic or saleable minerals observed in the pegmatite. If the report recommends surface work and sampling, it may be advisable to set up the program in two or three stages.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee

Approved:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

Enclosures 2

SAFeitler:gad 10/16/52

Copy to: Adm. Reading File
Docket File
Mr. Dietrich, 3526
Mr. Norton, G-232 GSA Bldg.
Operating Committee (2)
Mr. Houk

63 OCT 21 1952

Dr. M. A. Taglisferri, President
Taglo Mining Corporation
Overton, Nevada

Subject: Docket No. MMA-2717 - Mica-Beryl
Santa Cruz Mine
Taglo Mining Corp.
Overton, Nevada

Dear Dr. Taglisferri:

Your application in the above-numbered docket has been referred to Mr. E. C. Miller, Executive Officer, DMEA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California, for field investigation and recommendation.

Sincerely yours,

C. O. Mittendorf

Administrator

SAFeitler:gmd 10/17/52
Copy to: Adm. R. File
Docket File
Operating Committee (2)
Field Team, Reg. III
Mr. Dietrich, 3526
Mr. Norton, G-232 GSA Bldg.
Mr. Houk

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. dmea 2717
Metal or Mineral
Date Received 9-25-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: TAGLO MINING CORPORATION
Overton, Nevada

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

DEPARTMENT OF THE INTERIOR
Bureau of Mines
16—66551-1
SEP 25 1952

TAGLO MINING CORPORATION
Overton, Nevada

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore .....

.....

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated September 19, 1952

Taglo Mining Corporation
(Applicant)

By H. A. Taglianetti, President

Frank Ilgenfritz, Secretary

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—66551-1

TAGLO MINING CORPORATION
Overton, Nevada

To be attached to Form MF-103. APPLICATION - $40,000
Development Loan - $10,000, Testing and Mill Plans
MINERALS - MICA and BERYL

(1) a Taglo Mining Corporation
~~Carson City, Nevada~~,
Overton, Nevada

b A Nevada Corporation, Incorporated under the Laws of the State of Nevada.

c OFFICERS & DIRECTORS:

Dr. H. A. Tagliaferri — President
2873 Mission Street
San Francisco, California

Thomas A. Lloyd — Vice President
Overton, Nevada

Frank Ilgenfritz — Secretary-Treas.
625 Market Street
San Francisco, California

d Not a Partnership

(2) GENERAL - Read DMEA Order 1

(3) a 8 Unpatented Mining Claims located and recorded by Thomas A. Lloyd of Overton, Nevada. Claims with all development and improvements - deed to The Taglo Mining Corp'n. Assessment work for years 1951 - 1952 done and recorded, Court House, Las Vegas, Clark County, Nevada - See Property Map with Engineers Report. (Mining District Unknown)

b The property is known as the Santa Cruz Mine. No operating mines in district.

c As stated (3) Taglo Mining ~~Company~~ Corporation is the owner of the property

d See (c)

e There are no Liens or Encumbrances on the property.

TAGLO MINING CORPORATION
Overton, Nevada

(3) Contd.

f	San Lorenzo	Record Book No.			22	Page No.	529
	San Pablo	"	"	"	22	" "	533
	Santa Paula	"	"	"	22	" "	531
	Riseing Star	"	"	"	21	" "	242
	San Miguel	"	"	"	22	" "	535
	Sun Down	"	"	"	21	" "	242
	Santa Cruz	"	"	"	21	" "	268
	San Jose	"	"	"	21	" "	453

(4) a The Mine Development to date consists of Location Work. Open cuts on vein of dikes exposing outcrops and ore. One Drift 228 feet in length. Three or more miles of road work. Claims with this work done deeded to Taglo Mining Corp'n., the Applicants. There are no production facilities on the property and no production made to date. Development work only is now being carried on. All workings can be reached by roads about three miles (recently constructed) and all development work is accessible and open for inspection and examination. While there are no productin mines in the district considerable development work is now being done on adjoining properties. Those properties are open for inspection.

b No production has been made but development indicates that a sufficient tonnage of Mice Ore and Beryl Crystals will be produced to make the property a profitable venture. The Mica Ore may run 20%, Beryl Crystals have assayed 11.56% BO.

c The rocks in the vicinity of the property are probably Cambrian or Pre Cambrian, and consist of mica and green chlorite schists with limestones appearing at the base of the mountain to the west. An intrusive pipe of granodiorite was identified. The stratification planes, as well as the dykes, have a general magnetic northeast strike and dip nearly vertical. The dips and strikes are changed at various points by slight surface faulting, but do not appear to dislocate the general continuity of the main dykes or veins.

(4) Contd.

c The central mass of the Virgin Mountains is composed of massive pegmatite which cuts the mountainx into two distinct sections. This great pegmatite dyke can be seen along the entire strike or axis of the mountain range. Numerous smaller dykes, paralleling the major dyke and on the foot wall or west side of the main dyke, show considerable beryl which undoubtedly are worthy of development.

