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DEFENSE MINERALS ADMINISTRATION
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DMEA ~~DMA~~ Docket No. 2418

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EXPLORATION PROJECT

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Copies to USBM, USGS, Region IV.

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To:	Operating Com. R. 4624	Date	4-8-52
To:	Code 700, R. 4640	Date	
To:	Mails & Files R. 4070	Date	6-19-52
To:	Operating Com.	Date	6-20-52
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8/18/52 gla

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

224 New Customhouse
Denver 2, Colorado

August 6, 1952

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2418 (Mercury)
Deer Trail Mines, Piute County, Utah

Enclosed are the original and three copies of the report pertaining to the above application. The brochure is also enclosed.

The applicant had requested a loan in the amount of $113,205.75. The field examination was made at the request of the Operating Committee in their letter dated April 14.

John W. Wilhelm, the applicant, withdrew the application by letter dated June 14.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
RECEIVED
AUG 11 1952

Mining Division
Region IV

AUG 11 1952

August 6, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2418 (Mercury)
Deer Trail Mines, Piute County, Utah

Enclosed are nine copies of the engineering report by R. L. Middleton of the Bureau of Mines on the Deer Trail Mines.

The engineering report was prepared prior to the date of the withdrawal of the application by John N. Wilhelm, the applicant.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

8-15-52
(date)

July 15, 1952

Memorandum

To: W. H. King, Acting Chief, Mining Division, Region IV

From: Chief, Utah-Wyoming Branch, Mining Division

Subject: DMEA-2418, Lucky Boy prospect, Deer Trail Mines, Piute County, Utah

Enclosed are the original and 8 copies of an engineering report covering the subject docket. The report was prepared by R. L. Middleton. Also attached is a Summary, Conclusions and Recommendations section assembled by Middleton with Johnson and Hasler of the Survey.

The application was withdrawn from loan consideration by John W. Wilhelm, the applicant. However, an examination had been made previous to withdrawal; thus an engineering report was prepared as a result of the examination.

The original brochure is enclosed. Also attached are copies of memoranda transmitted with your memorandum of April 18, 1952.

I concur with the conclusion that the loan request be denied.

Stephen R Wilson

Stephen R. Wilson

Enclosures 2

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

200 New Customhouse
Denver 2, Colorado

August 6, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2418, Deer Trail Mines, Piute County, Utah (Mercury). Recision of application for Defense Minerals Exploration Administration loan.

Enclosed are 8 copies of a memorandum report by J. William Hosler of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be denied, and the applicant has requested that the application for an exploration loan be cancelled.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Room 208, 222 So. West Temple
Salt Lake City 1, Utah
1 July 1952

Memorandum

To: A. H. Koschmann

From: J. William Hasler

Subject: DMEA Docket 2418, Deer Trail Mines, Piute County, Utah (Mercury). Recision of application for Defense Minerals Exploration Administration loan.

On March 17, 1952, the Field Team, Region IV, requested a field examination to ascertain the advisability of a Defense Minerals Exploration Loan of $113,205.75 to explore for mercury ore at the Deer Trail Mine, Mt. Baldy mining district, Piute County, Utah.

A field examination was made June 12-13, 1952, by J. W. Hasler and Vard H. Johnson, geologists of the U. S. Geological Survey.

The rocks in the mine are Jurassic limestone and quartzite which have been cut by a strong north-striking fault and to a lesser degree by east-striking faults.

Mercury was found in the Lucky Boy mine as tiemannite and ofronite, both selenides of mercury. The ore minerals are associated with calcite, barite, and pyrite and occur along beds of shaly limestone that have been cut by small east-striking faults.

The applicant proposed a program to explore for mercury ore by driving an adit at 300 feet and a crosscut at 1100 feet below the outcrop of the Lucky Boy fissure which, according to the applicant's geologic map, strikes S. 80° E. and dips 75° north and is exposed in the Lucky Boy Mine.

The examining geologists found no evidence of the Lucky Boy fissure on the surface, or in the Lucky Boy mine as was shown on applicant's map. No

mineralized fault or vein was found that would in any way justify the exploration work outlined by the applicant. There are no measured reserves of mercury ore on the property, and no reserves can be inferred. The mercury mineralization was scattered and sporadic.

It is concluded that the possibility of finding any quantity of mercury of commercial grade at the Deer Trail Mine is not good, and that the applicant's proposal is not founded on sound geologic evidence. It is therefore recommended that the application for a Defense Minerals Exploration Administration loan be denied.

The applicant, Mr. John W. Wilhelm, has requested that the application for the exploration loan be rescinded. The examining geologists agree with the applicant that the application for the exploration of mercury at the Deer Trail Mine not be considered.

/s/ J. William Hasler

cc: W. H. King
S. R. Wilson

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By J. W. Hasler,
Vard Johnson, and
R. L. Middleton

The Lucky Boy mercury property, Piute County, Utah, was examined by personnel of the Geological Survey and Bureau of Mines during May and June 1952. The property owner submitted an application for a loan of $113,205.75 to conduct exploration on the property. The present report appraises the feasibility of the loan request.

Rocks in the mine area are Jurassic limestone and quartzite cut by north- and east-striking faults. Mercury-selenium mineralization is found as small pods replacing shaly limestone. Ores, consisting of tiemannite, onofrite and cinnabar associated with barite and pyrite, have been mined from a pit 100 feet in diameter and 60 feet deep. Mineralization apparently is weaker at depth, for no ores were produced from the lowest workings in the pit area. No structural conditions exist to justify the program of drifting and crosscutting outlined by the applicant to cut the projection of mercury-selenium mineralization found at the surface.

It is recommended that the loan request be denied.

DEER TRAIL MINES
LUCKY BOY PROSPECT
PIUTE COUNTY, UTAH
DMEA-2418
Mercury

Engineering Report

By R. L. Middleton
Mining engineer
Bureau of Mines

DEER TRAIL MINES
LUCKY BOY PROSPECT
PIUTE COUNTY, UTAH

CONTENTS

	Page
Engineering report	
Introduction	2
Acknowledgments	2
Location and physical features	2
History and production	3
Ownership and extent	3
Description of the deposit	3
Minable ore reserves	4
Present status	4
Project proposals	4
Conclusions and recommendations	5

ILLUSTRATIONS

Fig. 1 Location map, Lucky Boy Prospect, Deer Trail Mines, Piute County, Utah.

INTRODUCTION

The Lucky Boy prospect on the Deer Trail Mines property was examined during May 1952 to evaluate a mercury exploratory project, as proposed in DMEA docket 2418. The work proposal consists of 900 feet of drifting and 1,400 feet of raising to be done at a cost of $113,205.75. The engineer was accompanied to the property by J. H. Wilhelm, the applicant, and W. B. Crawford, consultant for the company.

Since the examination, the Deer Trail Mines management has rescinded the application for mineral exploration.

ACKNOWLEDGMENTS

Data obtained from U. S. Geological Survey Professional Paper 111, by B. S. Butler, G. F. Loughlin and V. C. Heikes, were used in preparation of this report.

LOCATION AND PHYSICAL FEATURES

The Lucky Boy property lies in secs. 11 and 12, T. 28 S., R. 4 W., S.L.B.M., Mount Baldy district, Piute County, Utah (fig. 1). The area is accessible by way of U. S. Highway 89, and a fair-conditioned county road. At a point 3.5 miles south from Marysvale, Utah, a county road leaves U. S. Highway 89 and extends westward 3 miles to the property. A steep trail extends 1/4 mile from the end of the road to the Lucky Boy open pit.

The property, at an altitude of 8,000 feet, is located on the rugged, east slope of the Tushar Range. Because of the steep topography and shallow soil mantle, geologic formations are readily observed.

HISTORY AND PRODUCTION

The Lucky Boy property was located as a silver prospect prior to 1878. From 1886 to 1887, the mine produced 213 flasks of quicksilver from ores containing mercury selenide. There has been no recorded production from the mine since that date. The Deer Trail mine, located on an adjacent property now under the same management as the Lucky Boy mine, produced 160,269 tons of ores containing chiefly lead, copper, silver, and gold, from 1916 to 1944.

OWNERSHIP AND EXTENT

The proposed exploratory project is confined to the boundaries of three patented lode mining claims, Deer Trail, De Witt Ferguson, and Deer Trail Fraction. The property is owned by the Deer Trail Mining Company, of which J. W. Wilhelm, Marysvale, Utah, is general manager.

DESCRIPTION OF THE DEPOSIT

Mercury-selenium mineralization was formed by replacement near a fissure which crosses a north-east striking, and 15- to 20-degree north-dipping bed of shaly limestone. The resulting bedded deposit, containing small bunches of selenide of mercury, was mined from the

surface by an open pit approximately 100 feet in diameter and reportedly 60 feet deep. Talus and soil has filled a large portion of the original pit, but it is reported a shaft located at the bottom of the pit was sunk about 40 feet on a north-south, nearly vertical vein 2 to 8 inches wide. Mineralization on the vertical vein apparently was weaker at depth, for there is no reported production from the lower working. There is no evidence of the existence of the north-south fissure in the area, but it is reasonable to assume that the reported vein was probably the channel which provided access for mineralizing solutions. Several inclined adits were driven northwest from the open pit, but the mineralization along the limestone horizon is insignificant. The ore minerals are onofrite, tiemannite, and cinnabar associated with barite and pyrite.

MINABLE ORE RESERVES

There are no ore reserves in the Lucky Boy mine.

PRESENT STATUS

No new work or maintenance of the open pit and adits has been done since the 1880's and the workings are in poor condition. There are no mining, milling, or other facilities on the property, but mining and facilities are available on the Deer Trail property.

PROJECT PROPOSALS

The applicant has proposed exploration at the intersection of the Lucky Boy fissure with favorable limestone beds at a lower depth. The

proposed project consists of approximately 400 feet of drift from a surface location driven in such a manner as to intersect the projection of the Lucky Boy fissure at the 300-foot level, drifting approximately 500 feet from the Deer Trail development adit to intersect the projected vein at the 1,100-foot level, then raising on the Lucky Boy fissure from the lower level to the 300-foot level and to the surface.

CONCLUSIONS AND RECOMMENDATIONS

The exploratory project, as proposed by the applicant, is not feasible because there is no evidence an east-west fissure, referred to as the Lucky Boy, exists. The applicant stresses that samples taken on the property and assayed for mercury and selenium are consistently lower in quantities reported than the true content. Discussions with G. M. Potter and C. H. Schack of the Ore Dressing Section at the U. S. Bureau of Mines Experimental Station at Salt Lake City, Utah, reveal that there are no process difficulties in assaying the Lucky Boy samples and that the mercury and selenium determinations are accurate. The applicant has investigated several mercury occurrences on the property, using an ultra-violet lamp with a willemite screen, and from these results, he believes mercury is present in significant amounts. Unless the observer, while using the willemite screen test for mercury, is aware that the test is of a qualitative rather than a quantitative nature, the results can be misleading, and this fact seems to be true in this case.

It is recommended that loan be denied.

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

224 New Customhouse
Denver 2, Colorado

August 6, 1952

BE

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2418 (Mercury)
Deer Trail Mines, Piute County, Utah

Enclosed are the original and three copies of the report pertaining to the above application. The brochure is also enclosed.

The applicant had requested a loan in the amount of $113,205.75. The field examination was made at the request of the Operating Committee in their letter dated April 14.

John W. Wilhelm, the applicant, withdrew the application by letter dated June 14.

W. H. King
W. H. King

AUG 11 1952

A. H. Koschmann
A. H. Koschmann

Enclosures

cc: SRWilson w/copy of final report
Mining Div. w/copy of final report
AHKoschmann w/copy of final report
DMA Final Report
Ralph Roberts w/copy of final report

Mining Division
Region IV

August 6, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2418 (Mercury)
Deer Trail Mines, Piute County, Utah

Enclosed are nine copies of the engineering report by R. L. Middleton of the Bureau of Mines on the Deer Trail Mines.

The engineering report was prepared prior to the date of the withdrawal of the application by John W. Wilhelm, the applicant.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Materials Administration
DMEA
AUG 11 1952

Reviewed by
DMEA OPERATING COMMITTEE
8-15-52
(date)

July 15, 1952

Memorandum

To: W. H. King, Acting Chief, Mining Division, Region IV

From: Chief, Utah-Wyoming Branch, Mining Division

Subject: DMEA-2418, Lucky Boy prospect, Deer Trail Mines, Piute County, Utah

Enclosed are the original and 8 copies of an engineering report covering the subject docket. The report was prepared by R. L. Middleton. Also attached is a Summary, Conclusions and Recommendations section assembled by Middleton with Johnson and Hasler of the Survey.

The application was withdrawn from loan consideration by John W. Wilhelm, the applicant. However, an examination had been made previous to withdrawal; thus an engineering report was prepared as a result of the examination.

The original brochure is enclosed. Also attached are copies of memoranda transmitted with your memorandum of April 18, 1952.

I concur with the conclusion that the loan request be denied.

Stephen R. Wilson

Stephen R. Wilson

Enclosures 2

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

200 New Customhouse
Denver 2, Colorado

August 6, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2418, Deer Trail Mines, Piute County, Utah (Mercury). Recision of application for Defense Minerals Exploration Administration loan.

Enclosed are 8 copies of a memorandum report by J. William Hasler of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be denied, and the applicant has requested that the application for an exploration loan be cancelled.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Room 208, 222 So. West Temple
Salt Lake City 1, Utah
1 July 1952

Memorandum

To: A. H. Koschmann

From: J. William Hasler

Subject: DMEA Docket 2418, Deer Trail Mines, Piute County, Utah (Mercury). Recision of application for Defense Minerals Exploration Administration loan.

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The rocks in the mine are Jurassic limestone and quartzite which have been cut by a strong north-striking fault and to a lesser degree by east-striking faults.

Mercury was found in the Lucky Boy mine as tiemannite and ofronite, both selenides of mercury. The ore minerals are associated with calcite, barite, and pyrite and occur along beds of shaly limestone that have been cut by small east-striking faults.

The applicant proposed a program to explore for mercury ore by driving an adit at 300 feet and a crosscut at 1100 feet below the outcrop of the Lucky Boy fissure which, according to the applicant's geologic map, strikes S. 80° E. and dips 75° north and is exposed in the Lucky Boy Mine.

The examining geologists found no evidence of the Lucky Boy fissure on the surface, or in the Lucky Boy mine as was shown on applicant's map. No

mineralized fault or vein was found that would in any way justify the exploration work outlined by the applicant. There are no measured reserves of mercury ore on the property, and no reserves can be inferred. The mercury mineralization was scattered and sporadic.

It is concluded that the possibility of finding any quantity of mercury of commercial grade at the Deer Trail Mine is not good, and that the applicant's proposal is not founded on sound geologic evidence. It is therefore recommended that the application for a Defense Minerals Exploration Administration loan be denied.

The applicant, Mr. John W. Wilhelm, has requested that the application for the exploration loan be rescinded. The examining geologists agree with the applicant that the application for the exploration of mercury at the Deer Trail Mine not be considered.

/s/ J. William Hasler

cc: W. H. King
S. R. Wilson

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By J. W. Hasler,
Vard Johnson, and
R. L. Middleton

The Lucky Boy mercury property, Piute County, Utah, was examined by personnel of the Geological Survey and Bureau of Mines during May and June 1952. The property owner submitted an application for a loan of $113,205.75 to conduct exploration on the property. The present report appraises the feasibility of the loan request.

Rocks in the mine area are Jurassic limestone and quartzite cut by north- and east-striking faults. Mercury-selenium mineralization is found as small pods replacing shaly limestone. Ores, consisting of tiemannite, onofrite and cinnabar associated with barite and pyrite, have been mined from a pit 100 feet in diameter and 60 feet deep. Mineralization apparently is weaker at depth, for no ores were produced from the lowest workings in the pit area. No structural conditions exist to justify the program of drifting and crosscutting outlined by the applicant to cut the projection of mercury-selenium mineralization found at the surface.

It is recommended that the loan request be denied.

DEER TRAIL MINES
LUCKY BOY PROSPECT
PIUTE COUNTY, UTAH
DMEA-2418
Mercury

Engineering Report

By R. L. Middleton
Mining engineer
Bureau of Mines

DEER TRAIL MINES
LUCKY BOY PROSPECT
PIUTE COUNTY, UTAH

CONTENTS

	Page
Engineering report	
Introduction	2
Acknowledgments	2
Location and physical features	2
History and production	3
Ownership and extent	3
Description of the deposit	3
Minable ore reserves	4
Present status	4
Project proposals	4
Conclusions and recommendations	5

ILLUSTRATIONS

Fig. 1 Location map, Lucky Boy Prospect, Deer Trail Mines, Piute County, Utah.

INTRODUCTION

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Since the examination, the Deer Trail Mines management has rescinded the application for mineral exploration.

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The property, at an altitude of 8,000 feet, is located on the rugged, east slope of the Tushar Range. Because of the steep topography and shallow soil mantle, geologic formations are readily observed.

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surface by an open pit approximately 100 feet in diameter and reportedly 60 feet deep. Talus and soil has filled a large portion of the original pit, but it is reported a shaft located at the bottom of the pit was sunk about 40 feet on a north-south, nearly vertical vein 2 to 8 inches wide. Mineralization on the vertical vein apparently was weaker at depth, for there is no reported production from the lower working. There is no evidence of the existence of the north-south fissure in the area, but it is reasonable to assume that the reported vein was probably the channel which provided access for mineralizing solutions. Several inclined adits were driven northwest from the open pit, but the mineralization along the limestone horizon is insignificant. The ore minerals are onofrite, tiemannite, and cinnabar associated with barite and pyrite.

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The applicant has proposed exploration at the intersection of the Lucky Boy fissure with favorable limestone beds at a lower depth. The

proposed project consists of approximately 400 feet of drift from a surface location driven in such a manner as to intersect the projection of the Lucky Boy fissure at the 300-foot level, drifting approximately 500 feet from the Deer Trail development adit to intersect the projected vein at the 1,100-foot level, then raising on the Lucky Boy fissure from the lower level to the 300-foot level and to the surface.

CONCLUSIONS AND RECOMMENDATIONS

The exploratory project, as proposed by the applicant, is not feasible because there is no evidence an east-west fissure, referred to as the Lucky Boy, exists. The applicant stresses that samples taken on the property and assayed for mercury and selenium are consistently lower in quantities reported than the true content. Discussions with G. M. Potter and C. H. Schack of the Ore Dressing Section at the U. S. Bureau of Mines Experimental Station at Salt Lake City, Utah, reveal that there are no process difficulties in assaying the Lucky Boy samples and that the mercury and selenium determinations are accurate. The applicant has investigated several mercury occurrences on the property, using an ultra-violet lamp with a willemite screen, and from these results, he believes mercury is present in significant amounts. Unless the observer, while using the willemite screen test for mercury, is aware that the test is of a qualitative rather than a quantitative nature, the results can be misleading, and this fact seems to be true in this case.

It is recommended that loan be denied.

700 FILE COPY
SURNAME:

Ellis

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

JUN 23 1952

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2418
(Mercury - selenium)
Deer Trail Mines
Marysvale, Utah

Dear Mr. King:

Reference is made to our letter of April 14, 1952, transferring the above-captioned application to the Field Team for examination. According to your monthly report ending May 31, 1952, it is noted that the Bureau of Mines examined this property on May 16 and their report is in preparation, and that the Geological Survey was to have made their examination of the property on June 9.

However, we have received a letter dated June 14 from Mr. John W. Wilhelm, President of Deer Trail Mines, withdrawing this application. A copy of his letter is attached for your information.

Accordingly, we have advised Mr. Wilhelm that we are acceding to his wishes in the matter and are closing our docket. It is suggested that further action by your office on this application be suspended.

Sincerely yours,

(signed) FRANK E. JOHNSON
(JHB)
Chairman, Operating Committee

J.N. 6-23-52

Enclosure

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

S. M. Lemmon
Member, Geological Survey

GLAult/EWEllis/gla 6-19-52
cc to: Adm. Reading File
Operating Committee
✓Docket
Messrs. E.T.McKnight, Rm. 4204 GS
Ellis
Schmidt
Miss H.M. Meyer, Rm. 3623

DEER TRAIL MINES

MARYSVALE, UTAH

June 14, 1952

Director
Defense Minerals Exploration Administration
Washington 25, D.C.

Re: Docket No. D M E A -2418

Dear Sir:

This company hereby requests that its application for an Exploration Mining Loan to assist a proposed project on its "Lucky Boy" mercury (selenium) deposit, submitted under the above docket number, be withdrawn and cancelled as of this date.

Apparently we were laboring under the delusion that the elements contained in the ores were in critical short supply and that extraordinary efforts should be exerted to bring all possible deposits into the known reserves, and also that we have misinterpreted the intent of the laws creating your agency.

We do not desire to become involved in any program extraneous to our long range development scheme unless the need to do so is urgent or critical for national defense. Apparently it is not.

Our reasons for withdrawing the application could lead to controversy in which we have neither time nor the inclination to engage, therefore none will be offered.

We appreciate all favors and considerations shown.

Very truly yours,

DEER TRAIL MINES

BY John W. Wilhelm
President

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 18 1952

JWW/bp

700
FILE COPY
SURNAME:
Docket

Schmidt
Ellis
Meyer
Johnson

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

APR 14 1952

Mr. John W. Wilhelm, President
Deer Trail Mines,
Marysvale, Utah

Re: Docket No. DMEA-2418
(Mercury - selenium)
Deer Trail and Lucky Boy

Dear Mr. Wilhelm:

Your application for assistance in exploring your property in Piute County, Utah, under the above captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration and has been referred to Mr. J. H. Hast, Jr., Executive Officer, DMEA Field Team, Region IV, 224 New Customhouse Building, Denver 2, Colorado, for a field examination.

The Regional office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

(signed) FRANK E. JOHNSON

For Acting Administrator
Defense Minerals Exploration
Administration

FSSchmidt/gla 4-9-52
cc to: Adm. Reading File
✓Docket
Messrs. E.T.McKnight Rm. 4204 GS
Ellis
Schmidt
Miss H. M. Meyer, Rm. 3623
DMEA Field Team, Reg. IV (2)

700
FILE COPY
SURNAME:

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

APR 14 1952

Schmidt
Ellis
K Johnson

AIR MAIL

Mr. J.H. East
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2418
(Mercury - Selenium)
Deer Trail Mines
Marysvale, Utah

Dear Mr. East:

The captioned application is being referred to you for a field examination.

The work proposed is based on the assumption that a vein from 2 inches to 8 inches wide can be projected from shallow surface workings to the 500 ft. level and also to the 1100 ft. level. The proposal to do 500 ft. of drifting and crosscutting on the 1100 ft. level does not seem reasonable at this time. Whether the 400 ft. of work on the 500 ft. level is justified is referred to the Field Team.

The purpose of this work is to explore the intersection of the Lucky Boy vein with certain favorable beds of limestone at depth. This intersection can be obtained on the surface at a distance of 150 ft. to the east of the Lucky Boy pit, and it would be of advantage to have this intersection exposed for examination by trenching or bulldozing. It would be to the interest of the applicant to see that this is done before the field examination in order to avoid the possibility of making this the first step in a possible project. It is naturally recognized that this surface showing may be indicative rather than decisive.

One of the reasons for referring this to the Field is because of the fact that this combination of selenium and mercury is unique in this country. Selenium is worth only $3.00 a pound at present against $2.70 a pound for quicksilver. It would be necessary to separate them in order to market either one of them, which would involve some additional cost over standard practice. The fact that selenium is rare, and that the Signal Corps is finding increasing use for it, makes it important for us to ascertain what the possibilities are for a selenium discovery of commercial importance. The future of selenium is not known, but the indications are that it will be of increasing importance and value.

While there is no commercial plant in operation at present separating selenium from mercury, this is not regarded as a matter of too much importance in considering this application.

There has been considerable work done in the immediate district and it would be of geologic importance to know whether any similar narrow vein has been traced to any notable depth and the nature of its continuity as a precedent for what might be expected from exploration work in depth on this 2-inch to 8-inch Lucky Boy vein.

In the event that a project is recommended by the Field Team it would be helpful if the cost estimate could be so stated that the supplies could be allocated to the different workings in order to give a unit cost for each heading, rather than to simply distribute the labor, and then gather the supplies in one total.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee (JB)
Defense Minerals Exploration
Administration

APPROVED:

J. H. Hedges (JB)
For Bureau of Mines

T. P. Thayer (JB)
For Geological Survey

FSSchmidt/gla 4-9-52
cc to: Adm. Reading File
Docket
Messrs. E.T.McKnight Rm.4204 GSA
Miss H.M.Meyer, Rm3623
Ellis
Schmidt
Operating Committee

4/14

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

OFFICE REGION IV
OCT 17 1952
BUREAU OF MINES
DENVER, COLORADO

AIR MAIL

Mr. J.H. East
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2418
(Mercury - Selenium)
Deer Trail Mines
Marysvale, Utah

Dear Mr. East:

The captioned application is being referred to you for a field examination.

The work proposed is based on the assumption that a vein from 2 inches to 8 inches wide can be projected from shallow surface workings to the 300 ft. level and also to the 1100 ft. level. The proposal to do 500 ft. of drifting and crosscutting on the 1100 ft. level does not seem reasonable at this time. Whether the 400 ft. of work on the 300 ft. level is justified is referred to the Field Team.

The purpose of this work is to explore the intersection of the Lucky Boy vein with certain favorable beds of limestone at depth. This intersection can be obtained on the surface at a distance of 150 ft. to the east of the Lucky Boy pit, and it would be of advantage to have this intersection exposed for examination by trenching or bulldozing. It would be to the interest of the applicant to see that this is done before the field examination in order to avoid the possibility of making this the first step in a possible project. It is naturally recognized that this surface showing may be indicative rather than decisive.

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In the event that a project is recommended by the Field Team it would be helpful if the cost estimate could be so stated that the supplies could be allocated to the different workings in order to give a unit cost for each heading, rather than to simply distribute the labor, and then gather the supplies in one total.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED:

J. H. Hedges

For Bureau of Mines

T. P. Thayer

For Geological Survey

4/2/52 gla

IN REPLY REFER TO:

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

April 2, 1952

Memorandum

Re-DMEA-2418
Deer Trail Mines
near Marysvale, Utah
Exploration, $113,205.75
Quicksilver (selenium)

To: Mr. E. Wm. Ellis

From: Edwin T. McKnight

Subject: Geologic appraisal

This is an ably presented application which utilizes all existing geologic information to arrive at a proposal that at least has the merit of showing considerable geologic imagination. It may be a sincere attempt to locate a body of seleniferous quicksilver. It could also be an attempt to finance an expensive gold-silver exploration.

The quicksilver occurrence at the Lucky Boy property has been known since about 1878, and the known production of 213 flasks was made in 1886-7. According to applicant, in addition to the small quicksilver production from the Lucky Boy, over $3,000,000 gross production of gold, silver, and lead has been taken from adjoining claims. The current proposal is to explore the intersection of the Lucky Boy quicksilver feeding vein with the geologic horizon from which the precious metal production has come, and also its intersection with other overlying and underlying horizons.

The ore occurrence is described in U. S. Geological Survey Prof. Paper 111, pp. 550-52, from which the applicant has quoted. The quicksilver occurs chiefly as onofrite Hg (S,Se), but also in part as tiemannite (Hg Se), which replace gently dipping limestone essentially along a thin bedding. The ore seam is described as 2-8 inches thick. It extended no great distance from a narrow nearby vertical vein, supposed to be the feeding vein, which carried barite and some low grade tiemannite and cinnabar. Prof. Paper 111 says that this vein strikes N-S, whereas geologic maps and text accompanying the present application and prepared by one of the applicant firm, described as an "operator and consultant", shows this vein striking nearly E-W. Most of the past production was from an open cut in the block of ground where the vertical vein intersects the favorable stratigraphic horizon.

About 300 feet below the Lucky Boy quicksilver occurrence and at the contact of the limestones with an underlying thick quartzite is the horizon of the Deertrail mine, which lies north of the Lucky Boy. Ore from this mine was likewise a blanket replacement of limestone,

apparently associated with east-west fissures. The values are largely in gold and silver with accompanying lead, but the ore is reported to have contained a little cinnabar.

Applicant company has fallen heir to a deep level development tunnel 4300 feet long whose heading now lies about 300 feet NE of the old Lucky Boy workings but at a level about 1100 feet lower. This tunnel intersects limestone well below the thick quartzite forming the footwall of the Deertrail ore body.

Applicant's proposal is to

1. Drive a 400 foot adit from the surface to explore intersection of the Lucky Boy fissure with the horizon of the Deertrail mine at a level 300 feet below the old Lucky Boy mine.

2. Drive a "drift" from near the heading of the deep level tunnel to the approximate projection of the Lucky Boy fissure at that depth, and then crosscut in both directions to locate the fissure.

3. Raise on the fissure from the level of the deep tunnel to the old Lucky Boy workings in order to test the intersection of the fissure with all intervening horizons, some of which may be favorable for ore deposition.

The crux of this proposal is whether the Lucky Boy vein, described as a thin vein at the level of the old workings and whose strike is subject to disagreement, can be projected to any significant depth. The proposal to intersect the vein 1100 feet below the old workings is unrealistic and I believe it is even questionable whether it could be projected 300 feet below the old workings. However, the project is worth a field examination to consider specifically a possible modification of or substitute for item 1 of the applicant's proposal as listed above (=item 3a2 of page 2 of application). The field examination should determine, if possible, the strike and dip of the vein and appraise the possibility of projecting it to the favorable horizon at the top of the heavy quartzite, 300 feet below the old workings. If the applicant's mapping of the Lucky Boy vein is correct (drawing 51-1), the vein intersects the desired horizon on the outcrop 150 feet east of the old workings (and 100 feet lower), and it should be a relatively inexpensive project to investigate the vein throughout the stratigraphic interval down to the quartzite by surface trenching, rather than by the underground drifting and raising proposed by the applicant.

This proposal rates somewhat more consideration than it would normally rate as a quicksilver project on the outside chance that it

might carry significant selenium. Although selenium is not one of the elements subject to aid under the exploration program, the supply is nevertheless critical. This occurrence of mercury selenide is unique in the United States.

Pages 6 and 7 of the answers to Form MF-100 filed by applicant quotes results of selenium determination made by the Bureau of Mines, which is added reason for referring this application to the field.

Edwin T. McKnight

Edwin T. McKnight
Geologist

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

April 2, 1952

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Edwin T. McKnight

Edwin T. McKnight
Geologist

3/31/52 gh

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

March 31, 1952

Memorandum

To: E. W. Ellis

From: Helena M. Meyer

Subject: DMEA - 2418, Deer Trail Mines, Marysvale, Utah, Exploration Loan. (Mercury)

There has been no report on the Deer Trail Mines property prepared by the Bureau of Mines.

The project is well presented but for the mercury shown is not justified on the scale suggested. Desirability of the work, insofar as mercury is concerned, appears to be based largely on the premise that the mercury content is substantially greater than has been shown by tests of commercial assayers using accepted methods. This claim would have to be correct if the project is to get favorable consideration. The absence of a very critical mercury supply situation and the question of desirability of developing reserves that may not be amenable to current methods of treatment to recover the values present, raise doubt that the project should be approved.

In any event a field team examination should be made to check the claims made in the application, and to check on the proposed exploration plan.

It is proposed that the project, if approved, be placed on a step-by-step basis.

Some errors were detected in the arithmetic which should be checked.

Helena M. Meyer

HELENA M. MEYER

COPY

March 31, 1952

Memorandum

To: E. W. Ellis

From: Helena M. Meyer

Subject: DMEA - 2418, Deer Trail Mines, Marysvale, Utah, Exploration Loan. (Mercury)

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It is proposed that the project, if approved, be placed on a step-by-step basis.

Some errors were detected in the arithmetic which should be checked.

(Signed) Helena M. Meyer

HELENA M. MEYER

EXPLORATION

Subject: DMEA-2418
Re: Exploration Loan
Deer Trail and Lucky Boy
March 11, 1952

Mr. John W. Wilhelm
Deer Trail Mines
Marysvale, Utah

My dear Mr. Wilhelm:

This will acknowledge receipt of your application dated February 25, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2418 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-2418 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Acting Administrative Officer

7862

DMEA-3418

DEER TRAIL MINES
Marysvale, Utah

February 25, 1952

Mr. C. O. Mittendorf,
Acting Administrator,
Defense Minerals Exploration Administration,
Department of the Interior,
Washington 25, D. C.

Dear Sir:-

Attached please find our application for a mining exploration loan.

Forms MF-100(March 1951) and MF-103(Rev.June 1951) are completed herein to the best of our understanding of the requirements. If any information is lacking, or requires revision or clarification, please advise us and we will gladly comply with your requests.

Very truly yours,

DEER TRAIL MINES

By John W. Wilhelm
John W. Wilhelm, President.

REGIONAL DIRECTOR'S OFFICE
REGION IV
MAR 13 1952
BUREAU OF MINES
DENVER, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

DMEA-2418

APPLICATION FOR

MINING EXPLORATION LOAN

Pursuant to
Sections 302 and 303 and
Mineral Order No.5
of the
Defense production act of 1950.

Submitted to
Mr. C. O. MITTENDORF, ACTING ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
WASHINGTON 25, D.C.

by

DEER TRAIL MINES
Marysvale, Utah

103
1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2418
Metal or Mineral
Date Received 3-10-52
Amount $
Participation (Government %)

Name and address of applicant

DEER TRAIL MINES

Marysvale, Utah

Date February 25,1952

e already filed MF-100, give date filed (attached), type of assistance requested Exploration Loan,

DMA Docket Number (if available)

INSTRUCTIONS

neral Order 5, Regulations Governing Government fense Projects, before completing this application. ır copies each, of the signed application form, Gen- ical Data Form MF-100, and answers to questions l, to Defense Minerals Administration, Department rior, Washington 25, D. C., or to the nearest field office thereof, with your name and address on each e application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

ive a description of the real property that will be in any way involved in the exploration project, including any existing ine or operating property.

you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which ou are authorized to operate the property with each copy of your application.

ive the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

OTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

(2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

Vhat metals or minerals do you expect to find?

urnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find ommercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps howing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25,1952
(Date)

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—64067-2

1. (a) The Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, Deer Trail No.37 Fraction, Lot 6720, lode mining claims, a right of way through a development tunnel passing through the Hidden Treasure, Slope No.1, Lower Contact, Crest, and Portal unpatented lode mining claims, all located in Sections 11,12,13,& 14 of Tp. 28 S. R 4 W. S.L.M., Mt. Baldy Mining Dist. Piute Co., Utah, and dump and surface facilities at the portal of the development tunnel on the Portal lode claim located 600 feet South 71 deg. East from the ¼ corner common to Secs. 12 & 13.

(b) All property involved owned by applicant.

(c) Exploration under this project will be confined to the boundaries of the Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, and Deer Trail No.37 Fraction, Lot 6720, more particularly described as follows:

Beg. at U.S.M.M. No.1, from which Sec.Cor. common to Secs. 11,12,13 & 14 of Tp 28 S.,R 4 W., S.L.M. bears S 16 deg. 15 min. E., 2150 ft;

thence	S. 72	deg.	30	min.	W.,	650 ft.,
"	S. 17	"	30	"	E.,	600 ft.,
"	S. 72	"	30	"	W.,	280 ft.,
"	S. 17	"	30	"	E.,	25 ft.,
"	N. 77	"	54	"	E.,	400 ft.,
"	S. 23	"	20	"	E.,	750 ft.,
"	S. 16	"	30	"	E.,	90 ft.,
"	N. 72	"	30	"	E.,	150 ft.,
"	N. 17	"	30	"	W.,	25 ft.,
"	N. 72	"	30	"	W.,	600 ft.,
"	N. 17	"	30	"	W.,	1475 ft.,
"	S. 72	"	30	"	W.,	300 ft.,

to place of beginning, containing 29 acres, more or less.

2. (a) Tiemannite (selenide of mercury), Cinnabar (sulphide of mercury, and native (metallic) mercury. Ores of lead, zinc, and silver are expected incidental to the project.

(b) Country rock composed of interbedded quartzites,limestones, shales, and impure sandstones dipping gently to the north-west, cut by north-south series of fissures and faults, and by several east-west fissures and faults. Ore bodies are of the lime replacement type on the quartzite-lime contacts and in selected lime beds, at and near their junction with mineralizing fissures. (Reference is made to report under Para. 7, Form MF-100, and accompanying drawings)

3. (a) The purpose of this project is to explore the "Lucky Boy" fissure on two levels, 300 feet and 1100 feet below the surface, and the quartzite-lime contacts, and any favorable lime beddings at the conjunction with the fissure, to determine the existence, location, and value of replacement ore bodies of the type previously mined from the surface.

This exploration will require:

1. A drift and cross-cut totalling 500 feet on the 1100 foot level, run from the development tunnel to intercept the fissure at its intersection with the soluble lime exposed in the tunnel.

2. An adit drift of 400 feet run from the surface in the "Deer Trail" limes along the upper contact of the basal quartzite, to intercept the fissure at its junction with the contact.

3. An upraise of approximately 400 feet from the adit drift to the present "Lucky Boy" workings to explore the lime beddings between the two quartzite strata, and the lime-quartzite contacts of the upper quartzite member at their conjunction with the fissure.

4. an upraise of approximately 1000 feet from the drift on the 1100 foot level to the adit drift on the 300 foot level, to explore the unknown strata below the "basal" quartzite, and the lower contact of the basal quartzite at their conjunction with the fissure.