The principal mica bearing dyke is located for a continuous length of 4500 feet, covered by the Rising Star, Sun Down and San Jose claims. The strike, in general, is northeast and this dyke is visible for a distancw of two or three miles. The mineralization in the dyke, within the boundaries of the above mentioned claims, is extensive and massive and consists chiefly of muscovite mica ranging from 1/16" flakes to books as large as one foot in diameter. The average width of this dyke is estimated to be six feet. In most cases, where the dyke widens, the book miva becomes smaller. The work so far done indicates that this dyke will persist to a considerable depth.

any of structure quality?

A well defined pegmatite dyke on the Santa Cruz xlaim, with a width of about four feet, and at times widening from eight to ten feet, is traceable for a distance of about 1000 feet. This dyke contains, in addition to some mica, beryl crystals in varying amounts and is said to show traces of tin, tantalum, and some tungsten. The greatest development, however, indicates that the Beryl crystals and mica may be the only products of commercial value.

d The property is accessible by good roads, nine miles to Highway No. 93. It is 12 miles to the town of Mesquite where living conditions are adequate and good. Glendale, 40 miles west, is probably the best mill site and Railroad shipping point - Supplies can be purchased at Las Vegas 80 miles west, or Los Angeles, 370 miles west - good highway to both.

e There is a good supply of man power in the surrounding county, especially at the town of Mesquite and Glendale. Supplies can be purchased at either Las Vegas or Los Angeles. There is sufficient water on or near the property for development and mining but Glendale, 40 miles, is probably the best mill site due to power, water, labor, transportation and living conditions. The nearest electricity is at Mesquite, 10 miles, air line.

(5) a The minerals to be explored are Mica and Beryl.

b Further crosscut vein on surface by trenching and drifting on veins.

1. Riseing Star Claim - Crosscutting from 288 ft. Tunnel - Drifting 300 feet on vein.

2. Sun Down Claim - Open trench work on Sun Down claim vein.

3. San Jose Claim - Open trench work on surface and drifting 300 feet on vein.

4. Santa Cruz Claim - Drifting and crosscutting 300 ft. This claim has shown the better Beryl deposits.

TO RECAPITULATE

1.	Riseing Star Claim	400 ft. @ $30.00	$12,000.00
2.	Sun Down Claim & others	Trenching	5,000.00
? 3.	~~Sun Down~~ San Jose Claim	300 ft. @ 30.00	9,000.00
4.	Santa Cruz Claim	300 ft. @ 30.00	9,000.00
5.	Engineering and Supervision		5,000.00
6.	Metallurgical Tests & Mill Design		10,000.00
	TOTAL		$50,000.00

It is not planned that the work will be done on contract.

c The work can be started within 10 days and completed within 120 days from date of an exploration project contract.

d It is assumed that the present Mine Manager, Thomas A. Lloyd, who has had over 20 years experience in mining, will be in charge of the project. Mr. Lloyd is married and lives at Overton. He has other mining interests in the district.

Bert C. Austin has been retained as Consulting Mining Engineer. Mr. Austin resides in San Francisco and has acted as Mine Manager and Consulting Engineer, for over 30 years. His address is 983 Mills Building, San Francisco 4, California.

(6) The average rate of labor is $1.75 per hour
(1,000 foot under ground)

Estimated cost per foot of development, including trenching:

Labor Drilling	$ 5.00		Per Foot
Labor Mucking	3.50		" "
Labor Timbering	2.50		" "
Labor General	2.00		" "
Total Labor		$13.00	" "

SUPPLIES:

Explosives	3.00		Per Foot
Timber	2.50		" "
Pipe (Air and Vent)	1.00		" "
Track	1.75		" "
Gas	1.50		
Miscellaneous	1.00		
Total		10.75	
Labor and Supplies		$23.75	" "

Over Head

General Manager ($1,000.00 per month)	4.00		
Engineering ($500.00 Per Mo.)	2.00		
Bookkeeper ($350.00 " ")	1.40		" "
General Insurance Compensation & Taxes and Payroll deductions	2.00	9.40	" "

RECAPITULATION OF COSTS:
$1,000 Underground and (Trenching $5,000)

Labor	1,000 ft. @ $ 13.00	$ 13,000.00
Supplies	1,000 ft. @ 10.75	10,750.00
Over Head	1,000 ft. @ 9.40	9,400.00
Trenching		5,000.00
Contingencies		1,850.00
Total for Development		$ 40,000.00
Assaying, Mill Testing and Mill Plans		10,000.00
		$ 50,000.00

(6) Contd.

a It is not deemed advisable to work under contract on the proposed development.

b 1 General Manager @ $1,000.00 per month provided he gives all of his time to the project.