The total estimated cost of the project is $113,205.75

Tunnel maintainance	$3,600.00
New construction	2,100.00
Equipment purchase	4,350.00
Rental value, applicant's equipment	15,610.00
Direct Labor (inc.taxes,ins.)	46,337.26
Supplies	20,715.00
Direct overhead	10,182.06
Unseen & emergency expenses	10,263.43
	$ 113,205.75

(b) Project may be started immediately upon approval.

The estimated time for completion is 12 months.

4. Refer to accompanying drawings.

(Deer Trail Mines drawings Nos. 52-2 & 52-3)

5. Use of 4300 feet of fully equipped development tunnel, waste dumps, and ore bins to be maintained on an equal share basis with applicant. Estimated maintainance cost of $7200 per year divided one-half to project.----------$3,600.00

6. Construct compressor house at adit drift-$1500.00
Construct access road---------- 600.00
2,100.00

7.(a) None

(b) Gasoline engine for ventilating fan------ 600.00
Mechanical loader (adit drift)---------- 3000.00
Air hoist (raises)---------- 650.00
Small tools---------- 100.00
4,350.00

(c) Sullival 550 cf compressor w/110HP stationary Diesel engine, fully eqpt. Rental value $600/mo. to be shared ½ with applicant. 12 mos.@$300---------- 3600.00
Portable 220 cf compressor w/110HP gasoline engine, fully eqpt. for use in adit drift. 7 mos.@ $250/mo.---------- 1750.00
2 C-P drifter rock drills, cmplt w/accessories for use in tunnel. 5 mos. @ $150/mo.---------- 750.00
2 C-P stoper rock drills w/access.
1 for 5 mos.@ $50/mo.----$250
1 for 8 mos.@ $50/mo.--- 400
for use in raises.---------- 650.00
2 "jackhammer" rock drills for use in adit drift. 5 mos @ $100/mo.---------- 500.00
16 18 cf mine cars for use at tunnel level. 12 mo. @ $160/mo---------- 1920.00
2 16 cf mine cars for use in adit drift. 7 mos. @ $20/mo---------- 140.00
1 Mancha elec. trammer w/chg unit & battery service to be shared ½ with applicant @ $500/mo. 12 mo.@$250/mo------ 3000.00
1 drilling "jumbo" to be shared with applicant at tunnel level @ $300/mo. 5 mos. @ $150/mo.---------- 750.00
1 Eimco mechanical loader to be shared with applicant at tunnel level @$300/mo. 5 mos.@ $150/mo. ---------- 750.00
1 White 6x6 truck to be shared with applicant for utility use @$200/mo. 12 mos.@ $100/mo.---------- 1200.00
Shop & surface facilities.12 mo.@$50/mo.- 600.00
15,610.00

8. Labor; Pay schedule.

1 Mine supt.	@ $18.00/da.	($27.00/ OT da.)
4 Miners	@ 15.00/da.	($22.50/ OT da.)
8 Muckers	@ 12.50/da.	($18.75/ OT da.)
2 Utility men	@ 12.50/da.	($18.75/ OT da.)
2 Trammers	@ 15.00/da.	($22.50/ OT da.)

Labor cost breakdown;

a. Drift from tunnel level; total 500 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 55 days.

½ Supt.-----$ 9.00	86 reg. shifts---$6579.00	
1 Miner----- 15.00	16 OT shifts----- 1836.00	
2 Muckers--- 25.00	Labor 8415.00	
1 Trammer--- 15.00	11% Ins.OAB.SS---- 952.60	
Per shift $76.50		$ 9,367.60
(OT shift--$114.75)		

b. Adit drift from surface; total 400 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 44 days.

1 Miner-----$15.00	62 reg.shifts--- $2480.00	
2 Muckers--- 25.00	14 OT shifts---- 840.00	
Per shift $40.00	Labor 3320.00	
(OT shift--$60.00)	11% Ins.OAB.SS.---- 365.20	
		$ 3,685.20

c. Upraise from adit to surface; total 400 ft. @ 4 ft./shift; 100 shifts plus 20% delay; first 200 ft. on 2 shift basis, last 200 ft. on 1 shift basis; 90 days.

(see b. above)	100 reg.shifts--- $4000.00	
	20 OT shifts----- 1200.00	
	Labor 5200.00	
	11% Ins.OAB.SS.--- 572.00	
		$ 5,772.00

d. Upraise from tunnel level to adit drift; total 1000 ft. @ 4 ft./shift plus 20% delay; First 150 shifts on 2 shift basis, last 150 shifts on 1 shift basis; 225 days.

(see a. above)	252 reg.shifts-- $19278.00	
	48 OT shifts--- 5508.00	
	Labor 24768.00	
	11% Ins.OAB.SS. 2726.46	
		$27,512.46

Total direct labor---------- $46,337.26

9. Materials and supplies:

Explosives	$2820.00	
Drilling bits	2300.00	
Fuel (power)	1035.00	
Rails & accessories	4600.00	
Air pipe & fittings	1610.00	
Ventilating pipe	2450.00	
Timber*	5900.00	
		$20,715.00

*includes cost of standing and installing chutes. Most dimensions carried in applicant's stock

Direct overhead:

Engineering (½ of $600/mo)	$3600.00	
Assaying (20¢/ft)	460.00	
Accounting (½ of $110/wk)	2860.00	
Truck Driver(tool clk) (½)	2782.06	
Office & whse. exp. (½)	480.00	
		10,182.06
Unseen and reserve for emergencies 10% of entire project		10,291.43

10. (a) $28,301.44 (25% of total project)

(b) Yes.

11. Due to apparent local faulting the final direction and extent of the proposed drift from the tunnel level will be determined by geological conditions found as the drift progresses. It is suggested that the upraise described in 3 a. (4) be reappraised when actual conditions existing under the basal quartzite are fully understood.

It is not requested that returns from base metal ores encountered in the proposed exploration be excluded from this project.

MF-100
(ch 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. DMEA-2418

Date received 3-10-52

DEER TRAIL MINES
MARYSVALE, UTAH

Name and address of applicant

Date February 25,1952

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) ~~Necessity Certificate pursuant to the provisions of Sec. 124 (Amort-~~ 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.

5 GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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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 (not in production)

   If not in production or operation, estimated date when production will begin On completion of this project
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)
John W. Wilhelm Marysvale, Utah	President (D)	nil	25000	761,302	none	10,000	10,000
Nicholas B. Crawford 179 S 6th St. Tooele, Utah	Vice-Pres (D)	nil	8000	1,000	none	none	none
Earl C. Berry Grantsville, Utah	Sec-Treas (D)	nil	5000	1,000	none	none	none
Dwight L. King Judge Bld. Salt Lake City, Utah	(D)	nil	10000	250	none	none	none
Richard D. Ward 843 Tatnall, Wilmington, Del.	(D)	nil	50000	120,000	none	none	none
Daisy W. Henry Marysvale, Utah		----	50000	755,828	none	none	none
r. Charles W von Solbrig 400 S Keeler, Chicago, Ill		--	100000	470,000	none	none	none
	* Total		x x x x x	2,717,840	none	x x x x x	x x x x x

If more lines are needed continue on separate sheet. * Refer to continuation 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	$ 5,000,000	$ 4,725,000	$ 1.00	4,725,000	none
Preferred stock	$ none	$ none	$ none	none	none

*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.)	Crude Ore		Est, 1200 tons		Not in production
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)	Silver Lead zinc		Est. $10/ton		

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. Production rate will be governed by extent and metal content of ore bodies exposed by this project.

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. Please see form 103 Para. 2 c and accompanying diagrams

(*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)	none				
Indicated (probable)	No estimate (Reference is made to historical report and diagrams)				

(*c*) If placer: Does not apply

(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.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25,1952
(Date)

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

GENERAL TECHNICAL DATA

1. (a) The anticipated product from this project is mercury.

(b) The anticipated by-products are selenium (or selenium bearing sludges, precipitates, or condensates), and some incidental production of lead-zinc-silver ores (crude, concentrate, or sinter.)

2. The mining property involved in this application consists of the DeWitt Ferguson, Deer Trail, and Deer Trail No.37 Fraction Lode Claims, sometimes known as the Deer Trail and the Lucky Boy. The claims are a part of a large estate belonging to the applicant known as the Deer Trail Mine. The property is a lode mine and is not equipped with reduction facilities.

(a) There are 398 feet of vertical and inclined shafts.

(b) There are 445 linear feet of drifts and cross-cuts.

(c) There are 900 feet of development tunnel penetrating into the property (part of a development tunnel exceeding 4300 feet in length, and popularly known as the PTH tunnel.)

(d) An open stope approximately 100 feet in diameter, and said to be 60 feet deep is now partially filled with debris. Numerous dumps and caved portals indicate considerable amounts of underground workings which are not available for inspection.

All workings are dry.

Production capacity will be limited by the size of ore bodies encountered. Reduction facilities will be guaged to the extent and accessibility of the ore exposed.

3. (a) The nearest railroad shipping point is Marysvale, Utah, six miles by road to the north-east. The portal of the development tunnel from which part of the exploration is projected is five miles from Marysvale.

(b) Mt. Baldy Mining District.

(c) Township 28 South, Sections 11,12, & 13.Range 4 West, Salt Lake Meridian.

(d) Piute County, Utah

4. (a) Operations are now limited to tunnel maintainance.

General Technical Data (Continued)

4. (b) Applicant is owner of property through stock ownership of Deer Trail Mining Company. Titles are now being processed for transfer to applicant under consolidation agreement.

5. Property is not now in production.

Production can begin within ninety days after commercial ores are encountered.

6. (a) The applicant, until recently, was known as the Patrick T. Henry Corporation, and is successor through a series of consolidations to the Deer Trail Mining Company, the Carissa Gold Mines, Inc., the Patrick T. Henry Development Co., and others in the Marysvale region. The applicant and its predecessors have been responsible for the development and operation of properties in the Marysvale region since 1878, and have accomplished many thousands of feet of underground development. The death of the principal promoter caused the consolidations and the change of the corporate name.

(b) The company affairs and the proposed exploration will be directed by:

1. Mr. John W. Wilhelm, of Marysvale, Utah will function as general manager. Mr. Wilhelm has been financially interested in the applicant for 20 years. He is a successful business man and executive, and was associated with mid-western and eastern baking interests for 30 years.

2. The operating personnel will be under the direct supervision of Mr. Jay Sylvester, mine superintendent. Mr. Sylvester has had 25 years of active underground experience, and has held the position of General Superintendent over the Henry interests for the past 15 years. His intimate knowledge of local conditions and his demonstrated ability to organize working crews qualifies him for this responsibility.

3. Technical assistance and engineering will be furnished by Mr. N.B. Crawford, of Tooele, Utah. Mr. Crawford has had 30 years experience in many western mining districts as operator and consultant.

4. General and cost accounting will be performed by Mr. E.C. Berry, of Grantsville, Utah. Mr. Berry has had 30 years experience in mining and corporate

General Technical Data (Continued)

6. (b) (cont) accounting and management, and is accustomed to the requirements of project accounting.

5. Mr. Dwight L. King, an associate of the law firm of Rawlins, Wallace, Black, Roberts, and Black, Judge Bldg., Salt Lake City, Utah, will be consulted in all legal matters pertaining to the applicant.

6. Able advice on policy and financial matters will be available from Mr. Richard D. Ward, of Wilmington, Del., a successful business executive of 40 years experience.

7. Mr. I. N. Fehr, of Kansas City, Mo., a successful and active business executive of 25 years experience will be consulted on all policy and financial matters.

7. (a) The claims in this project were located in 1878 and 1879 and were first worked for their high grade silver ores. The discovery of mercury selenide was followed by an attempt to work for the mercury content. A crude retort was constructed and high grade ores (averaging 10%) were mined by crude methods, which were treated, yielding 213 flasks of mercury. All selenium, at that time (1886-7) worthless, was wasted. Desultory attempts to develop other ore bodies were made without results (See Drwg. 52-2). Mercury ores were reported in the silver workings of the Deer Trail, but no attempt was made to develop or explore the occurrences. No attempt has been made until this time to investigate the possibilities of the extension of the ores, nor the occurrence of other and similar deposits. A deep tunnel, designed to explore the formations of the claims adjoining on the north has reached a point under the project where it can be advantageously used in exploring the property at depth.

(b) The total production of the claims within the project is 213 flasks (16,188 lbs.) of mercury in the years 1886-7. Some production of high grade silver ores was made from the Deer Trail Claim prior to the time when production data was required. Over $3,000,000 gross production of gold, silver, and lead was extracted from the adjoining claims by the Deer Trail Mining Co. The Plutus Claim adjoining on the south is said to have produced 100 tons of gold, silver ores associated with Tellurium.

7.(c)

THE LUCKY BOY PROSPECT

"Lucky Boy" is the name by which a mercury deposit on the properties of Deer Trail Mines has been known for the past seventy-five years. The discovery was made on the DeWitt-Ferguson Claim, but for physical and geological reasons the Deer Trail Claim, and the Deer Trail No.37 Fraction will be considered as part of the "Lucky Boy" as a group. These claims have been part of the Deer Trail property since the original discovery, but due to their structural isolation and peculiar mineralization they will be considered separately.

The "Lucky Boy" group consists of:

Deer Trail Lode Lot 42A
DeWitt Ferguson Lode Lot 52A
Deer Trail No.37 Fraction Lot 6720

patented mining claims containing 29 acres, more or less, in the Mt. Baldy Mining District, Piute County, Utah. Patent surveys and plats are recorded in the office of the Surveyor General in Salt Lake City, Utah, and title reference is made to the Piute County Recorder's Office, at Junction, Utah.

The claims adjoin and are surrounded by other claims that are part of the estate of Deer Trail Mines, with the exception of the Pluto Claim to the south-west which is privately owned. The Deer Trail mine lying immediately north of the claims has a long record of production. The Pluto claim is said to have produced some high grade gold and silver telluride ores.

The property lies six miles,south-west from the town of Marysvale,tje nearest railroad point, and is connected by three miles of dirt road and three miles of paved high way. The claims are at the base of the east flank of Mt. Baldy in a precipitious region, rising from 7500 to 8300 feet above sea level across the width of the claims, some 950 feet horizontally. Vegetation is sparse, consisting of mountain laurel and scrub junipers.

There is no water on the property. The nearest water available for milling or domestic use is from springs about one mile north, or from Cottonwood Creek, two miles south.

HISTORY:

The early history of the Deer Trail and the "Lucky Boy" (Dewitt Ferguson) claims is interwoven with the romantic legends of the area. The Deer Trail claim was discovered in 1878 and worked for some time as a high grade (horn silver) silver mine. The "Lucky Boy" at first was considered a galena property, but was discovered to contain massive and crystaline Tiemannite, the selenide of mercury. The early

production of mercury was accomplished by the use of crude retorts, and mining by the crudest of methods. These methods served to produce 213 flasks of mercury, without any saving of the valuable selenium and tellurium contained in the ores. Remains of a wooden chute remain on the side hill, and pieces and fragments of the ore are scattered along its course. Nails remaining in the boards are all hand wrought. Ancient history is better described in the excerpt from U.S.G.S. Prof. Paper 111:

"Adjoining the Deer Trail on the west, and owned by the same interests, is an interesting property known as the Lucky Boy. Selenide of mercury is found here and was worked for quicksilver, at one time yielding as high as 60%. The total production is estimated at 213 flasks, valued at $8,308."
(--V.C. Heikes)

"The quicksilver deposit of the Lucky Boy mine has been described by H. D. McCaskey as follows:

"The Lucky Boy quicksilver prospect was briefly described as follows by J.E. Clayton, president of the Salt Lake Mining Institute, in a letter to J. Brush of the Sheffield Scientific School, dated October 6, 1884.

"The mine is situated about 5 miles southwest of Marysvale, 200 miles south of Salt Lake City. It is on the east face of a mountain slope and near a profound fault extending north and south. To the east are eruptive rocks, including porphry and trachyte. Underlying the ore beds to the west is a quartzite of unknown thickness, over this about 400 feet of gray limestone, and in contact between these the Deer Trail vein is situated, carrying gold, silver, lead, and a little copper. In the upper portions of the limestone the selenide of mercury is found in a bed of shaley limestone 15 to 20 feet thick. The vein has been traced north and south about 100 feet along the outcrop and dips into the mountain at an angle of about 15 degrees below the horizon. The ore occurs in masses intermixed with the shaley limestone, crystals being very rare. The accompanying minerals are barite, oxide of Manganese, quartz, and calcite. The ore bed is overlain by a yellowish sandy lime shale carrying sub-carboniferous fossils.

"The locality was visited by the writer in 1910.*** The workings of the Lucky Boy mine just north of Cottonwood Canyon form a bowl shaped open cut about 100 feet in diameter and 60 feet deep, a drift to the west about 80 feet into the mountain follows the gently dipping bedding planes, a tortuous winze from the face of the drift turning back and coming out on the mountain side about 50 feet below the open cut, and another shaft at the bottom of the open cut, now filled with broken rock, reported to have been sunk about 40 feet on a north-south narrow nearly vertical vein carrying barite and some cinnabar. The cinnabar ore, it seems, was of low grade, and the commercial ore was mainly of Onofrite and to a smaller degree of Tiemannite, the sulpho-selenide

and the selenide of mercury, which were found in a deposit from 2 to 8 inches thick, following the bedding planes and impregnating the impure dark-gray limestone. Tiemannite was reported also from the barite vein, and the fissure may have been the channel for the ore solutions. The intersection of this fissure with the bedding plane would be about where the open cut is now, and indeed much of the original deposit has probably been eroded away. The deposit was evidently superficial, for the life of the operations was short, the total output small, and is now difficult to find even samples of ore in the workings. The occurrence is of especial interest as being the only deposit of the selenides of mercury in the country ever worked on a commercial scale,however small. The reduction was by two retorts operated in Cottonwood Canyon to the south of the mine. In the Deer Trail gold mine, several hundred feet below the Lucky Boy, and along the gently westward dipping bedding planes at the quartzite and limestone boundary, cinnabar with pyrite was reported in a small lens. The deposition of quicksilver minerals in both properties may have been due to solutions arising through the same vertical north-south fissures thought to extend parallel to the great Sevier Fault, and may have been localized by the transverse fissures similar to those known elsewhere in the district.

"McCaskey estimates the production of mercury from the mine as 213 flasks, valued at $8,308".

----------"The relations of the replacement deposits, as the Deer Trail and the Lucky Boy, are not so clearly indicated. These two deposits apparently are related in origin for mercury, which is the principal metal of the Lucky Boy, is also present in the Deer Trail. The Deer Trail ore, like that of most of the veins, runs high in silver and gold as compared with base metals; much of it, indeed, is valuable solely for its precious metals. In the Lucky Boy mine the mercury is present as the selenide and sulpho-selenide, and the gold ores contain both selenium and tellurium. The presence of the relatively rare element seleniumin both types of deposits suggests a close relationship, as does the presence of mercury in both."

In U.S.G.S. Monographs Vol.Vlll, Quicksilver Deposits of the Pacific Slope, 1888, Becker states that the ore beds of the Lucky Boy were four feet thick, and that the average value of the ore was 10% mercury, and that the production took place in 1886 and 1887.

After some desultory attempts to develop further ore bodies the mine was abandoned and no further work has been attempted.

The recent penetration of the deep tunnel into territory directly below the Deer Trail, and to within

300 feet of the territory directly below the Lucky Boy opens a new avenue of exploration at depth.

GEOLOGY:

The area embraced by the claims lies entirely in sedimentary formations, probably of Jurrassic origin, near the crest of a gentle anticline. A great fault has exposed the north-western slopes of the fold by the subsidence of the eastern half of the structure, thus exhibiting the types, thickness, and positions of the strata. Minor faults occur at irregular intervals on the face of the mountain parallel to the great north-south break, and are noticeable as abrupt escarpment faces, and by a slight variation in the dip of the beds. There are two principal cross faults of nearly east-west trend crossing the property. The movement on these breaks is both vertical and lateral, and probably developed along lines of weakness formed by the original folding. These faults are represented by gorges filled with rubble.

There is at least one system of mineralizing fissures having a north 20 west trend which have a filling of quartz and feldspar,usually pyritic. These fissures are considered by some to be the original mineralizers, as the known ore deposits have been found along the strike of the system. The faulting has displaced the fissuring system indicating that the fissures are older than the disturbance causing the faulting.

The claims are fairly well defined by the two faulting systems into one block of sedimentaries about 1400 feet in length and 1000 feet in width. A geologic collumn of this block can be reconstructed from 8300 feet down to 6800 feet above sea level, thus:

8300 to 8100	Yellow to buff heavy bedded calcareous sandstones. Slight mineralization on contact.
8100 to 8060	Thin bedded grey and blue limes.
8060 to 8040	Uncompacted yellow sand (non-conformity?)
8040 to 8000	Lucky Boy formation.Thin bedded shaley limes,mercury minerals near fissures. Lucky Boy ore body on contact.
8000 to 7970	Fine grained quartzite Mercury minerals on contact.
7970 to 7720	Grey and blue limes
7720 to 7700	Deer Trail limes. White dolomite with intense mineralization. Original ore discovery

7700 to ?	"Basal" quartzite. Lower portion hidden. Estimated to be 400 ft. thick.
? to 6908	Unexplored. This horizon is not exposed in the district.
6908 to 6900	Grey soluble lime. Heavily mineralized.
6900 to 6840	Buff calcareous sandstone.
6840 to 6800	Dark green calcareous shales
6800 to ?	Blue limes.

MINERALIZATION:

It has always been accepted that the mineralization of the Deer Trail had its origin in the quartz-feldspar (adularia) filled fissures, and that the soluble beds lying on the top of the quartzite absorbed the rising solutions and were replaced by the metal content, followed by a period of movement with subsequent leaching and oxidizing by decending surface waters, and that there was but one mineral epoch.

A close study of the minerals in the Lucky Boy and surrounding claims indicates the possibility of a second and significant invasion of minerals, probably as gasses or disolved gasses, at a time later than the major faulting. The presence of mercury, selenium, and tellurium as trace elements in the ore bodies of the surrounding properties, both in the replacement deposits, and in the fault fissures, without any definite relation to either precious or base metal content may indicate a secondary invasion of metaliferous fumes or solutions using the fault planes as avenues. It is entirely possible selenous and tellurous acids are responsible for the irregular distribution of the precious and base values.

The mineralization of the Deer Trail limes on the upper contact of the basal quartzite is apparently a concentration of silver values in the chloride and/or the telluride combinations, with occasional concentrations of lead confined the bedding planes of the lime, at and near the junction with the north-south fissuring system. At one place this bedding is cut by an east-west fissure that leads through the Lucky Boy workings above. This fissure dips sharply to the north and shows slight movement. The filling is barite, quartz and gouge, with occasional crystals resembling tourmaline.

The Lucky Boy limes, and the limestone members immediately below the narrow quartzite stratum are impregnated with mercury and selenium minerals imparting a bluish black color and producing a peculiar type of dendrite on the cleavages. The mineralization is most intense near the intersection of the east-west fissure with one of the north-south breaks. From the location of the open pit, and the description of the ore body mined from it, the deposit must have been in the immediate area of the intersection on the top of the quartzite.

Three general samples taken from three separate lime beddings at points thirty to forty feet west of the perimeter of the Lucky Boy stope were assayed by Deason & Nichols, of Salt Lake City, with the following results:

Gold	Silver	Mercury
.005 oz.	Trace	0.11%
.008 oz.	0.20 oz.	0.08%
none	Trace	0.02%

Several hundred qualitative tests were made in the drifts by heating samples in an ultra-violet ray before a fluorescent willemite screen. By these tests is was ascertained that the minerals followed down the bedding planes from a central point, gradually becoming diffused as the distance increased from the source. It is also obvious that the assays quoted above were erroneous when compared to the density of the fumes given off from the samples, but they do serve to indicate that the mercury mineralization is independent from the precious metals.

Three specimens taken from the bedding immediately below the quartzite, about fifty feet south of the fissure were analysed by the Bureau of Mines for selenium with the resulting percentages;

0.0011% 0.0005% 0.0002%

Two specimens taken from the deep tunnel (sta. 3450) and three from the No. 1 Deer Trail tunnel, on the Green Eyed Monster Claim of adjoining property yielded the following Selenium values:.007%; .049%; .002%; .037%; .006%. The widespread distribution of selenium is indicative of the strength of the mineralization which introduced it to the vein system. As selenium is highly corrosive, it probably was the principal solvent and final reagent of a second mineralizing epoch.

A spectrographic analysis was made by the Bureau of Mines on a specimen of the lime from the ore body at the 3450 station of the deep tunnel. The lime is of dark gray color and contains occasional crystals of galena, pyrite, and a copper mineral resembling sooty chalcocite. The elements present as indicated by the spectograph are: Copper, silver, gold, magnesium, calcium, Zinc, Cadmium, Aluminum, titanium, silicon, lead, vanadium, manganese, iron, and nickel. The metalloids and mercury do not react with sufficient positiveness to be reported. The wet analysis for selenium in this specimen was .049% . No analysis was made for sulphur nor mercury.

A specimen of black hematite ore from the same station showed the following elements to be present by the spectrograph; copper, silver, gold, magnesium, calcium, zinc, cadmium, aluminum, titanium, silicon, lead, vanadium, arsenic, antimony, manganese, iron, and cobalt. The ore is mostly a massive black hematite resembling specularite. An analysis indicates the selenium content to be .007%

From the physical appearance of the ore body, and the wide variation of the selenium content, it appears that the hematite is probably the iron in the original ore deposition, oxidized in place, and the surrounding lime containing the ore minerals represents the mineral epoch when the selenium (mercury) was introduced.

The presence of selenium in appreciable quantities at great distances from the Lucky Boy deposit could be an indication of the intensity of the mineralization of the Lucky Boy.

CONCLUSIONS:

In considering the potential and inferred value of the Lucky Boy prospect as a possible mercury (selenium) mine all of the above data must be studied for their relationship to the original deposit.

The history of the property and a study of the perimeter of the original stope indicates that the ores were a replacement of favorable lime beds lying on the top of a quartzite member, and that the minerals were introduced into the beds through fissures and fractures of the formation. The intensity of the mineralization is attested to by the presence of the active solvent (selenium) and the impregnation of the surrounding limes with mercury for a considerable distance from the original stope. The principal avenue of introduction was through the fissure known as the "Lucky Boy".

The geological collumn indicates conditions similar to the "Lucky Boy" could exist in at least three locations between the tunnel level and the present workings.

None of the prospecting work in the Lucky Boy workings has approached the quartzite contact, and very little was done in the vicinity of the Lucky Boy fissure. It is possible that additional deposits of similar type may be dicovered along the same contact.

The underside of the quartzite has been prospected only by a short incline at a point distant from the fissure. Mercury and selenium are present in trace quantities. Near the outcrop of the fissure on the lower contact there is an exposure of from 8 to 10 inches of ore containing a quantity of recognizable crystals of tiemannite, and what appears to be coloradoite.

The Deer Trail limes lying on the lower (basal) quartzite have been proven to be very soluble and receptive to

replacement by metallic ores. It is reasonable to believe that this contact at and near its intersection with the Lucky Boy fissure would contain an important deposit of the same type of minerals found above in the narrower and less soluble beds. The persistent reports of "cinnabar" in the ores of the Deer Trail, and the presence of a small amount of cinnabar in the quartzite under the contact adds to the inference of a body of mercury ore on the contact.

The depth of the "basal" quartzite is still conjectural, but it is definitely known that limes do exist under it, as proven by the deep tunnel. The presence of selenium is definitely proven in the soluble beds of the deep limes at great distances from the projection of the Lucky Boy fissure. It must be considered as a possibility that the lower contact of the basal quartzite will yield a body of the same type of Mercury ores found above, and expected to be found on the upper contact in the Deer Trail limes.

It is also possible that selected beds between the contacts could be impregnated with the mercury (selenium) minerals in sufficient quantity to be mined as ore.

The property can be prospected for all of its possibilities by a drift from the 4200 station of the deep tunnel, an adit drift along the upper contact of the basal quartzite, and upraises from the tunnel to the adit, and from the adit to the present Lucky Boy workings. Both drifts to be run to intersect the downward projection of the Lucky Boy fissure, and both raises to be run on the fissure, or near it.

The writer considers the exploration of the Lucky Boy as a legitimate and desirable endeavor, particularly at this time, when mercury and selenium are so urgently needed for defense purposes.

RECOMMENDATIONS:

It is recommended that the exploration work mentioned above be placed on a project basis with a high priority in development planning.

It is further recommended that equipment be secured to test samples on or near the property, and that personnel be trained in chemical manipulation of a process suitable to the ores of the property. It is apparent that the accepted methods used by commercial assayers is not suitable to the ores of the property, probably due to the presence of selenium and tellurium. The corrosive action of these elements on the amalgamating element used apparently prevents an accurate determination of the mercury contents. As an example, a specimen chosen at random, from one of the samples mentioned above, was analysed privately, as a favor to the writer, by a method worked out in the labor-

atory of a private firm. The results of the private analysis were: Mercury 1.82%, Selenium .42%, and Tellurium .14%. The sample from which the specimen was extracted yielded .02% Mercury by a commercial assayer, after several attempts, with the practical destruction of his apparatus. Commercial assayers in the Salt Lake City region will not attempt to analyse samples for selenium.

It is suggested that government assistance be sought in the financing of the proposed exploration work so that the work may be expedited, and not interfere with the projected development ahead of the deep tunnel.

Respectfully submitted,

Nicholas B. Crawford

NICHOLAS B. CRAWFORD.

13. Highway 89 from Marysvale, closest rail and residence center, 3 miles to junction with dirt road. Dirt road 2 miles to portal of tunnel. Dirt road 1 mile from portal of tunnel to claims. Dirt roads will require simple grading. Additional 600 feet of road will be constructed to adit drift site.

14. Applicant has good and sufficient water rights in Cottonwood Creek, 2 miles south of project, and in a spring, one mile north of the project. Water for this project will be hauled from Cottonwood Creek.

15. Power requirements will be met from one stationary Caterpillar Diesel engine, 110 HP, and from one portable Mercury 110 HP gasoline engine. Purchase of one stationary 30 HP gasoline engine is contemplated for ventilation purposes.

16. Recent operations limited to tunnel maintainance. Payroll not representative.

17. Buildings available for use on project:

    2 Frame dwelling houses.
    Metal compressor house, shop, tool and supply shed, mine office (assay) bldg. 300 feet snow shed, and 150 ton ore bin, all in good condition.

    Equipment described under Form MF-103 (7-c) attached.

18. Applicant contemplates carrying on company financed project in deep development tunnel simultaneously with this project, therefore supervision, engineering, direct overhead, tunnel maintainance, and joint use of certain articles of equipment are to be divided evenly. The project is a deviation from the applicant's long term program of development. The assistance sought in this application will expedite the exploration for mercury (selenium), which would probably not be carried out for some time in the future, in the normal course of applicant's program.

8. (continued from Form MF-100)

H. M. Wilhelm Marysvale, Utah	$10000	359,460 (shares)
I. N. Fehr 4050 Penn. Kansas City Mo.	$200000	249,000 "

(totals shown on Form MF-100)

DME A-2418

DEER TRAIL MINES
Marysvale, Utah

February 25, 1952

Mr. C. O. Mittendorf,
Acting Administrator,
Defense Minerals Exploration Administration,
Department of the Interior,
Washington 25, D. C.

Dear Sir:-

Attached please find our application for a mining exploration loan.

Forms MF-100(March 1951) and MF-103(Rev.June 1951) are completed herein to the best of our understanding of the requirements. If any information is lacking, or requires revision or clarification, please advise us and we will gladly comply with your requests.

Very truly yours,

DEER TRAIL MINES

By John W. Wilhelm
John W. Wilhelm, President.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

DMEA-2418

APPLICATION FOR

MINING EXPLORATION LOAN

Pursuant to
Sections 302 and 303 and
Mineral Order No.5
of the
Defense production act of 1950.

Submitted to
Mr. C. O. MITTENDORF, ACTING ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
WASHINGTON 25, D.C.

by

DEER TRAIL MINES
Marysvale, Utah

DMEA-2418

DEER TRAIL MINES
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DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

:-103
e 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATI

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2418
Metal or Mineral
Date Received 3-10-52
Amount $
Participation (Government %)

Name and address of applicant

DEER TRAIL MINES

MARYSVALE, UTAH

Date February 25,1952

ave already filed MF-100, give date filed (attached), type of assistance requested Exploration Loan,

DMA Docket Number (if available)

INSTRUCTIONS

Mineral Order 5, Regulations Governing Government Defense Projects, before completing this application. four copies each, of the signed application form, Gen- echnical Data Form MF-100, and answers to questions ified, to Defense Minerals Administration, Department Interior, Washington 25, D. C., or to the nearest field ive office thereof, with your name and address on each f the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

(2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

RECEIVED
MAR 10 1952

) What metals or minerals do you expect to find?

) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

16—64067-2

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25, 1952
(Date)

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—64067-2

1. (a) The Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, Deer Trail No.37 Fraction, Lot 6720, lode mining claims, a right of way through a development tunnel passing through the Hidden Treasure, Slope No.1, Lower Contact, Crest, and Portal unpatented lode mining claims, all located in Sections 11,12,13,& 14 of Tp. 28 S. R 4 W. S.L.M., Mt. Baldy Mining Dist. Piute Co., Utah, and dump and surface facilities at the portal of the development tunnel on the Portal lode claim located 600 feet South 71 deg. East from the ¼ corner common to Secs. 12 & 13.

(b) All property involved owned by applicant.

(c) Exploration under this project will be confined to the boundaries of the Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, and Deer Trail No.37 Fraction, Lot 6720, more particularly described as follows:

Beg. at U.S.M.M. No.1, from which Sec.Cor. common to Secs. 11,12,13 & 14 of Tp 28 S.,R 4 W., S.L.M. bears S 16 deg. 15 min. E., 2150 ft;

thence	S. 72	deg.	30	min.W.,	650 ft.,
"	S. 17	"	30	" E.,	600 ft.,
"	S. 72	"	30	" W.,	280 ft.,
"	S. 17	"	30	" E.,	25 ft.,
"	N. 77	"	54	" E.,	400 ft.,
"	S. 23	"	20	" E.,	750 ft.,
"	S. 16	"	30	" E.,	90 ft.,
"	N. 72	"	30	" E.,	150 ft.,
"	N. 17	"	30	" W.,	25 ft.,
"	N. 72	"	30	" W.,	600 ft.,
"	N. 17	"	30	" W.,	1475 ft.,
"	S. 72	"	30	" W.,	300 ft.,

to place of beginning, containing 29 acres, more or less.

2. (a) Tiemannite (selenide of mercury), Cinnabar (sulphide of mercury, and native (metallic) mercury. Ores of lead, zinc, and silver are expected incidental to the project.

(b) Country rock composed of interbedded quartzites,limestones, shales, and impure sandstones dipping gently to the north-west, cut by north-south series of fissures and faults, and by several east-west fissures and faults. Ore bodies are of the lime replacement type on the quartzite-lime contacts and in selected lime beds, at and near their junction with mineralizing fissures. (Reference is made to report under Para. 7, Form MF-100, and accompanying drawings)

3. (a) The purpose of this project is to explore the "Lucky Boy" fissure on two levels, 300 feet and 1100 feet below the surface, and the quartzite-lime contacts, and any favorable lime beddings at the conjunction with the fissure, to determine the existence, location, and value of replacement ore bodies of the type previously mined from the surface.

This exploration will require:

1. A drift and cross-cut totalling 500 feet on the 1100 foot level, run from the development tunnel to intercept the fissure at its intersection with the soluble lime exposed in the tunnel.

2. An adit drift of 400 feet run from the surface in the "Deer Trail" limes along the upper contact of the basal quartzite, to intercept the fissure at its junction with the contact.

3. An upraise of approximately 400 feet from the adit drift to the present "Lucky Boy" workings to explore the lime beddings between the two quartzite strata, and the lime-quartzite contacts of the upper quartzite member at their conjunction with the fissure.

4. an upraise of approximately 1000 feet from the drift on the 1100 foot level to the adit drift on the 300 foot level, to explore the unknown strata below the "basal" quartzite, and the lower contact of the basal quartzite at their conjunction with the fissure.

The total estimated cost of the project is $113,205.75

Tunnel maintainance	$3,600.00
New construction	2,100.00
Equipment purchase	4,350.00
Rental value, applicant's equipment	15,610.00
Direct Labor (inc.taxes,ins.)	46,337.26
Supplies	20,715.00
Direct overhead	10,182.06
Unseen & emergency expenses	10,263.43
	$ 113,205.75

(b) Project may be started immediately upon approval.

The estimated time for completion is 12 months.