1 Consulting Engineer @ $500.00 per month, plus traveling expenses.

1 Book Keeper @ $350.00 per month.

All the above included in cost estimate under (6)

c 3 Doz. Shovels
3 " Picks
1/2 " Track Wrenches
1/2 " Bars
1/2 " Timber Saws
1/2 " Hand Saws
1/2 " Claw Hammers
1/2 " Axes
1/2 " 8# Hammers
1/2 " 4# "
1/2 " Pipe Wrenches
1/6 " Levels
1/6 " Squares

Some small miscellaneous tools will undoubtedly have to be added but all the above have been given consideration under Supplies in Estimates of Costs (6a) Power - Gas and Oil - Water can be supplied on the property.

d The following equipment can be rented if desired and has been included in costs (6a)

3 105 Cu. Ft. Portable Compressor @ $140.00 per month.
4 Machine Drills with water tank and hose
8 Set drill steel

All included in costs (6a)

It is to be noted that if work is to be carried on at the various locations simultaneous then all of the above equipment will be needed.

It is probable that a small change room will have to be built as well as a small hose room - cost estimated at a total of $1,000.00, included in estimated costs (6a).

(6) Contd.

e The small amount of equipment on the property will be furnished to the operators at a nominal rental included in costs (6a). There are no buildings on the property at present. Weather conditions are very favorable to all out door work the year round.

f Change Room and Warehouse, estimated cost $1,000.00 included in cost estimate (6a).

g Included in cost estimate (6a).

h It is believed that the estimates are sufficiently correct to require only a nominal allowance for contingencies and set forth in (6a) cost - $1850.00.

(7) a Yes.

b Money.

REPORT

ON

SANTA CRUZ MINING PROPERTY

CLARK COUNTY, NEVADA

AUGUST 10, 1952

BERT C. AUSTIN

TAGLO MINING CORPORATION
Overton, Nevada

BERT C. AUSTIN
MINING ENGINEER
MILLS BUILDING
SAN FRANCISCO, 4

TELEPHONE DOUGLAS 2-7160
CABLE ADDRESS
AUSTIN, SAN FRANCISCO
USUAL CODES

August 10, 1952

Dr. H. A. Tagliaferri
2873 Mission Street
San Francisco, California

Dear Sir:

I herewith transmit to you report on the Santa Cruz Mining Property, located in Clark County, Nevada.

It is recommended that you make application to the Government for a $50,000 loan to complete development and mill tests in order that this property may be put on production as soon as possible.

Very truly yours,

B. C. AUSTIN

Bert C. Austin

BCA-ew

I N D E X

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Water	2

Appendices and Map Attached

BERT C. AUSTIN
MINING ENGINEER
MILLS BUILDING
SAN FRANCISCO, 4

TELEPHONE DOUGLAS 2-7180
CABLE ADDRESS
AUSTIN, SAN FRANCISCO
USUAL CODES

August 10, 1952

Dr. H. A. Tagliaferri
2873 Mission Street
San Francisco, California

Dear Sir:

As authorized by you, an examination of the Santa Cruz Mining Property has been made. The commercial products from this property, as far as known, will be mica and beryl. (See Appendices Attached)

LOCATION: The Santa Cruz Mining property is located in the Southeastern part of Nevada, Clark County, near the Arizona-Nevada border, approximately 12 miles south of the town of Mesquite. It is about 40 miles northeast of Glendale, a station on the Union Pacific, about 80 miles north of Las Vegas and 370 miles ~~west~~ East of Los Angeles. The post office and express office is Mesquite, Clark County, Nevada. The mining district, if such exists, is unknown.

TOPOGRAPHY AND CLIMATE: The property lies on the northwest slope of the Virgin Mountains at an elevation of about 6000 feet, and while the topography is rugged, it offers an ideal location for mine plant and camp, with the exception of power and water.

Typical desert conditions prevail. The summers are dry and hot with little snow and rain during the winter months. The vegetation is sage brush, pinion pine, mesquite, cactus and joshua trees.

PROPERTY: The Santa Cruz property consists of eight full mining claims located by Thomas A. Lloyd of Overton, Nevada, and are duly recorded in the court house at Las Vegas, Clark County, Nevada. The names of the claims are:

San Lorenzo	San Miguel
San Pablo	Sun Down
Santa Paula	Santa Cruz
Rising Star	San Jose

a total of 160 acres, more or less. The assessment work for 1951-52 on these claims has been done and duly recorded. As far as known, the property is free of all indebtedness and not

encumbered in any way. In addition to the Santa Cruz group, negotiations are being carried on by Mr. Thomas A. Lloyd with Tri-State Metals, Inc., for 14 additional adjoinging claims. These negotiations are not as yet completed. Therefore, these claims are not considered as a part of the property covered by this report although the out-crops showing on the Santa Cruz group undoubtedly extend into the Tri-State Metals, Inc.'s property.

HISTORY: As far as known, no reports have been made on this district by either the State of Nevada, Division of Mines, or the U. S. Geological Survey. Apparently no work was done on this property either in the form of geological study or economic development prior to the recent development by Thomas A. Lloyd. It is possible that the property may have been located at an earlier date but there is no evidence that even location work was done. The value of the property as a mica or beryl producer was evidently not recognized or else thought to be of no value by the early prospectors.