4. Refer to accompanying drawings.

(Deer Trail Mines drawings Nos. 52-2 & 52-3)

5. Use of 4300 feet of fully equipped development tunnel, waste dumps, and ore bins to be maintained on an equal share basis with applicant. Estimated maintainance cost of $7200 per year divided one-half to project.----------$3,600.00

6. Construct compressor house at adit drift-$1500.00
Construct access road---------- 600.00
2,100.00

7.(a) None

(b) Gasoline engine for ventilating fan------ 600.00
Mechanical loader (adit drift)---------- 3000.00
Air hoist (raises)---------- 650.00
Small tools---------- 100.00
4,350.00

(c) Sullival 550 cf compressor w/110HP stationary Diesel engine, fully eqpt. Rental value $600/mo. to be shared ½ with applicant. 12 mos.@$300---------- 3600.00
Portable 220 cf compressor w/110HP gasoline engine, fully eqpt. for use in adit drift. 7 mos.@ $250/mo.---------- 1750.00
2 C-P drifter rock drills, cmplt w/accessories for use in tunnel. 5 mos. @ $150/mo.---------- 750.00
2 C-P stoper rock drills w/access.
1 for 5 mos.@ $50/mo.----$250
1 for 8 mos.@ $50/mo.--- 400
for use in raises.---------- 650.00
2 "jackhammer" rock drills for use in adit drift. 5 mos @ $100/mo.---------- 500.00
16 18 cf mine cars for use at tunnel level. 12 mo. @ $160/mo---------- 1920.00
2 16 cf mine cars for use in adit drift. 7 mos. @ $20/mo---------- 140.00
1 Mancha elec. trammer w/chg unit & battery service to be shared ½ with applicant @ $500/mo. 12 mo.@$250/mo------ 3000.00
1 drilling "jumbo" to be shared with applicant at tunnel level @ $300/mo. 5 mos. @ $150/mo.---------- 750.00
1 Eimco mechanical loader to be shared with applicant at tunnel level @$300/mo. 5 mos.@ $150/mo. ---------- 750.00
1 White 6x6 truck to be shared with applicant for utility use @$200/mo. 12 mos.@ $100/mo.---------- 1200.00
Shop & surface facilities.12 mo.@$50/mo.- 600.00
15,610.00

8. Labor; Pay schedule.

1 Mine supt.	@ $18.00/da.	($27.00/ OT da.)
4 Miners	@ 15.00/da.	($22.50/ OT da.)
8 Muckers	@ 12.50/da.	($18.75/ OT da.)
2 Utility men	@ 12.50/da.	($18.75/ OT da.)
2 Trammers	@ 15.00/da.	($22.50/ OT da.)

Labor cost breakdown;

a. Drift from tunnel level; total 500 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 55 days.

½ Supt.-----$ 9.00	86 reg. shifts---$6579.00	
1 Miner----- 15.00	16 OT shifts----- 1836.00	
2 Muckers--- 25.00	Labor 8415.00	
1 Trammer--- 15.00	11% Ins.OAB.SS---- 952.60	
Per shift $76.50		$ 9,367.60
(OT shift--$114.75)		

b. Adit drift from surface; total 400 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 44 days.

1 Miner-----$15.00	62 reg.shifts--- $2480.00	
2 Muckers--- 25.00	14 OT shifts---- 840.00	
Per shift $40.00	Labor 3320.00	
(OT shift--$60.00)	11% Ins.OAB.SS.---- 365.20	
		$ 3,685.20

c. Upraise from adit to surface; total 400 ft. @ 4 ft./shift; 100 shifts plus 20% delay; first 200 ft. on 2 shift basis, last 200 ft. on 1 shift basis; 90 days.

(see b. above)	100 reg.shifts--- $4000.00	
	20 OT shifts----- 1200.00	
	Labor 5200.00	
	11% Ins.OAB.SS.--- 572.00	
		$ 5,772.00

d. Upraise from tunnel level to adit drift; total 1000 ft. @ 4 ft./shift plus 20% delay; First 150 shifts on 2 shift basis, last 150 shifts on 1 shift basis; 225 days.

(see a. above)	252 reg.shifts-- $19278.00	
	48 OT shifts--- 5508.00	
	Labor 24768.00	
	11% Ins.OAB.SS. 2726.46	
		$27,512.46

Total direct labor---------- $46,337.26

9. Materials and supplies:

Explosives	$2820.00	
Drilling bits	2300.00	
Fuel (power)	1035.00	
Rails & accessories	4600.00	
Air pipe & fittings	1610.00	
Ventilating pipe	2450.00	
Timber*	5900.00	
		$20,715.00

*includes cost of standing and installing chutes. Most dimensions carried in applicant's stock

Direct overhead:

Engineering (½ of $600/mo)	$3600.00	
Assaying (20¢/ft)	460.00	
Accounting (½ of $110/wk)	2860.00	
Truck Driver(tool clk) (½)	2782.06	
Office & whse. exp. (½)	480.00	
		10,182.06
Unseen and reserve for emergencies 10% of entire project		10,291.43

10. (a) $28,301.44 (25% of total project)

(b) Yes.

11. Due to apparent local faulting the final direction and extent of the proposed drift from the tunnel level will be determined by geological conditions found as the drift progresses. It is suggested that the upraise described in 3 a. (4) be reappraised when actual conditions existing under the basal quartzite are fully understood.

It is not requested that returns from base metal ores encountered in the proposed exploration be excluded from this project.

F-103
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UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2418
Metal or Mineral
Date Received 3-10-52
Amount $
Participation (Government %)

Name and address of applicant

DEER TRAIL MINES

MARYSVALE, UTAH

Date February 25, 1952

ve already filed MF-100, give date filed (attached), type of assistance requested Exploration Loan,

DMA Docket Number (if available)

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DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
RECEIVED
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What metals or minerals do you expect to find?

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6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

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   (*c*) Furnished by you

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9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25, 1952
(Date)

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—64067-2

1. (a) The Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, Deer Trail No.37 Fraction, Lot 6720, lode mining claims, a right of way through a development tunnel passing through the Hidden Treasure, Slope No.1, Lower Contact, Crest, and Portal unpatented lode mining claims, all located in Sections 11,12,13,& 14 of Tp. 28 S. R 4 W. S.L.M., Mt. Baldy Mining Dist. Piute Co., Utah, and dump and surface facilities at the portal of the development tunnel on the Portal lode claim located 600 feet South 71 deg. East from the ¼ corner common to Secs. 12 & 13.

(b) All property involved owned by applicant.

(c) Exploration under this project will be confined to the boundaries of the Deer Trail, Lot 42A, DeWitt Ferguson, Lot 52A, and Deer Trail No.37 Fraction, Lot 6720, more particularly described as follows:

Beg. at U.S.M.M. No.1, from which Sec.Cor. common to Secs. 11,12,13 & 14 of Tp 28 S.,R 4 W., S.L.M. bears S 16 deg. 15 min. E., 2150 ft;

thence	S. 72	deg.	30	min.W.,	650 ft.,
"	S. 17	"	30	" E.,	600 ft.,
"	S. 72	"	30	" W.,	280 ft.,
"	S. 17	"	30	" E.,	25 ft.,
"	N. 77	"	54	" E.,	400 ft.,
"	S. 23	"	20	" E.,	750 ft.,
"	S. 16	"	30	" E.,	90 ft.,
"	N. 72	"	30	" E.,	150 ft.,
"	N. 17	"	30	" W.,	25 ft.,
"	N. 72	"	30	" W.,	600 ft.,
"	N. 17	"	30	" W.,	1475 ft.,
"	S. 72	"	30	" W.,	300 ft.,

to place of beginning, containing 29 acres, more or less.

2. (a) Tiemannite (selenide of mercury), Cinnabar (sulphide of mercury, and native (metallic) mercury. Ores of lead, zinc, and silver are expected incidental to the project.

(b) Country rock composed of interbedded quartzites,limestones, shales, and impure sandstones dipping gently to the north-west, cut by north-south series of fissures and faults, and by several east-west fissures and faults. Ore bodies are of the lime replacement type on the quartzite-lime contacts and in selected lime beds, at and near their junction with mineralizing fissures. (Reference is made to report under Para. 7, Form MF-100, and accompanying drawings)

3. (a) The purpose of this project is to explore the "Lucky Boy" fissure on two levels, 300 feet and 1100 feet below the surface, and the quartzite-lime contacts, and any favorable lime beddings at the conjunction with the fissure, to determine the existence, location, and value of replacement ore bodies of the type previously mined from the surface.

This exploration will require:

1. A drift and cross-cut totalling 500 feet on the 1100 foot level, run from the development tunnel to intercept the fissure at its intersection with the soluble lime exposed in the tunnel. a 1100' depth

2. An adit drift of 400 feet run from the surface in the "Deer Trail" limes along the upper contact of the basal quartzite, to intercept the fissure at its junction with the contact. b 300' depth

3. An upraise of approximately 400 feet from the adit drift to the present "Lucky Boy" workings to explore the lime beddings between the two quartzite strata, and the lime-quartzite contacts of the upper quartzite member at their conjunction with the fissure. (b)

4. an upraise of approximately 1000 feet from the drift on the 1100 foot level to the adit drift on the 300 foot level, to explore the unknown strata below the "basal" quartzite, and the lower contact of the basal quartzite at their conjunction with the fissure.

The total estimated cost of the project is $113,205.75

Tunnel maintainance	$3,600.00
New construction	2,100.00
Equipment purchase	4,350.00
Rental value, applicant's equipment	15,610.00
Direct Labor (inc.taxes,ins.)	46,337.26
Supplies	20,715.00
Direct overhead	10,182.06
Unseen & emergency expenses	10,263.43
	$ 113,205.75

(b) Project may be started immediately upon approval.

The estimated time for completion is 12 months.

4. Refer to accompanying drawings.

(Deer Trail Mines drawings Nos. 52-2 & 52-3)

5. Use of 4300 feet of fully equipped development tunnel, waste dumps, and ore bins to be maintained on an equal share basis with applicant. Estimated maintainance cost of $7200 per year divided one-half to project.----------$3,600.00

6. Construct compressor house at adit drift-$1500.00
Construct access road---------- 600.00
2,100.00

7.(a) None

(b) Gasoline engine for ventilating fan------ 600.00
Mechanical loader (adit drift)---------- 3000.00
Air hoist (raises)---------- 650.00
Small tools---------- 100.00
4,350.00

(c) Sullival 550 cf compressor w/110HP stationary Diesel engine, fully eqpt. Rental value $600/mo. to be shared ½ with applicant. 12 mos.@$300---------- 3600.00
Portable 220 cf compressor w/110HP gasoline engine, fully eqpt. for use in adit drift. 7 mos.@ $250/mo.---------- 1750.00
2 C-P drifter rock drills, cmplt w/accessories for use in tunnel. 5 mos. @ $150/mo.---------- 750.00
2 C-P stoper rock drills w/access.
1 for 5 mos.@ $50/mo.----$250
1 for 8 mos.@ $50/mo.--- 400
for use in raises.---------- 650.00
2 "jackhammer" rock drills for use in adit drift. 5 mos @ $100/mo.---------- 500.00
16 18 cf mine cars for use at tunnel level. 12 mo. @ $160/mo---------- 1920.00
2 16 cf mine cars for use in adit drift. 7 mos. @ $20/mo---------- 140.00
1 Mancha elec. trammer w/chg unit & battery service to be shared ½ with applicant @ $500/mo. 12 mo.@$250/mo------ 3000.00
1 drilling "jumbo" to be shared with applicant at tunnel level @ $300/mo. 5 mos. @ $150/mo.---------- 750.00
1 Eimco mechanical loader to be shared with applicant at tunnel level @$300/mo. 5 mos.@ $150/mo. ---------- 750.00
1 White 6x6 truck to be shared with applicant for utility use @$200/mo. 12 mos.@ $100/mo.---------- 1200.00
Shop & surface facilities.12 mo.@$50/mo.- 600.00
15,610.00

8. Labor; Pay schedule.

1 Mine supt.	@ $18.00/da.	($27.00/ OT da.)
4 Miners	@ 15.00/da.	($22.50/ OT da.)
8 Muckers	@ 12.50/da.	($18.75/ OT da.)
2 Utility men	@ 12.50/da.	($18.75/ OT da.)
2 Trammers	@ 15.00/da.	($22.50/ OT da.)

Labor cost breakdown;

a. Drift from tunnel level; total 500 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 55 days.

½ Supt.-----$ 9.00	86 reg. shifts---$6579.00	
1 Miner----- 15.00	16 OT shifts----- 1836.00	
2 Muckers--- 25.00	Labor 8415.00	
1 Trammer--- 15.00	11% Ins.OAB.SS---- 952.60	
Per shift $76.50		$ 9,367.60
(OT shift--$114.75)		

b. Adit drift from surface; total 400 ft. @ 5 ft./shift plus 10% delay on 2 shift basis; 44 days.

1 Miner-----$15.00	62 reg.shifts--- $2480.00	
2 Muckers--- 25.00	14 OT shifts---- 840.00	
Per shift $40.00	Labor 3320.00	
(OT shift--$60.00)	11% Ins.OAB.SS.---- 365.20	
		$ 3,685.20

c. Upraise from adit to surface; total 400 ft. @ 4 ft./shift; 100 shifts plus 20% delay; first 200 ft. on 2 shift basis, last 200 ft. on 1 shift basis; 90 days.

(see b. above)	100 reg.shifts--- $4000.00	
	20 OT shifts----- 1200.00	
	Labor 5200.00	
	11% Ins.OAB.SS.--- 572.00	
		$ 5,772.00

d. Upraise from tunnel level to adit drift; total 1000 ft. @ 4 ft./shift plus 20% delay; First 150 shifts on 2 shift basis, last 150 shifts on 1 shift basis; 225 days.

(see a. above)	252 reg.shifts-- $19278.00	
	48 OT shifts--- 5508.00	
	Labor 24768.00	
	11% Ins.OAB.SS. 2726.46	
		$27,512.46

Total direct labor---------- $46,337.26

9. Materials and supplies:

Explosives	$2820.00	
Drilling bits	2300.00	
Fuel (power)	1035.00	
Rails & accessories	4600.00	
Air pipe & fittings	1610.00	
Ventilating pipe	2450.00	
Timber*	5900.00	
		$20,715.00

*includes cost of standing and installing chutes. Most dimensions carried in applicant's stock

Direct overhead:

Engineering (½ of $600/mo)	$3600.00	
Assaying (20¢/ft)	460.00	
Accounting (½ of $110/wk)	2860.00	
Truck Driver(tool clk) (½)	2782.06	
Office & whse. exp. (½)	480.00	
		10,182.06
Unseen and reserve for emergencies 10% of entire project		10,291.43

11320575

10. (a) $28,301.44 (25% of total project)

(b) Yes.

11. Due to apparent local faulting the final direction and extent of the proposed drift from the tunnel level will be determined by geological conditions found as the drift progresses. It is suggested that the upraise described in 3 a. (4) be reappraised when actual conditions existing under the basal quartzite are fully understood.

It is not requested that returns from base metal ores encountered in the proposed exploration be excluded from this project.

Form MF-100
(March 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. DMEA-2418

Date received 3-10-52

DEER TRAIL MINES
MARYSVALE, UTAH

Name and address of applicant

Date February 25,1952

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) ~~Necessity Certification Deduction of Internal Revenue Code 1950~~ (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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.

5

GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

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 (not in production)

   If not in production or operation, estimated date when production will begin On completion of this project
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)
John. W. Wilhelm Marysvale, Utah	President (D)	nil	25000	761,302	none	10,000	10,000
Nicholas B. Crawford 179 S 6th St, Tooele, Utah	Vice-Pres (D)	nil	8000	1,000	none	none	none
Earl C. Berry Grantsville, Utah	Sec-Treas (D)	nil	5000	1,000	none	none	none
Dwight L. King Judge Bldg. Salt Lake City, Utah	(D)	nil	10000	250	none	none	none
Richard D. Ward, 843 Tatnall Wilmington, Del.	(D)	nil	50000	120,000	none	none	none
Daisy W. Henry Marysvale, Utah		nil	50000	755,828	none	none	none
Dr. Charles W. von Solbrig 6400 S Keeler, Chicago, Ill		nil	100000	470,000	none	none	none
* Total			x x x x x	2,717,840	none	x x x x x	x x x x x

If more lines are needed continue on separate sheet. * Refer to continuation 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	$5,000,000	$4,725,000	$1.00	4,725,000	none
Preferred stock	$ none	$ none	$ none	none	none

*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.)	Crude Ore		Est. 1200 tons		Not in production
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)	Silver Lead zinc		Est. $10/ton		

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. Production rate will be governed by extent and metal content of ore bodies exposed by this project.

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. Please see Form 103 Para 2 c. and accompanying diagrams.

APPLICATION FOR

MINING EXPLORATION LOAN

Pursuant to
Sections 302 and 303 and
Mineral Order No.5
of the
Defense production act of 1950.

Submitted to
Mr. C. O. MITTENDORF, ACTING ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
WASHINGTON 25, D.C.

by

DEER TRAIL MINES
Marysvale, Utah

GENERAL TECHNICAL DATA

1. (a) The anticipated product from this project is mercury.

(b) The anticipated by-products are selenium (or selenium bearing sludges, precipitates, or condensates), and some incidental production of lead-zinc-silver ores (crude, concentrate, or sinter.)

2. The mining property involved in this application consists of the DeWitt Ferguson, Deer Trail, and Deer Trail No.37 Fraction Lode Claims, sometimes known as the Deer Trail and the Lucky Boy. The claims are a part of a large estate belonging to the applicant known as the Deer Trail Mine. The property is a lode mine and is not equipped with reduction facilities.

(a) There are 398 feet of vertical and inclined shafts.

(b) There are 445 linear feet of drifts and cross-cuts.

(c) There are 900 feet of development tunnel penetrating into the property (part of a development tunnel exceeding 4300 feet in length, and popularly known as the PTH tunnel.)

(d) An open stope approximately 100 feet in diameter, and said to be 60 feet deep is now partially filled with debris. Numerous dumps and caved portals indicate considerable amounts of underground workings which are not available for inspection.

All workings are dry.

Production capacity will be limited by the size of ore bodies encountered. Reduction facilities will be guaged to the extent and accessibility of the ore exposed.

3. (a) The nearest railroad shipping point is Marysvale, Utah, six miles by road to the north-east. The portal of the development tunnel from which part of the exploration is projected is five miles from Marysvale.

(b) Mt. Baldy Mining District.

(c) Township 28 South, Sections 11,12, & 13.Range 4 West, Salt Lake Meridian.

(d) Piute County, Utah

4. (a) Operations are now limited to tunnel maintainance.

General Technical Data (Continued)

4. (b) Applicant is owner of property through stock ownership of Deer Trail Mining Company. Titles are now being processed for transfer to applicant under consolidation agreement.

5. Property is not now in production.

Production can begin within ninety days after commercial ores are encountered.

6. (a) The applicant, until recently, was known as the Patrick T. Henry Corporation, and is successor through a series of consolidations to the Deer Trail Mining Company, the Carissa Gold Mines, Inc., the Patrick T. Henry Development Co., and others in the Marysvale region. The applicant and its predecessors have been responsible for the development and operation of properties in the Marysvale region since 1878, and have accomplished many thousands of feet of underground development. The death of the principal promoter caused the consolidations and the change of the corporate name.

(b) The company affairs and the proposed exploration will be directed by:

1. Mr. John W. Wilhelm, of Marysvale, Utah will function as general manager. Mr. Wilhelm has been financially interested in the applicant for 20 years. He is a successful business man and executive, and was associated with mid-western and eastern baking interests for 30 years.

2. The operating personnel will be under the direct supervision of Mr. Jay Sylvester, mine superintendent. Mr. Sylvester has had 25 years of active underground experience, and has held the position of General Superintendent over the Henry interests for the past 15 years. His intimate knowledge of local conditions and his demonstrated ability to organize working crews qualifies him for this responsibility.

3. Technical assistance and engineering will be furnished by Mr. N.B. Crawford, of Tooele, Utah. Mr. Crawford has had 30 years experience in many western mining districts as operator and consultant.

4. General and cost accounting will be performed by Mr. E.C. Berry, of Grantsville, Utah. Mr. Berry has had 30 years experience in mining and corporate

General Technical Data (Continued)

6. (b) (cont) accounting and management, and is accustomed to the requirements of project accounting.

5. Mr. Dwight L. King, an associate of the law firm of Rawlins, Wallace, Black, Roberts, and Black, Judge Bldg., Salt Lake City, Utah, will be consulted in all legal matters pertaining to the applicant.

6. Able advice on policy and financial matters will be available from Mr. Richard D. Ward, of Wilmington, Del., a successful business executive of 40 years experience.

7. Mr. I. N. Fehr, of Kansas City, Mo., a successful and active business executive of 25 years experience will be consulted on all policy and financial matters.

7. (a) The claims in this project were located in 1878 and 1879 and were first worked for their high grade silver ores. The discovery of mercury selenide was followed by an attempt to work for the mercury content. A crude retort was constructed and high grade ores (averaging 10%) were mined by crude methods, which were treated, yielding 213 flasks of mercury. All selenium, at that time (1886-7) worthless, was wasted. Desultory attempts to develop other ore bodies were made without results (See Drwg. 52-2). Mercury ores were reported in the silver workings of the Deer Trail, but no attempt was made to develop or explore the occurrences. No attempt has been made until this time to investigate the possibilities of the extension of the ores, nor the occurrence of other and similar deposits. A deep tunnel, designed to explore the formations of the claims adjoining on the north has reached a point under the project where it can be advantageously used in exploring the property at depth.

(b) The total production of the claims within the project is 213 flasks (16,188 lbs.) of mercury in the years 1886-7. Some production of high grade silver ores was made from the Deer Trail Claim prior to the time when production data was required. Over $3,000,000 gross production of gold, silver, and lead was extracted from the adjoining claims by the Deer Trail Mining Co. The Plutus Claim adjoining on the south is said to have produced 100 tons of gold, silver ores associated with Tellurium.

Form MF-100
(March 1951)

Deer Trail Mines
Marysvale, Utah

7.(c)

THE LUCKY BOY PROSPECT

"Lucky Boy" is the name by which a mercury deposit on the properties of Deer Trail Mines has been known for the past seventy-five years. The discovery was made on the DeWitt-Ferguson Claim, but for physical and geological reasons the Deer Trail Claim, and the Deer Trail No.37 Fraction will be considered as part of the "Lucky Boy" as a group. These claims have been part of the Deer Trail property since the original discovery, but due to their structural isolation and peculiar mineralization they will be considered separately.

The "Lucky Boy" group consists of:

Deer Trail Lode Lot 42A
DeWitt Ferguson Lode Lot 52A
Deer Trail No.37 Fraction Lot 6720

patented mining claims containing 29 acres, more or less, in the Mt. Baldy Mining District, Piute County, Utah. Patent surveys and plats are recorded in the office of the Surveyor General in Salt Lake City, Utah, and title reference is made to the Piute County Recorder's Office, at Junction, Utah.

The claims adjoin and are surrounded by other claims that are part of the estate of Deer Trail Mines, with the exception of the Pluto Claim to the south-west which is privately owned. The Deer Trail mine lying immediately north of the claims has a long record of production. The Pluto claim is said to have produced some high grade gold and silver telluride ores.

The property lies six miles,south-west from the town of Marysvale,tje nearest railroad point, and is connected by three miles of dirt road and three miles of paved high way. The claims are at the base of the east flank of Mt. Baldy in a precipitious region, rising from 7500 to 8300 feet above sea level across the width of the claims, some 950 feet horizontally. Vegetation is sparse, consisting of mountain laurel and scrub junipers.

There is no water on the property. The nearest water available for milling or domestic use is from springs about one mile north, or from Cottonwood Creek, two miles south.

HISTORY:

The early history of the Deer Trail and the "Lucky Boy" (Dewitt Ferguson) claims is interwoven with the romantic legends of the area. The Deer Trail claim was discovered in 1878 and worked for some time as a high grade (horn silver) silver mine. The "Lucky Boy" at first was considered a galena property, but was discovered to contain massive and crystaline Tiemannite, the selenide of mercury. The early

production of mercury was accomplished by the use of crude retorts, and mining by the crudest of methods. These methods served to produce 213 flasks of mercury, without any saving of the valuable selenium and tellurium contained in the ores. Remains of a wooden chute remain on the side hill, and pieces and fragments of the ore are scattered along its course. Nails remaining im the boards are all hand wrought. Ancient history is better described in the excerpt from U.S.G.S. Prof. Paper 111:

"Adjoining the Deer Trail on the west, and owned by the same interests, is an interesting property known as the Lucky Boy. Selenide of mercury is found here and was worked for quicksilver, at one time yielding as high as 60%. The total production is estimated at 213 flasks, valued at $8,308."
(--V.C. Heikes)

"The quicksilver deposit of the Lucky Boy mine has been described by H. D. McCaskey as follows:

"The Lucky Boy quicksilver prospect was briefly described as follows by J.E. Clayton, president of the Salt Lake Mining Institute, in a letter to J. Brush of the Sheffield Scientific School, dated October 6, 1884.

"The mine is situated about 5 miles southwest of Marysvale, 200 miles south of Salt Lake City. It is on the east face of a mountain slope and near a profound fault extending north and south. To the east are eruptive rocks, including porphry and trachyte. Underlying the ore beds to the west is a quartzite of unknown thickness, over this about 400 feet of gray limestone, and in contact between these the Deer Trail vein is situated, carrying gold,silver, lead, and a little copper. In the upper portions of the limestone the selenide of mercury is found in a bed of shaley limestone 15 to 20 feet thick. The vein has been traced north and south about 100 feet along the outcrop and dips into the mountain at an angle of about 15 degrees below the horizon. The ore occurs in masses intermixed with the shaley limestone, crystals being very rare. The accompanying minerals are barite, oxide of Manganese, quartz, and calcite. The ore bed is overlain by a yellowish sandy lime shale carrying sub-carboniferous fossils.

"The locality was visited by the writer in 1910.*** The workings of the Lucky Boy mine just north of Cottonwood Canyon form a bowl shaped open cut about 100 feet in diameter and 60 feet deep, a drift to the west about 80 feet into the mountain follows the gently dipping bedding planes, a tortuous winze from the face of the drift turning back and coming out on the mountain side about 50 feet below the open cut, and another shaft at the bottom of the open cut, now filled with broken rock, reported to have been sunk about 40 feet on a north-south narrow nearly vertical vein carrying barite and some cinnabar. The cinnabar ore, it seems,was of low grade, and the commercial ore was mainly of Onofrite and to a smaller degree of Tiemannite, the sulpho-selenide

and the selenide of mercury, which were found in a deposit from 2 to 8 inches thick, following the bedding planes and impregnating the impure dark-gray limestone. Tiemannite was reported also from the barite vein, and the fissure may have been the channel for the ore solutions. The intersection of this fissure with the bedding plane would be about where the open cut is now, and indeed much of the original deposit has probably been eroded away. The deposit was evidently superficial, for the life of the operations was short, the total output small, and is now difficult to find even samples of ore in the workings. The occurrence is of especial interest as being the only deposit of the selenides of mercury in the country ever worked on a commercial scale,however small. The reduction was by two retorts operated in Cottonwood Canyon to the south of the mine. In the Deer Trail gold mine, several hundred feet below the Lucky Boy, and along the gently westward dipping bedding planes at the quartzite and limestone boundary, cinnabar with pyrite was reported in a small lens. The deposition of quicksilver minerals in both properties may have been due to solutions arising through the same vertical north-south fissures thought to extend parallel to the great Sevier Fault, and may have been localized by the transverse fissures similar to those known elsewhere in the district.

"McCaskey estimates the production of mercury from the mine as 213 flasks, valued at $8,308".

----------"The relations of the replacement deposits, as the Deer Trail and the Lucky Boy, are not so clearly indicated. These two deposits apparently are related in origin for mercury, which is the principal metal of the Lucky Boy, is also present in the Deer Trail. The Deer Trail ore, like that of most of the veins, runs high in silver and gold as compared with base metals; much of it, indeed, is valuable solely for its precious metals. In the Lucky Boy mine the mercury is present as the selenide and sulpho-selenide, and the gold ores contain both selenium and tellurium. The presence of the relatively rare element seleniumin both types of deposits suggests a close relationship, as does the presence of mercury in both."

In U.S.G.S. Monographs Vol.Vlll, Quicksilver Deposits of the Pacific Slope, 1888, Becker states that the ore beds of the Lucky Boy were four feet thick, and that the average value of the ore was 10% mercury, and that the production took place in 1886 and 1887.

After some desultory attempts to develop further ore bodies the mine was abandoned and no further work has been attempted.

The recent penetration of the deep tunnel into territory directly below the Deer Trail, and to within

300 feet of the territory directly below the Lucky Boy opens a new avenue of exploration at depth.

GEOLOGY:

The area embraced by the claims lies entirely in sedimentary formations, probably of Jurrassic origin, near the crest of a gentle anticline. A great fault has exposed the north-western slopes of the fold by the subsidence of the eastern half of the structure, thus exhibiting the types, thickness, and positions of the strata. Minor faults occur at irregular intervals on the face of the mountain parallel to the great north-south break, and are noticeable as abrupt escarpment faces, and by a slight variation in the dip of the beds. There are two principal cross faults of nearly east-west trend crossing the property. The movement on these breaks is both vertical and lateral, and probably developed along lines of weakness formed by the original folding. These faults are represented by gorges filled with rubble.

There is at least one system of mineralizing fissures having a north 20 west trend which have a filling of quartz and feldspar,usually pyritic. These fissures are considered by some to be the original mineralizers, as the known ore deposits have been found along the strike of the system. The faulting has displaced the fissuring system indicating that the fissures are older than the disturbance causing the faulting.

The claims are fairly well defined by the two faulting systems into one block of sedimentaries about 1400 feet in length and 1000 feet in width. A geologic collumn of this block can be reconstructed from 8300 feet down to 6800 feet above sea level, thus:

8300 to 8100	200	Yellow to buff heavy bedded calcareous sandstones. Slight mineralization on contact.
8100 to 8060	40	Thin bedded grey and blue limes.
8060 to 8040	20	Uncompacted yellow sand (non-conformity?)
8040 to 8000	40	Lucky Boy formation.Thin bedded shaley limes,mercury minerals near fissures. Lucky Boy ore body on contact.
8000 to 7970	30	Fine grained quartzite Mercury minerals on contact.
7970 to 7720	250	Grey and blue limes
7720 to 7700	20	Deer Trail limes. White dolomite with intense mineralization. Original ore discovery
	600	

7700 to ?	400?	"Basal" quartzite. Lower portion hidden. Estimated to be 400 ft. thick.
? to 6908		Unexplored. This horizon is not exposed in the district.
6908 to 6900	8	Grey soluble lime. Heavily mineralized.
6900 to 6840	60	Buff calcareous sandstone.
6840 to 6800	40	Dark green calcareous shales
6800 to ?		Blue limes.

MINERALIZATION:

It has always been accepted that the mineralization of the Deer Trail had its origin in the quartz-feldspar (adularia) filled fissures, and that the soluble beds lying on the top of the quartzite absorbed the rising solutions and were replaced by the metal content, followed by a period of movement with subsequent leaching and oxidizing by decending surface waters, and that there was but one mineral epoch.

A close study of the minerals in the Lucky Boy and surrounding claims indicates the possibility of a second and significant invasion of minerals, probably as gasses or disolved gasses, at a time later than the major faulting. The presence of mercury, selenium, and tellurium as trace elements in the ore bodies of the surrounding properties, both in the replacement deposits, and in the fault fissures, without any definite relation to either precious or base metal content may indicate a secondary invasion of metaliferous fumes or solutions using the fault planes as avenues. It is entirely possible selenous and tellurous acids are responsible for the irregular distribution of the precious and base values.

The mineralization of the Deer Trail limes on the upper contact of the basal quartzite is apparently a concentration of silver values in the chloride and/or the telluride combinations, with occasional concentrations of lead confined the bedding planes of the lime, at and near the junction with the north-south fissuring system. At one place this bedding is cut by an east-west fissure that leads through the Lucky Boy workings above. This fissure dips sharply to the north and shows slight movement. The filling is barite, quartz and gouge, with occasional crystals resembling tourmaline.

The Lucky Boy limes, and the limestone members immediately below the narrow quartzite stratum are impregnated with mercury and selenium minerals imparting a bluish black color and producing a peculiar type of dendrite on the cleavages. The mineralization is most intense near the intersection of the east-west fissure with one of the north-south breaks. From the location of the open pit, and the description of the ore body mined from it, the deposit must have been in the immediate area of the intersection on the top of the quartzite.

Three general samples taken from three separate lime beddings at points thirty to forty feet west of the perimeter of the Lucky Boy stope were assayed by Deason & Nichols, of Salt Lake City, with the following results:

Gold	Silver	Mercury
.005 oz.	Trace	0.11%
.008 oz.	0.20 oz.	0.08%
none	Trace	0.02%

Several hundred qualitative tests were made in the drifts by heating samples in an ultra-violet ray before a fluorescent willemite screen. By these tests is was ascertained that the minerals followed down the bedding planes from a central point, gradually becoming diffused as the distance increased from the source. It is also obvious that the assays quoted above were erroneous when compared to the density of the fumes given off from the samples, but they do serve to indicate that the mercury mineralization is independent from the precious metals.

Three specimens taken from the bedding immediately below the quartzite, about fifty feet south of the fissure were analysed by the Bureau of Mines for selenium with the resulting percentages;

0.0011% 0.0005% 0.0002%

Two specimens taken from the deep tunnel (sta. 3450) and three from the No. 1 Deer Trail tunnel, on the Green Eyed Monster Claim of adjoining property yielded the following Selenium values:.007%; .049%; .002%; .037%; .006%. The widespread distribution of selenium is indicative of the strength of the mineralization which introduced it to the vein system. As selenium is highly corrosive, it probably was the principal solvent and final reagent of a second mineralizing epoch.

A spectrographic analysis was made by the Bureau of Mines on a specimen of the lime from the ore body at the 3450 station of the deep tunnel. The lime is of dark gray color and contains occasional crystals of galena, pyrite, and a copper mineral resembling sooty chalcocite. The elements present as indicated by the spectograph are: Copper, silver, gold, magnesium, calcium, Zinc, Cadmium, Aluminum, titanium, silicon, lead, vanadium, manganese, iron, and nickel. The metalloids and mercury do not react with sufficient positiveness to be reported. The wet analysis for selenium in this specimen was .049% . No analysis was made for sulphur nor mercury.

A specimen of black hematite ore from the same station showed the following elements to be present by the spectrograph; copper, silver, gold, magnesium, calcium, zinc, cadmium, aluminum, titanium, silicon, lead, vanadium, arsenic, antimony, manganese, iron, and cobalt. The ore is mostly a massive black hematite resembling specularite. An analysis indicates the selenium content to be .007%

From the physical appearance of the ore body, and the wide variation of the selenium content, it appears that the hematite is probably the iron in the original ore deposition, oxidized in place, and the surrounding lime containing the ore minerals represents the mineral epoch when the selenium (mercury) was introduced.

The presence of selenium in appreciable quantities at great distances from the Lucky Boy deposit could be an indication of the intensity of the mineralization of the Lucky Boy.

CONCLUSIONS:

In considering the potential and inferred value of the Lucky Boy prospect as a possible mercury (selenium) mine all of the above data must be studied for their relationship to the original deposit.

The history of the property and a study of the perimeter of the original stope indicates that the ores were a replacement of favorable lime beds lying on the top of a quartzite member, and that the minerals were introduced into the beds through fissures and fractures of the formation. The intensity of the mineralization is attested to by the presence of the active solvent (selenium) and the impregnation of the surrounding limes with mercury for a considerable distance from the original stope. The principal avenue of introduction was through the fissure known as the "Lucky Boy".

The geological collumn indicates conditions similar to the "Lucky Boy" could exist in at least three locations between the tunnel level and the present workings.

None of the prospecting work in the Lucky Boy workings has approached the quartzite contact, and very little was done in the vicinity of the Lucky Boy fissure. It is possible that additional deposits of similar type may be dicovered along the same contact.

The underside of the quartzite has been prospected only by a short incline at a point distant from the fissure. Mercury and selenium are present in trace quantities. Near the outcrop of the fissure on the lower contact there is an exposure of from 8 to 10 inches of ore containing a quantity of recognizable crystals of tiemannite, and what appears to be coloradoite.

The Deer Trail limes lying on the lower (basal) quartzite have been proven to be very soluble and receptive to

replacement by metallic ores. It is reasonable to believe that this contact at and near its intersection with the Lucky Boy fissure would contain an important deposit of the same type of minerals found above in the narrower and less soluble beds. The persistent reports of "cinnabar" in the ores of the Deer Trail, and the presence of a small amount of cinnabar in the quartzite under the contact adds to the inference of a body of mercury ore on the contact.

The depth of the "basal" quartzite is still conjectural, but it is definitely known that limes do exist under it, as proven by the deep tunnel. The presence of selenium is definitely proven in the soluble beds of the deep limes at great distances from the projection of the Lucky Boy fissure. It must be considered as a possibility that the lower contact of the basal quartzite will yield a body of the same type of Mercury ores found above, and expected to be found on the upper contact in the Deer Trail limes.

It is also possible that selected beds between the contacts could be impregnated with the mercury (selenium) minerals in sufficient quantity to be mined as ore.

The property can be prospected for all of its possibilities by a drift from the 4200 station of the deep tunnel, an adit drift along the upper contact of the basal quartzite, and upraises from the tunnel to the adit, and from the adit to the present Lucky Boy workings. Both drifts to be run to intersect the downward projection of the Lucky Boy fissure, and both raises to be run on the fissure, or near it.

The writer considers the exploration of the Lucky Boy as a legitimate and desirable endeavor, particularly at this time, when mercury and selenium are so urgently needed for defense purposes.

RECOMMENDATIONS:

It is recommended that the exploration work mentioned above be placed on a project basis with a high priority in development planning.

It is further recommended that equipment be secured to test samples on or near the property, and that personnel be trained in chemical manipulation of a process suitable to the ores of the property. It is apparent that the accepted methods used by commercial assayers is not suitable to the ores of the property, probably due to the presence of selenium and tellurium. The corrosive action of these elements on the amalgamating element used apparently prevents an accurate determination of the mercury contents. As an example, a specimen chosen at random, from one of the samples mentioned above, was analysed privately, as a favor to the writer, by a method worked out in the labor-

atory of a private firm. The results of the private analysis were: Mercury 1.82%, Selenium .42%, and Tellurium .14%. The sample from which the specimen was extracted yielded .02% Mercury by a commercial assayer, after several attempts, with the practical destruction of his apparatus. Commercial assayers in the Salt Lake City region will not attempt to analyse samples for selenium.