TRANSPORTATION: A well gravelled road leads off the main Las Vegas-Salt Lake Highway No. 91, two miles west of the town of Mesquite. It is nine miles by this road to the principal operation on this property. Roads have been built to all points on the vein outcrops. In addition to the road leading to the Santa Cruz group, roads have been built to the 14 claims now owned by the Tri-State Metals, Inc., mentioned heretofore.

WATER: Water can be developed for domestic and mine use from nearby streams and springs. It is not evident, however, that water in sufficient quantities can be developed for milling operations on the property.

TIMBER: There is no timber on the property that would be suitable for mine or construction purposes. The nearest point of purchase would probably be Las Vegas, about 90 miles west. The price quoted at the present time is $100 per 1000 feet delivered.

POWER: The nearest electric power line is at the town of Mesquite, about 10 miles distant. Preliminary operations are dependent on diesel or gasoline power.

LABOR: There is a fairly good supply of labor in the district, and the average rate, now being paid, is $1.75 per hour. Accommodations for practically all labor can be had at the town of Mesquite, thus eliminating the necessity of boarding houses or accommodations at the mine. A crew of 10 men have been employed on development work.

GENERAL SUPPLIES: Supplies can be purchased either at Las Vegas, Los Angeles, or Salt Lake City and trucked directly to the property.

EQUIPMENT: The equipment now on the property consists of:

1 - 105 cu. ft. Le Roi Air Compressor.
1 - Small Crusher and Motor.
1 - Jack Hammer and Drill Steel.
Various hand tools (picks, shovels, etc.)
Small Mica Cutting Table.
No buildings on property.

MILL SITE: In the event that development warrants installation of a milling and grinding plant, it would appear that Glendale, approximately 40 miles west of the property on Highway 91, would be the most appropriate site. Economic factors here include labor, housing, electric power, water, tailings disposal, State highway and Union Pacific Railroad transportation.

GEOLOGY: The rocks in the vicinity of the property are probably Cambrian or Pre Cambrian, and consist of mica and green chlorite schists with limestones appearing at the base of the mountain to the west. An intrusive pipe of granodiorite was identified. The stratification planes, as well as the dykes, have a general magnetic northeast strike and dip nearly verticle. The dips and strikes are changed at various points by slight surface faulting, but do not appear to dislocate the general continuity of the main dykes or veins.

The central mass of the Virgin Mountains is composed of massive pegmatite which cuts the mountain into two distinct sections. This great pegmatite dyke can be seen along the entire strike or axis of the mountain range. Numerous smaller dykes, paralleling the major dyke and on the foot wall or west side of the main dyke, show considerable beryl which undoubtedly are worthy of development.

The principal mica bearing dyke is located for a continuous length of 4500 feet, covered by the Rising Star, Sun Down and San Jose claims. The strike, in general, is northeast and this dyke is visible for a distance of two or three miles. The mineralization in the dyke, within the boundaries of the above mentioned claims, is extensive and massive and consists chiefly of muscovite mica ranging from 1/16" flakes to books as large as one foot indiameter. The average width of this dyke is estimated to be six feet. In most cases, where the dyke widens, the book mica becomes smaller. The work so far done indicates that this dyke will persist to a considerable depth.

A well defined pegmatite dyke on the Santa Cruz claim, with a width of about four feet, and at times widening from eight to ten feet, is traceable for a distance of about 1000 feet. This dyke contains, in addition to some mica, beryl crystals in varying amounts and is said to show traces of tin, tantalum, and some tungstun. The present development, however, indicates that the beryl crystals and mica may be the only products of commercial value.

DEVELOPMENT: The early locators of the property did little or no development work to substantiate their locations, if such were made. During the past year, under the direction of Mr. Thomas A. Lloyd, approximately $40,000 has been spent on road work, trenching, research and the locating of claims. This money has been well spent, and the results have been satisfactory from a development point of view. The only underground development is a 228 foot drift on the Rising Star claim, giving backs of approximately 100 feet. This drift was evidently driven in the search of tungstun rather than following the pegmatite dyke on which it was started. Therefore, some cross-cutting from this drift should be done to determine the continuation of the dyke at this depth.

A shaft is being sunk on the north end of the San Jose claim to further prospect the mica dyke at this point. Beryl crystals are being hand cobbed from a central point on the Santa Cruz claim from the dyke paralelling the main mica dyke. It is expected that some book mica will be produced from the present development, and there is every indication that future development will add sufficient tonnage of mica ore to warrant the installation of a milling plant at Glendale.

ORE RESERVES AND PRODUCT: The development work has not been sufficient to give a definite estimate of tonnage. If, however, the pegmatite dyke, on which the greater part of the work has been done, persists to a depth of 100 feet and will average six feet in width, as indicated, and extends for a distance of 4500 feet within the boundaries of the Santa Cruz property, it could produce some 200,000 tons of mica ore that might run as high as 20% mica and return a profit of $10.00 per ton of ore from scrap mica, or other mill products. In addition, there is the possibility of book mica and beryl crystal production.

Mr. Lloyd states that results of some tests made indicate that the mica dyke may run as high as 20% mica, and that the parallel dyke on the Santa Cruz claim may produce beryl to the extent of 3% of volume of vein matter. The beryl so far produced in small quantities assays 11.56% beryllium oxide.

MARKETING: There is undoubtedly a good market for both mica and beryl products, as evidenced by various letters and inquiries recently received by Thomas A. Lloyd at Overton, Nevada.

The General Services Administration, Office of Public Information and Reports, Executive 4900, Extension 4511, GSA-155, with offices in the Appraisers Building, San Francisco, issued the following release under date of Friday, March 14, 1952:

(This release evidently pertains to hand cobbed or block mica.)

"The General Services Administration today announced a long-range purchasing program for domestic high grade mica designed to encourage the discovery, development and production of the critical mineral for national defense.

"Jess Larson, Administrator of GSA, said that depots are being established at Keene, New Hampshire, Spruce Pine, North Carolina, and Custer, South Dakota, to which miners and producers may ship their mica for inspection and purchase.

"Mr. Larson said the program will run until June 20, 1955, or when the total block, film and hand-cobbed mica delivered to and accepted by the Government reaches the equivalent of 25,000 short tons of hand-cobbed mica.

"Under the regulation, 45 pounds of block or film mica will be the minimum individual shipment accepted by the Government, while hand-cobbed mica must be offered in lots of at least one thousand pounds.

"Prices paid will depend on the quality of the mica, ranging from $70 a pound for No. 3 and larger 'good stained and better' processed block and film mica, down to $3 a pound for No. 5½ and No. 6 'heavy stained' mica. The Government will pay $600 per short ton for specified hand-cobbed mica."

The Engineering and Mining Journal of August, 1952, gives the following quotations on mica and beryl products:

Mica

Size	Per Pound
1½ x 2 inches	80 to 85¢
2 x 2 "	$1.10 to $1.20
2 x 3 "	$1.50 to $1.60
3 x 3 "	$1.80 to $1.90
3 x 4 "	$2.20 to $2.30
3 x 5 "	$2.40 to $2.50
4 x 6 "	$3.15 to $3.25
6 x 8 "	$4.00 to $4.50

North Carolina, wet ground $140 to $155 per ton, depending on fineness and quantity. Dry ground $32.50 to $70; Scrap, $32, depending on quality.

Pabco Products, Inc., of San Francisco, quote:

Ground Grade	Grind	Per Ton Price Delivered
Roofers	40 - 60 Mesh (Crude)	$70.00
Paint (White)	325 (Water Ground)	$170 - $180
Mica Schist (Rough)	Blended with Roofing Mica	$9.50 - $10

The Engineering and Mining Journal of July, 1952, quotes:

Beryl

Beryllium ore - Per unit of BeO contained 10 to 12% f.o.b. mine, Colorado, nominal. North Carolina, $36 @ $39.

Imported ore, per unit of BeO, c.i.f. U. S. Ports, basis 10% $36.50; 11% $37.50; 12% $38.50

Beryllium-Copper - Master allow, 4 percent beryllium, remainder copper, 5 lb. ingot, $1.56 per pound of alloy; 3 oz. ingot, $2.09.

CONCLUSIONS AND RECOMMENDATIONS: Approximately $40,000 has now been spent on development of this property by Thomas A. Lloyd and his associates. Both mica and beryl are classified as "Critical" by the Defense Mineral Exploration Program and the Government will give consideration to a loan on such property on a 90% basis. It is recommended that application for a government loan of $50,000 be made for further development, as follows:

Drifting and cross-cutting on Rising Star claim, 400 feet at $30 per foot	$12,000
Drifting on San Jose claim, 300 feet at $30 per foot	9,000
Cross-cutting and drifting on Santa Cruz claim, 300 feet at $30 per foot	9,000
Surface trenching	5,000
Metallurgical Tests and Mill designs	10,000
Engineering and Supervision	5,000
	$50,000

Practically all of this development work, with the exception of cross-cutting, should be in ore as the general drifting would be on the pegmatite dykes.

The property warrants this expenditure, and it is believed that a productive operation can be made which, of course, will eventually require the installation of a suitable milling plant on completion of the development work recommended. The size of the milling plant should be determined by the amount of ore development and the possibility of milling ore from adjoining properties.

Accompanying this report, there is a claim or property map showing roads, open cuts and general position of the main dykes.

Respectfully submitted,

Bert C. Austin

BCA-ew

APPENDICES AND MAP

MICA AND ITS USES

From: NONMETALLIC MINERALS
LADOO AND MYERS
Pages 314—331

"The term "mica" is a group name applied to a large number of minerals that have certain physical and chemical characteristics in common. They all have a perfect basal cleavage yielding very thin, tough, more or less elastic plates or laminae. Chemically they are all silicates, usually orthosilicates of aluminum with potash and hydrogen and generally magnesium and ferrous iron. Fluorine may be an important constitutent. Less common varities contain ferric iron, sodium, and lithium, with, more rarely, rubidium and cesium. Still more uncommon varities contain vanadium, barium, manganese, and chromium. All micas, upon heating, yield water (commonly 4 to 5 per cent, but chlorites yield 10 to 13 per cent and vermiculite 11 to 21 per cent, although they are not considered hydrosilicates).