It is suggested that government assistance be sought in the financing of the proposed exploration work so that the work may be expedited, and not interfere with the projected development ahead of the deep tunnel.

Respectfully submitted,

Nicholas B. Crawford

NICHOLAS B. CRAWFORD.

13. Highway 89 from Marysvale, closest rail and residence center, 3 miles to junction with dirt road. Dirt road 2 miles to portal of tunnel. Dirt road 1 mile from portal of tunnel to claims. Dirt roads will require simple grading. Additional 600 feet of road will be constructed to adit drift site.

14. Applicant has good and sufficient water rights in Cottonwood Creek, 2 miles south of project, and in a spring, one mile north of the project. Water for this project will be hauled from Cottonwood Creek.

15. Power requirements will be met from one stationary Caterpillar Diesel engine, 110 HP, and from one portable Mercury 110 HP gasoline engine. Purchase of one stationary 30 HP gasoline engine is contemplated for ventilation purposes.

16. Recent operations limited to tunnel maintainance. Payroll not representative.

17. Buildings available for use on project:

    2 Frame dwelling houses.
    Metal compressor house, shop, tool and supply shed, mine office (assay) bldg. 300 feet snow shed, and 150 ton ore bin, all in good condition.

    Equipment described under Form MF-103 (7-c) attached.

18. Applicant contemplates carrying on company financed project in deep development tunnel simultaneously with this project, therefore supervision, engineering, direct overhead, tunnel maintainance, and joint use of certain articles of equipment are to be divided evenly. The project is a deviation from the applicant's long term program of development. The assistance sought in this application will expedite the exploration for mercury (selenium), which would probably not be carried out for some time in the future, in the normal course of applicant's program.

8. (continued from Form MF-100)

H. M. Wilhelm Marysvale, Utah	$10000	359,460 (shares)
I. N. Fehr 4050 Penn. Kansas City Mo.	$200000	249,000 "

(totals shown on Form MF-100)

(*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)	none				
Indicated (probable)	No estimate. (Reference is made to historical report and diagrams)				

(*c*) If placer: Does not apply

(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.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25,1952
(Date)

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
(March 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. DMEA-2418

Date received 3-10-52

DEER TRAIL MINES

MARYSVALE, UTAH

Name and address of applicant

Date February 25,1952

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) ~~Necessity Certificate pursuant to the provisions of Section 124(a) of the Defense Production Act of 1950~~, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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.

5

GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*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.
   (*b*) Mining district.
   (*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:
   - [x] Owner.
   - [ ] Lessee.
   - [ ] Contractor.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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5. Number of years in production (not in production)

   If not in production or operation, estimated date when production will begin On completion of this project
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)
John W, Wilhelm Marysvale, Utah	President (D)	nil	25000	761,302	none	10,000	10,000
Nicholas B. Crawford 179 S.6th St. Tooele, Utah	Vice-Pres (D)	nil	8000	1,000	none	none	none
Earl C. Berry Grantsville, Utah	Sec-Treas (D)	nil	5000	1,000	none	none	none
Dwight L. King Judge Bldg.Salt Lake City,Utah	(D)	nil	10000	250	none	none	none
Richard D. Ward,843 Tatnall Wilmington, Del.	(D)	nil	50000	120,000	none	none	none
Daisy W. Henry Marysvale		nil	50000	755,828	none	none	none
Dr.Charles W. vonSolbrig 6400 S Keeler,Chicago,Ill		nil	100000	470,000	none	none	none
* Total			x x x x x	2,717,840	none	x x x x x	x x x x x

If more lines are needed continue on separate sheet. * (Refer to continuation 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	$ 5,000,000	$4,725,000	$1.00	4,725,000	none
Preferred stock	$ none	$ none	$ none	none	none

*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.)	Crude Ore		Est. 1200 tons		Not in Production
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)	Silver Lead Zinc		Est. $10/ton		

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. Production rate will be governed by exyent and metal content of ore bodies exposed by this project.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application with any available report on the geology and ore reserves. Please see Form 103 Para. 2 c, and accompanying diagrams

GENERAL TECHNICAL DATA

1. (a) The anticipated product from this project is mercury.

(b) The anticipated by-products are selenium (or selenium bearing sludges, precipitates, or condensates), and some incidental production of lead-zinc-silver ores (crude, concentrate, or sinter.)

2. The mining property involved in this application consists of the DeWitt Ferguson, Deer Trail, and Deer Trail No.37 Fraction Lode Claims, sometimes known as the Deer Trail and the Lucky Boy. The claims are a part of a large estate belonging to the applicant known as the Deer Trail Mine. The property is a lode mine and is not equipped with reduction facilities.

(a) There are 398 feet of vertical and inclined shafts.

(b) There are 445 linear feet of drifts and cross-cuts.

(c) There are 900 feet of development tunnel penetrating into the property (part of a development tunnel exceeding 4300 feet in length, and popularly known as the PTH tunnel.)

(d) An open stope approximately 100 feet in diameter, and said to be 60 feet deep is now partially filled with debris. Numerous dumps and caved portals indicate considerable amounts of underground workings which are not available for inspection.

All workings are dry.

Production capacity will be limited by the size of ore bodies encountered. Reduction facilities will be guaged to the extent and accessibility of the ore exposed.

3. (a) The nearest railroad shipping point is Marysvale, Utah, six miles by road to the north-east. The portal of the development tunnel from which part of the exploration is projected is five miles from Marysvale.

(b) Mt. Baldy Mining District.

(c) Township 28 South, Sections 11,12, & 13.Range 4 West, Salt Lake Meridian.

(d) Piute County, Utah

4. (a) Operations are now limited to tunnel maintainance.

General Technical Data (Continued)

4. (b) Applicant is owner of property through stock ownership of Deer Trail Mining Company. Titles are now being processed for transfer to applicant under consolidation agreement.

5. Property is not now in production.

Production can begin within ninety days after commercial ores are encountered.

6. (a) The applicant, until recently, was known as the Patrick T. Henry Corporation, and is successor through a series of consolidations to the Deer Trail Mining Company, the Carissa Gold Mines, Inc., the Patrick T. Henry Development Co., and others in the Marysvale region. The applicant and its predecessors have been responsible for the development and operation of properties in the Marysvale region since 1878, and have accomplished many thousands of feet of underground development. The death of the principal promoter caused the consolidations and the change of the corporate name.

(b) The company affairs and the proposed exploration will be directed by:

1. Mr. John W. Wilhelm, of Marysvale, Utah will function as general manager. Mr. Wilhelm has been financially interested in the applicant for 20 years. He is a successful business man and executive, and was associated with mid-western and eastern baking interests for 30 years.

2. The operating personnel will be under the direct supervision of Mr. Jay Sylvester, mine superintendent. Mr. Sylvester has had 25 years of active underground experience, and has held the position of General Superintendent over the Henry interests for the past 15 years. His intimate knowledge of local conditions and his demonstrated ability to organize working crews qualifies him for this responsibility.

3. Technical assistance and engineering will be furnished by Mr. N.B. Crawford, of Tooele, Utah. Mr. Crawford has had 30 years experience in many western mining districts as operator and consultant.

4. General and cost accounting will be performed by Mr. E.C. Berry, of Grantsville, Utah. Mr. Berry has had 30 years experience in mining and corporate

General Technical Data (Continued)

6. (b) (cont) accounting and management, and is accustomed to the requirements of project accounting.

5. Mr. Dwight L. King, an associate of the law firm of Rawlins, Wallace, Black, Roberts, and Black, Judge Bldg., Salt Lake City, Utah, will be consulted in all legal matters pertaining to the applicant.

6. Able advice on policy and financial matters will be available from Mr. Richard D. Ward, of Wilmington, Del., a successful business executive of 40 years experience.

7. Mr. I. N. Fehr, of Kansas City, Mo., a successful and active business executive of 25 years experience will be consulted on all policy and financial matters.

7. (a) The claims in this project were located in 1878 and 1879 and were first worked for their high grade silver ores. The discovery of mercury selenide was followed by an attempt to work for the mercury content. A crude retort was constructed and high grade ores (averaging 10%) were mined by crude methods, which were treated, yielding 213 flasks of mercury. All selenium, at that time (1886-7) worthless, was wasted. Desultory attempts to develop other ore bodies were made without results (See Drwg. 52-2). Mercury ores were reported in the silver workings of the Deer Trail, but no attempt was made to develop or explore the occurrences. No attempt has been made until this time to investigate the possibilities of the extension of the ores, nor the occurrence of other and similar deposits. A deep tunnel, designed to explore the formations of the claims adjoining on the north has reached a point under the project where it can be advantageously used in exploring the property at depth.

(b) The total production of the claims within the project is 213 flasks (16,188 lbs.) of mercury in the years 1886-7. Some production of high grade silver ores was made from the Deer Trail Claim prior to the time when production data was required. Over $3,000,000 gross production of gold, silver, and lead was extracted from the adjoining claims by the Deer Trail Mining Co. The Plutus Claim adjoining on the south is said to have produced 100 tons of gold, silver ores associated with Tellurium.

7.(c)

THE LUCKY BOY PROSPECT

"Lucky Boy" is the name by which a mercury deposit on the properties of Deer Trail Mines has been known for the past seventy-five years. The discovery was made on the DeWitt-Ferguson Claim, but for physical and geological reasons the Deer Trail Claim, and the Deer Trail No.37 Fraction will be considered as part of the "Lucky Boy" as a group. These claims have been part of the Deer Trail property since the original discovery, but due to their structural isolation and peculiar mineralization they will be considered separately.

The "Lucky Boy" group consists of:

Deer Trail Lode Lot 42A
DeWitt Ferguson Lode Lot 52A
Deer Trail No.37 Fraction Lot 6720

patented mining claims containing 29 acres, more or less, in the Mt. Baldy Mining District, Piute County, Utah. Patent surveys and plats are recorded in the office of the Surveyor General in Salt Lake City, Utah, and title reference is made to the Piute County Recorder's Office, at Junction, Utah.

The claims adjoin and are surrounded by other claims that are part of the estate of Deer Trail Mines, with the exception of the Pluto Claim to the south-west which is privately owned. The Deer Trail mine lying immediately north of the claims has a long record of production. The Pluto claim is said to have produced some high grade gold and silver telluride ores.

The property lies six miles,south-west from the town of Marysvale,tje nearest railroad point, and is connected by three miles of dirt road and three miles of paved high way. The claims are at the base of the east flank of Mt. Baldy in a precipitious region, rising from 7500 to 8300 feet above sea level across the width of the claims, some 950 feet horizontally. Vegetation is sparse, consisting of mountain laurel and scrub junipers.

There is no water on the property. The nearest water available for milling or domestic use is from springs about one mile north, or from Cottonwood Creek, two miles south.

HISTORY:

The early history of the Deer Trail and the "Lucky Boy" (Dewitt Ferguson) claims is interwoven with the romantic legends of the area. The Deer Trail claim was discovered in 1878 and worked for some time as a high grade (horn silver) silver mine. The "Lucky Boy" at first was considered a galena property, but was discovered to contain massive and crystaline Tiemannite, the selenide of mercury. The early

production of mercury was accomplished by the use of crude retorts, and mining by the crudest of methods. These methods served to produce 213 flasks of mercury, without any saving of the valuable selenium and tellurium contained in the ores. Remains of a wooden chute remain on the side hill, and pieces and fragments of the ore are scattered along its course. Nails remaining im the boards are all hand wrought. Ancient history is better described in the excerpt from U.S.G.S. Prof. Paper 111:

"Adjoining the Deer Trail on the west, and owned by the same interests, is an interesting property known as the Lucky Boy. Selenide of mercury is found here and was worked for quicksilver, at one time yielding as high as 60%. The total production is estimated at 213 flasks, valued at $8,308."
(--V.C. Heikes)

"The quicksilver deposit of the Lucky Boy mine has been described by H. D. McCaskey as follows:

"The Lucky Boy quicksilver prospect was briefly described as follows by J.E. Clayton, president of the Salt Lake Mining Institute, in a letter to J. Brush of the Sheffield Scientific School, dated October 6, 1884.

"The mine is situated about 5 miles southwest of Marysvale, 200 miles south of Salt Lake City. It is on the east face of a mountain slope and near a profound fault extending north and south. To the east are eruptive rocks, including porphry and trachyte. Underlying the ore beds to the west is a quartzite of unknown thickness, over this about 400 feet of gray limestone, and in contact between these the Deer Trail vein is situated, carrying gold, silver, lead, and a little copper. In the upper portions of the limestone the selenide of mercury is found in a bed of shaley limestone 15 to 20 feet thick. The vein has been traced north and south about 100 feet along the outcrop and dips into the mountain at an angle of about 15 degrees below the horizon. The ore occurs in masses intermixed with the shaley limestone, crystals being very rare. The accompanying minerals are barite, oxide of Manganese, quartz, and calcite. The ore bed is overlain by a yellowish sandy lime shale carrying sub-carboniferous fossils.

"The locality was visited by the writer in 1910.*** The workings of the Lucky Boy mine just north of Cottonwood Canyon form a bowl shaped open cut about 100 feet in diameter and 60 feet deep, a drift to the west about 80 feet into the mountain follows the gently dipping bedding planes, a tortuous winze from the face of the drift turning back and coming out on the mountain side about 50 feet below the open cut, and another shaft at the bottom of the open cut, now filled with broken rock, reported to have been sunk about 40 feet on a north-south narrow nearly vertical vein carrying barite and some cinnabar. The cinnabar ore, it seems, was of low grade, and the commercial ore was mainly of Onofrite and to a smaller degree of Tiemannite, the sulpho-selenide

and the selenide of mercury, which were found in a deposit from 2 to 8 inches thick, following the bedding planes and impregnating the impure dark-gray limestone. Tiemannite was reported also from the barite vein, and the fissure may have been the channel for the ore solutions. The intersection of this fissure with the bedding plane would be about where the open cut is now, and indeed much of the original deposit has probably been eroded away. The deposit was evidently superficial, for the life of the operations was short, the total output small, and is now difficult to find even samples of ore in the workings. The occurrence is of especial interest as being the only deposit of the selenides of mercury in the country ever worked on a commercial scale,however small. The reduction was by two retorts operated in Cottonwood Canyon to the south of the mine. In the Deer Trail gold mine, several hundred feet below the Lucky Boy, and along the gently westward dipping bedding planes at the quartzite and limestone boundary, cinnabar with pyrite was reported in a small lens. The deposition of quicksilver minerals in both properties may have been due to solutions arising through the same vertical north-south fissures thought to extend parallel to the great Sevier Fault, and may have been localized by the transverse fissures similar to those known elsewhere in the district.

"McCaskey estimates the production of mercury from the mine as 213 flasks, valued at $8,308".

----------"The relations of the replacement deposits, as the Deer Trail and the Lucky Boy, are not so clearly indicated. These two deposits apparently are related in origin for mercury, which is the principal metal of the Lucky Boy, is also present in the Deer Trail. The Deer Trail ore, like that of most of the veins, runs high in silver and gold as compared with base metals; much of it, indeed, is valuable solely for its precious metals. In the Lucky Boy mine the mercury is present as the selenide and sulpho-selenide, and the gold ores contain both selenium and tellurium. The presence of the relatively rare element seleniumin both types of deposits suggests a close relationship, as does the presence of mercury in both."

In U.S.G.S. Monographs Vol.Vlll, Quicksilver Deposits of the Pacific Slope, 1888, Becker states that the ore beds of the Lucky Boy were four feet thick, and that the average value of the ore was 10% mercury, and that the production took place in 1886 and 1887.

After some desultory attempts to develop further ore bodies the mine was abandoned and no further work has been attempted.

The recent penetration of the deep tunnel into territory directly below the Deer Trail, and to within

300 feet of the territory directly below the Lucky Boy opens a new avenue of exploration at depth.

GEOLOGY:

The area embraced by the claims lies entirely in sedimentary formations, probably of Jurrassic origin, near the crest of a gentle anticline. A great fault has exposed the north-western slopes of the fold by the subsidence of the eastern half of the structure, thus exhibiting the types, thickness, and positions of the strata. Minor faults occur at irregular intervals on the face of the mountain parallel to the great north-south break, and are noticeable as abrupt escarpment faces, and by a slight variation in the dip of the beds. There are two principal cross faults of nearly east-west trend crossing the property. The movement on these breaks is both vertical and lateral, and probably developed along lines of weakness formed by the original folding. These faults are represented by gorges filled with rubble.

There is at least one system of mineralizing fissures having a north 20 west trend which have a filling of quartz and feldspar,usually pyritic. These fissures are considered by some to be the original mineralizers, as the known ore deposits have been found along the strike of the system. The faulting has displaced the fissuring system indicating that the fissures are older than the disturbance causing the faulting.

The claims are fairly well defined by the two faulting systems into one block of sedimentaries about 1400 feet in length and 1000 feet in width. A geologic collumn of this block can be reconstructed from 8300 feet down to 6800 feet above sea level, thus:

8300 to 8100	Yellow to buff heavy bedded calcareous sandstones. Slight mineralization on contact.
8100 to 8060	Thin bedded grey and blue limes.
8060 to 8040	Uncompacted yellow sand (non-conformity?)
8040 to 8000	Lucky Boy formation.Thin bedded shaley limes,mercury minerals near fissures. Lucky Boy ore body on contact.
8000 to 7970	Fine grained quartzite Mercury minerals on contact.
7970 to 7720	Grey and blue limes
7720 to 7700	Deer Trail limes. White dolomite with intense mineralization. Original ore discovery

7700 to ?	"Basal" quartzite. Lower portion hidden. Estimated to be 400 ft. thick.
? to 6908	Unexplored. This horizon is not exposed in the district.
6908 to 6900	Grey soluble lime. Heavily mineralized.
6900 to 6840	Buff calcareous sandstone.
6840 to 6800	Dark green calcareous shales
6800 to ?	Blue limes.

MINERALIZATION:

It has always been accepted that the mineralization of the Deer Trail had its origin in the quartz-feldspar (adularia) filled fissures, and that the soluble beds lying on the top of the quartzite absorbed the rising solutions and were replaced by the metal content, followed by a period of movement with subsequent leaching and oxidizing by decending surface waters, and that there was but one mineral epoch.

A close study of the minerals in the Lucky Boy and surrounding claims indicates the possibility of a second and significant invasion of minerals, probably as gasses or disolved gasses, at a time later than the major faulting. The presence of mercury, selenium, and tellurium as trace elements in the ore bodies of the surrounding properties, both in the replacement deposits, and in the fault fissures, without any definite relation to either precious or base metal content may indicate a secondary invasion of metaliferous fumes or solutions using the fault planes as avenues. It is entirely possible selenous and tellurous acids are responsible for the irregular distribution of the precious and base values.