Micas of commercial importance may be divided into two general groups: (1) those used for their physical properties, including muscovite, phlogpite, biotite, sericite, and vermiculite; and (2) those used for their chemical content, including lepidolite and zinnwaldite (lithium), and roscoelite (vanadium). In this section we will deal only with the first group, in which their physical or "micaceous" properties are important.

COMPOSITION. Muscovite, potash mica, $H_2KAl_3(SiO_4)_3$, is a complex silicate of potassium, aluminum, and hydrogen, also often containing sodium iron, magnesium, calcium, and flourine.

Phlogopite, amber mica, bronze mica, magnesium mica, $(K,H)_3Mg_3Al(SiO_4)_3$ is a complex silicate of magnesium, aluminum, potassium, and hydrogen, also often containing iron, sodium, and fluorine.

Biotite, black mica, magnesium-iron mica, $(K,H)_3(Mg,Fe)_2(Al,Fe)_2(SiO_4)_3$ is a complex silicate of magnesium, iron, aluminum, potassium, and hydrogen, also often containing titanium, sodium, and fluorine.

Electric Insulation. Sheets, films, mica board, washers, mica cloth, and tape, for dynamos, condensers, telephones, light sockets, spark plugs, and innumerable other electric appliances. Ground mica mixed with shellac is molded into various insulating forms.

Heat Insulation. Screens in front of highly heated material, as a retarder of heat waves in optical lanterns and in electric heating devices. Ground mica is used as pipe and boiler coverings, in annealing steel, and in fireproof paints and coverings.

Transparency. Glazing the fronts of stoves, for furnace sightholes, lamp chimneys, lamp shades, military lanterns, lantern slides, spectacles, sightholes of divers' helmets, compass cards, gage fronts, in windows where glass would be broken by heavy shocks or vibrations, and as coverings for wounds.

Resonance. Phonograph diaphragms and various sounding devices (submarine detectors).

Decoration. Sheets of mica form the material on which pictures and portraits are painted and are also used for inlay work. Ground mica is used extensively for decoration in wallpaper, processional ornaments, fancy paints, ornamental tiles, and concrete.

Lubrication. For wooden and metal bearings, tire powder.

Filler. Paints, patent roofing material, rubber goods, buttons, absorbent for nitroglycerin and various other products.

Miscellaneous. Calico printing, to prevent sticking of tar papers, medicinal uses (India only)."

BERYL AND THE USES

From: [illegible]
[illegible]
Pages 101-103-104

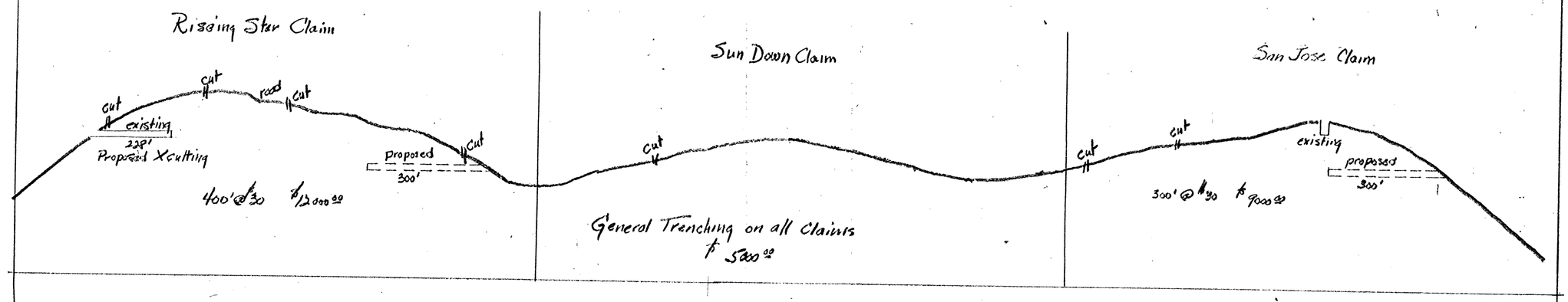
"Beryl is generally found in simple, prismatic, hexagonal prisms, from microscopic in size to over a foot in diameter by several feet long. The best known varities are emerald, colored bright green by small amounts of chromium; aquamarine, blue to sea green in color; yellow or golden beryl; morganite or cesium beryl, pale to rose-pink color due to small amounts of cesium; and common beryl, generally opaque and often in extremely large crystals.

Physical Properties. Hardness, 7.5 to 8. Specific gravity, 2.6 to 2.8. Index of refraction, 1.575 to 1.580. Color, various shades of green, blue, yellow, reddish, white, or colorless, sometimes mottled. Streak, white. Luster, vitreous. Cleavage, imperfect basal and prismatic; conchoidal to uneven fracture. Transparency, transparent to nearly opaque. Tenacity, brittle.

Gem varities of beryl, such as aquamarine, are usually found as clear, unflawed areas in larger crystals or masses of opaque material rather than as single clear crystals of gem quality, but sometimes such clear crystals are found.

Occurrence. Beryl is commonly found in pegmatites, the coarsely crystallized equivalent of a granite. Pegmatites are of fairly rare occurrence and are exposed only in areas of deep erosion; therefore, they are by no means a common rock structure. Beryl has been found in Maine, New Hampshire, Massachusetts, Connecticut, New York, Colorado, New Mexico, and South Dakota in quantities of commercial significance. It has been found also in Virginia, North Carolina, California, Pennsylvania, Wyoming, and other states. The presence of pegmatites does not ensure the presence of beryl. It is notably deficient in western North Carolina in the area of the most active feldspar and mica mining in pegmatites in the United States."

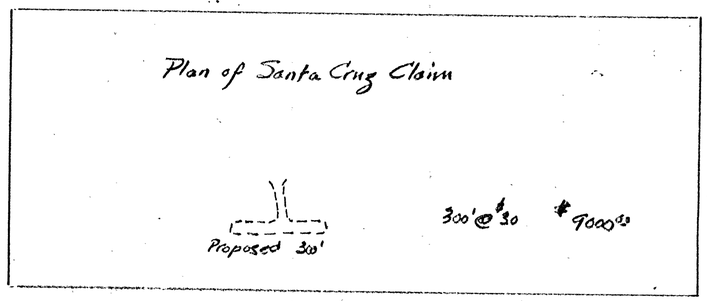
"Utilization. The rare, small, emerald-green crystals have been prized as gems for centuries. The finest quality material sells at prices comparable to those of the diamond. These emeralds have been found at Muzo and Chivor in Colombia; in the Ural Mountains, Russia; in Upper Egypt; in Tyrol; and in small quantity in North Carolina. Blue beryl is used as the popular gem, aquamarine, and the rarer pink variety is sold as morganite. Ground common beryl has been substituted in part for feldspar in the manufacture of ceramic bodies. The porcelain produced showed improved resistance to impact and a superior dielectric strength. It is probable that such usage would be substantial today if the raw material were available at a competitive price. BeO has great potential use as a refractory and an abrasive. Metallic beryllium displays remarkable properties of lightness in weight and strength. Its specific gravity is 1.93, compared to aluminum with a specific gravity of 2.66. Its extraction is considered to be one of the most difficult processes in metallurgy. It would provide a superlight-weight metal if the problem of raw-material supply could be solved. The small amounts available have been of great value in the development of atomic energy. The chief use of beryllium is in the manufacture of a beryllium-copper alloy. The master alloy commonly contains 4 per cent beryllium. The final alloys may contain from 0.5 to 2.5 per cent beryllium. These alloys have excellent conductivity for electricity and by heat-treatment produce a material with remarkable fatigue strength. They are useful in electrical equipment and also may be employed as a nonsparking tool where the use of steel would be hazardous. The scientific uses of the metal in X-ray tubes and fluorescent lamps is increasing."



Profile Sketch
looking NE
Scale 1in. = 200 ft.

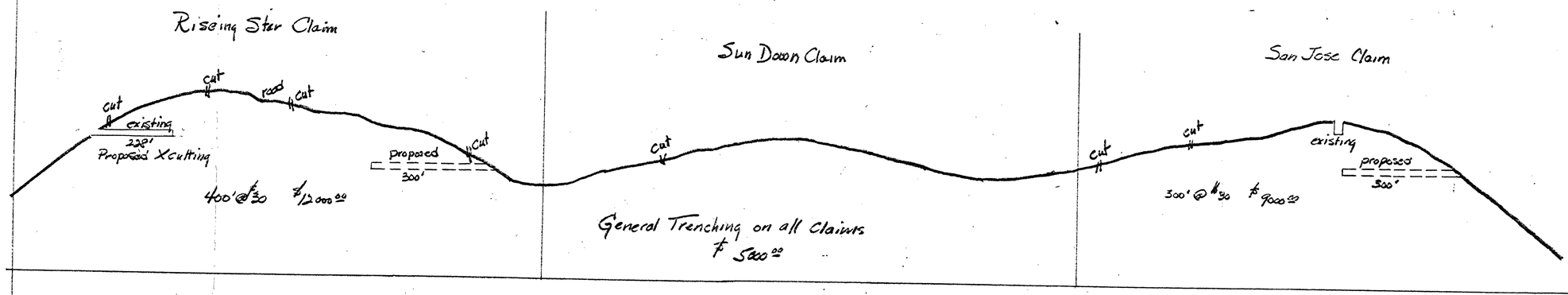
Summary of expenditures

1- Rising Star claim	$ 12,000.00
2- San Jose claim	9,000.00
3- Santa Cruz claim	9,000.00
4- Surface trenching	5,000.00



TAGLO MINING CORPORATION
Overton, Nevada

Note: this sketch is supplementary to the report of the Santa Cruz Mine by Bert C. Austin, 8/10/12



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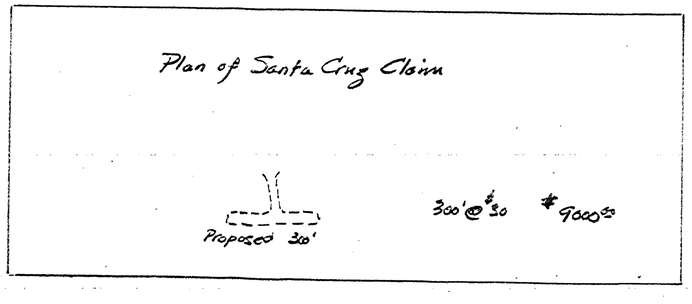
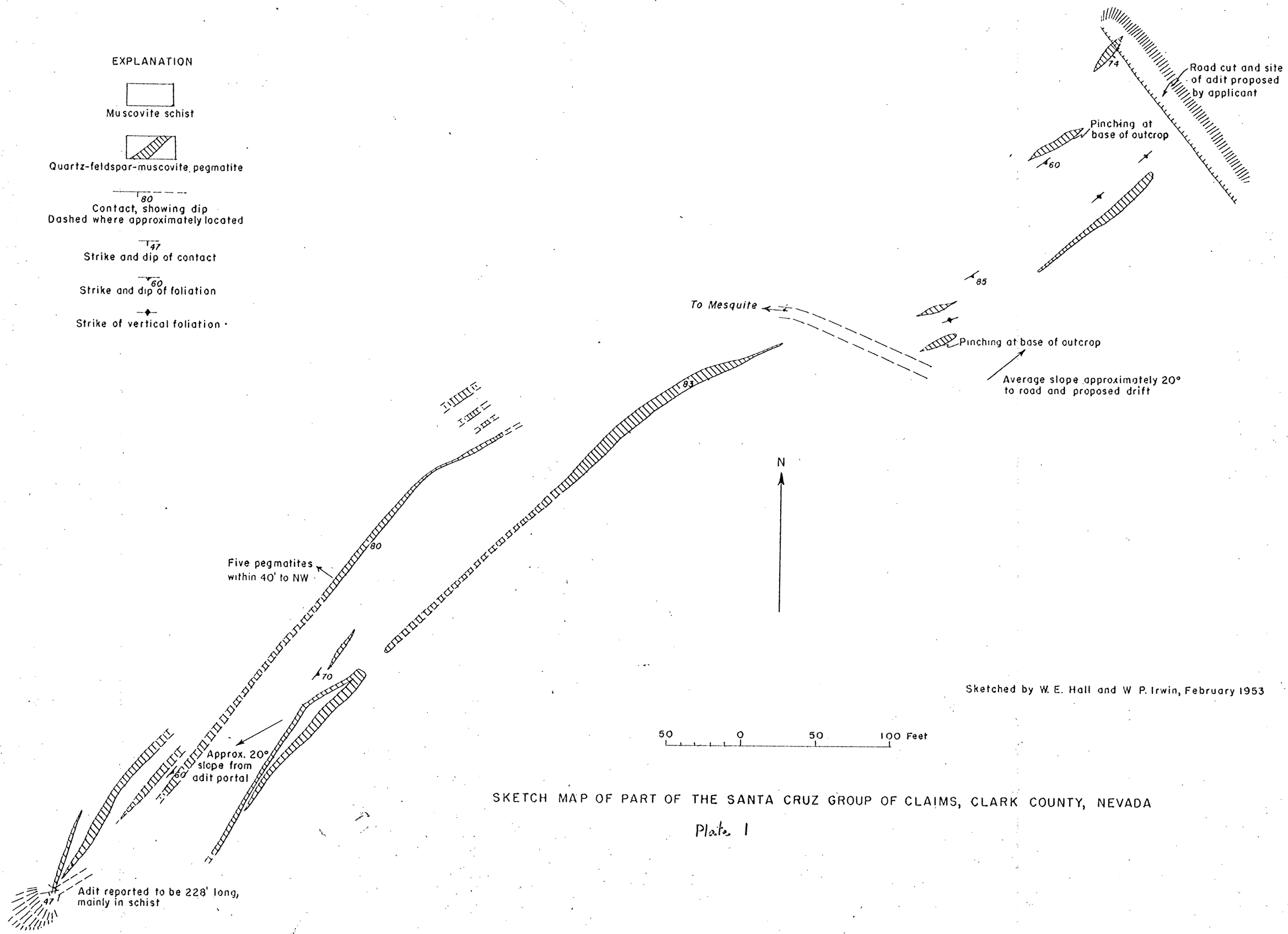


TAGLO MINING CORPORATION
Overton, Nevada

Note: this sketch is supplementary to the report of the Santa Cruz Mine by Bert C. Austin, 8/10/42

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA 2717
(Mica–Beryl)



Sketched by W. E. Hall and W. P. Irwin, February 1953

SKETCH MAP OF PART OF THE SANTA CRUZ GROUP OF CLAIMS, CLARK COUNTY, NEVADA

Plate 1