The mineralization of the Deer Trail limes on the upper contact of the basal quartzite is apparently a concentration of silver values in the chloride and/or the telluride combinations, with occasional concentrations of lead confined the bedding planes of the lime, at and near the junction with the north-south fissuring system. At one place this bedding is cut by an east-west fissure that leads through the Lucky Boy workings above. This fissure dips sharply to the north and shows slight movement. The filling is barite, quartz and gouge, with occasional crystals resembling tourmaline.

The Lucky Boy limes, and the limestone members immediately below the narrow quartzite stratum are impregnated with mercury and selenium minerals imparting a bluish black color and producing a peculiar type of dendrite on the cleavages. The mineralization is most intense near the intersection of the east-west fissure with one of the north-south breaks. From the location of the open pit, and the description of the ore body mined from it, the deposit must have been in the immediate area of the intersection on the top of the quartzite.

Three general samples taken from three separate lime beddings at points thirty to forty feet west of the perimeter of the Lucky Boy stope were assayed by Deason & Nichols, of Salt Lake City, with the following results:

Gold	Silver	Mercury
.005 oz.	Trace	0.11%
.008 oz.	0.20 oz.	0.08%
none	Trace	0.02%

Several hundred qualitative tests were made in the drifts by heating samples in an ultra-violet ray before a fluorescent willemite screen. By these tests is was ascertained that the minerals followed down the bedding planes from a central point, gradually becoming diffused as the distance increased from the source. It is also obvious that the assays quoted above were erroneous when compared to the density of the fumes given off from the samples, but they do serve to indicate that the mercury mineralization is independent from the precious metals.

Three specimens taken from the bedding immediately below the quartzite, about fifty feet south of the fissure were analysed by the Bureau of Mines for selenium with the resulting percentages;

0.0011% 0.0005% 0.0002%

Two specimens taken from the deep tunnel (sta. 3450) and three from the No. 1 Deer Trail tunnel, on the Green Eyed Monster Claim of adjoining property yielded the following Selenium values:.007%; .049%; .002%; .037%; .006%. The widespread distribution of selenium is indicative of the strength of the mineralization which introduced it to the vein system. As selenium is highly corrosive, it probably was the principal solvent and final reagent of a second mineralizing epoch.

A spectrographic analysis was made by the Bureau of Mines on a specimen of the lime from the ore body at the 3450 station of the deep tunnel. The lime is of dark gray color and contains occasional crystals of galena, pyrite, and a copper mineral resembling sooty chalcocite. The elements present as indicated by the spectograph are: Copper, silver, gold, magnesium, calcium, Zinc, Cadmium, Aluminum, titanium, silicon, lead, vanadium, manganese, iron, and nickel. The metalloids and mercury do not react with sufficient positiveness to be reported. The wet analysis for selenium in this specimen was .049% . No analysis was made for sulphur nor mercury.

A specimen of black hematite ore from the same station showed the following elements to be present by the spectrograph; copper, silver, gold, magnesium, calcium, zinc, cadmium, aluminum, titanium, silicon, lead, vanadium, arsenic, antimony, manganese, iron, and cobalt. The ore is mostly a massive black hematite resembling specularite. An analysis indicates the selenium content to be .007%

From the physical appearance of the ore body, and the wide variation of the selenium content, it appears that the hematite is probably the iron in the original ore deposition, oxidized in place, and the surrounding lime containing the ore minerals represents the mineral epoch when the selenium (mercury) was introduced.

The presence of selenium in appreciable quantities at great distances from the Lucky Boy deposit could be an indication of the intensity of the mineralization of the Lucky Boy.

CONCLUSIONS:

In considering the potential and inferred value of the Lucky Boy prospect as a possible mercury (selenium) mine all of the above data must be studied for their relationship to the original deposit.

The history of the property and a study of the perimeter of the original stope indicates that the ores were a replacement of favorable lime beds lying on the top of a quartzite member, and that the minerals were introduced into the beds through fissures and fractures of the formation. The intensity of the mineralization is attested to by the presence of the active solvent (selenium) and the impregnation of the surrounding limes with mercury for a considerable distance from the original stope. The principal avenue of introduction was through the fissure known as the "Lucky Boy".

The geological collumn indicates conditions similar to the "Lucky Boy" could exist in at least three locations between the tunnel level and the present workings.

None of the prospecting work in the Lucky Boy workings has approached the quartzite contact, and very little was done in the vicinity of the Lucky Boy fissure. It is possible that additional deposits of similar type may be dicovered along the same contact.

The underside of the quartzite has been prospected only by a short incline at a point distant from the fissure. Mercury and selenium are present in trace quantities. Near the outcrop of the fissure on the lower contact there is an exposure of from 8 to 10 inches of ore containing a quantity of recognizable crystals of tiemannite, and what appears to be coloradoite.

The Deer Trail limes lying on the lower (basal) quartzite have been proven to be very soluble and receptive to

replacement by metallic ores. It is reasonable to believe that this contact at and near its intersection with the Lucky Boy fissure would contain an important deposit of the same type of minerals found above in the narrower and less soluble beds. The persistent reports of "cinnabar" in the ores of the Deer Trail, and the presence of a small amount of cinnabar in the quartzite under the contact adds to the inference of a body of mercury ore on the contact.

The depth of the "basal" quartzite is still conjectural, but it is definitely known that limes do exist under it, as proven by the deep tunnel. The presence of selenium is definitely proven in the soluble beds of the deep limes at great distances from the projection of the Lucky Boy fissure. It must be considered as a possibility that the lower contact of the basal quartzite will yield a body of the same type of Mercury ores found above, and expected to be found on the upper contact in the Deer Trail limes.

It is also possible that selected beds between the contacts could be impregnated with the mercury (selenium) minerals in sufficient quantity to be mined as ore.

The property can be prospected for all of its possibilities by a drift from the 4200 station of the deep tunnel, an adit drift along the upper contact of the basal quartzite, and upraises from the tunnel to the adit, and from the adit to the present Lucky Boy workings. Both drifts to be run to intersect the downward projection of the Lucky Boy fissure, and both raises to be run on the fissure, or near it.

The writer considers the exploration of the Lucky Boy as a legitimate and desirable endeavor, particularly at this time, when mercury and selenium are so urgently needed for defense purposes.

RECOMMENDATIONS:

It is recommended that the exploration work mentioned above be placed on a project basis with a high priority in development planning.

It is further recommended that equipment be secured to test samples on or near the property, and that personnel be trained in chemical manipulation of a process suitable to the ores of the property. It is apparent that the accepted methods used by commercial assayers is not suitable to the ores of the property, probably due to the presence of selenium and tellurium. The corrosive action of these elements on the amalgamating element used apparently prevents an accurate determination of the mercury contents. As an example, a specimen chosen at random, from one of the samples mentioned above, was analysed privately, as a favor to the writer, by a method worked out in the labor-

atory of a private firm. The results of the private analysis were: Mercury 1.82%, Selenium .42%, and Tellurium .14%. The sample from which the specimen was extracted yielded .02% Mercury by a commercial assayer, after several attempts, with the practical destruction of his apparatus. Commercial assayers in the Salt Lake City region will not attempt to analyse samples for selenium.

It is suggested that government assistance be sought in the financing of the proposed exploration work so that the work may be expedited, and not interfere with the projected development ahead of the deep tunnel.

Respectfully submitted,

Nicholas B. Crawford

NICHOLAS B. CRAWFORD.

13. Highway 89 from Marysvale, closest rail and residence center, 3 miles to junction with dirt road. Dirt road 2 miles to portal of tunnel. Dirt road 1 mile from portal of tunnel to claims. Dirt roads will require simple grading. Additional 600 feet of road will be constructed to adit drift site.

14. Applicant has good and sufficient water rights in Cottonwood Creek, 2 miles south of project, and in a spring, one mile north of the project. Water for this project will be hauled from Cottonwood Creek.

15. Power requirements will be met from one stationary Caterpillar Diesel engine, 110 HP, and from one portable Mercury 110 HP gasoline engine. Purchase of one stationary 30 HP gasoline engine is contemplated for ventilation purposes.

16. Recent operations limited to tunnel maintainance. Payroll not representative.

17. Buildings available for use on project:

    2 Frame dwelling houses.
    Metal compressor house, shop, tool and supply shed, mine office (assay) bldg. 300 feet snow shed, and 150 ton ore bin, all in good condition.

    Equipment described under Form MF-103 (7-c) attached.

18. Applicant contemplates carrying on company financed project in deep development tunnel simultaneously with this project, therefore supervision, engineering, direct overhead, tunnel maintainance, and joint use of certain articles of equipment are to be divided evenly. The project is a deviation from the applicant's long term program of development. The assistance sought in this application will expedite the exploration for mercury (selenium), which would probably not be carried out for some time in the future, in the normal course of applicant's program.

8. (continued from Form MF-100)

H. M. Wilhelm Marysvale, Utah	$10000	359,460 (shares)
I. N. Fehr 4050 Penn. Kansas City Mo.	$200000	249,000 "

(totals shown on Form MF-100)

(*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)	none				
Indicated (probable)	No Estimate (Reference is made to historical report and diagrams)				

(*c*) If placer: Does not apply

(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.

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.

DEER TRAIL MINES
(Name of company)

By John W. Wilhelm
(Signature of authorized official)
John W. Wilhelm

February 25, 1952
(Date)

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

6000
77
300 Dean Israel Minerals (a company) Mt Bom Hole X 3268

U.S. P.P. 111 p 550-52
vein 2-8" w
are close to vein Crazy Boy

Based on assumption that a 2 to 8 inch vein can be projected 1100 ft

mercury selenide unique

metallurgy of Sarvij Hg + Se
The lime beds (Dean Israel Limes) on top of the Lower Dolomite - white dolomite - Proven to be potable + recipture

Studious conscientious application
Could the exposure of the Crazy Boy vein @ intersection with the white dolomite Lead @ upper contact of Basal Sprawls to lime be done by surface work trenching or bulldozer
Could this be done in time for your field work
The whole project is based on interpretation of the narrow vein with favorable results + contacts. Time is urgent to get some data on this as soon as possible. The intensity of mineralization @ this point should be prominent. The distance is only 160 ft on the surface @ 125 ft lower elevation

What precedent there is for the district such a main our vein Berry found 300' in depth

Should not consider the 1100 level work as a basis all under the 300 level is a guarantee.

While the estimates cover well out the work element labor detailed for each piece of work + supplies limited as the known relationship to the job they are used on.

Possibility of other veins

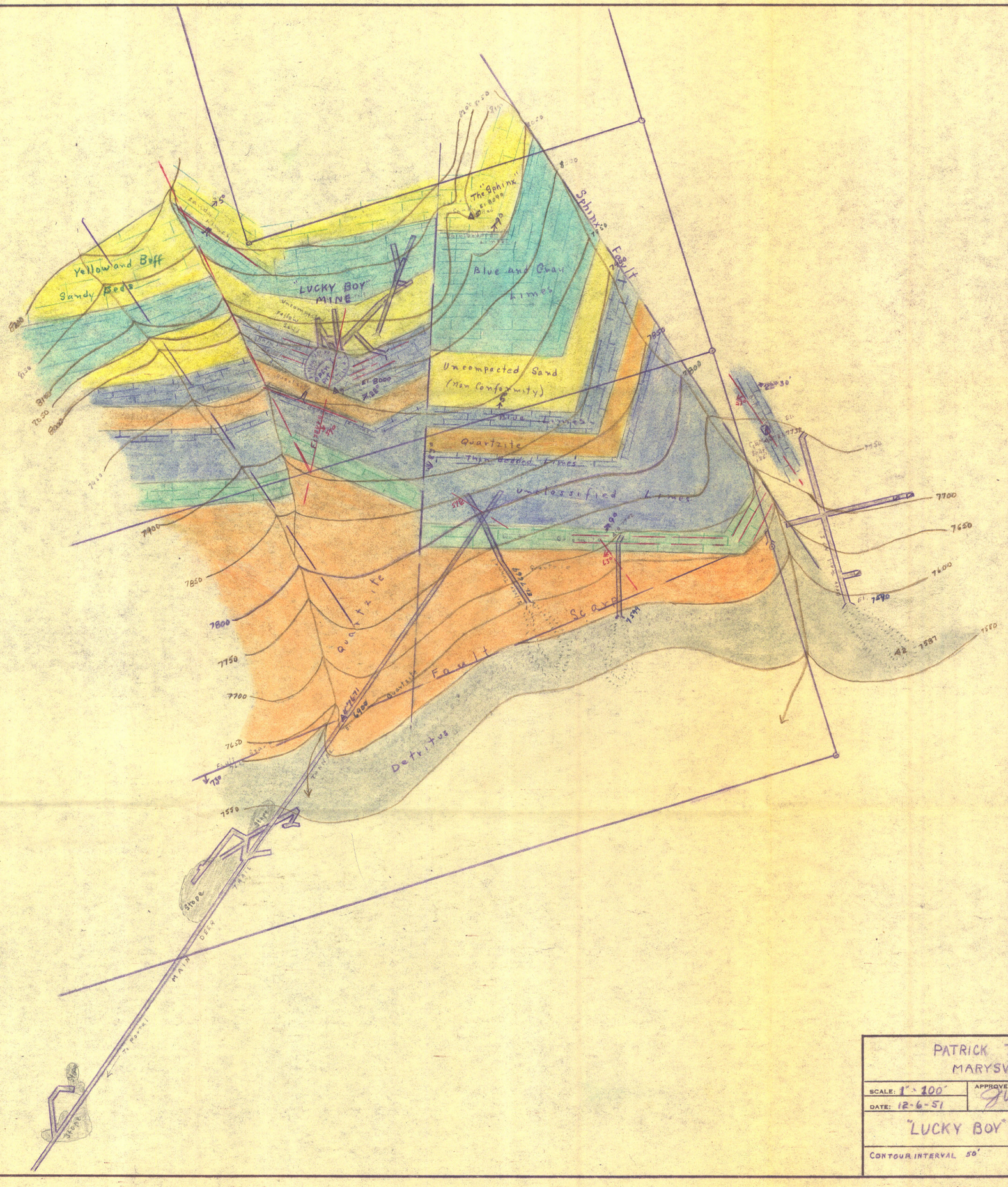
Selenium & Co-
Cobalt from Cu refining

2-28

DMEA-2418
DEER TRAIL MINES

KAROLTON KLASP—8½ X 11¼
MADE IN U.S.A.
THE AMERICAN ENVELOPE CO.
WEST CARROLLTON, OHIO

DMEA-2418
DEER TRAIL MINES



PATRICK T HENRY CORP
MARYSVALE UTAH

SCALE: 1" = 100'	APPROVED BY J. W.	DRAWN BY TJB
DATE: 12-6-51		REVISED

"LUCKY BOY" SURFACE DETAILS

CONTOUR INTERVAL 50'	DRAWING NUMBER 51-1

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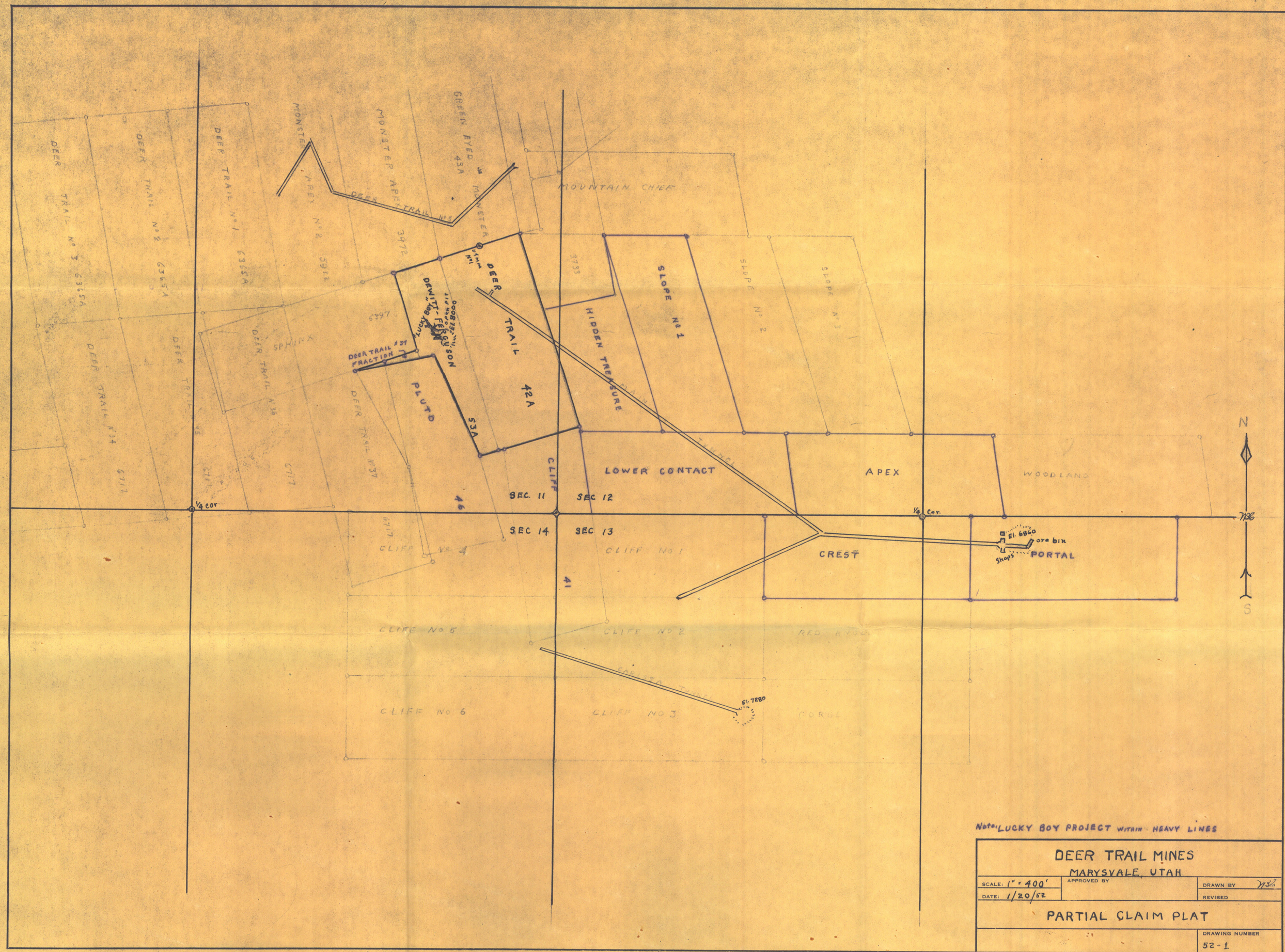

Note: LUCKY BOY PROJECT WITHIN HEAVY LINES

DEER TRAIL MINES MARYSVALE, UTAH		
SCALE: 1" = 400'	APPROVED BY	DRAWN BY
DATE: 1/20/52		REVISED
PARTIAL CLAIM PLAT		
		DRAWING NUMBER 52-1

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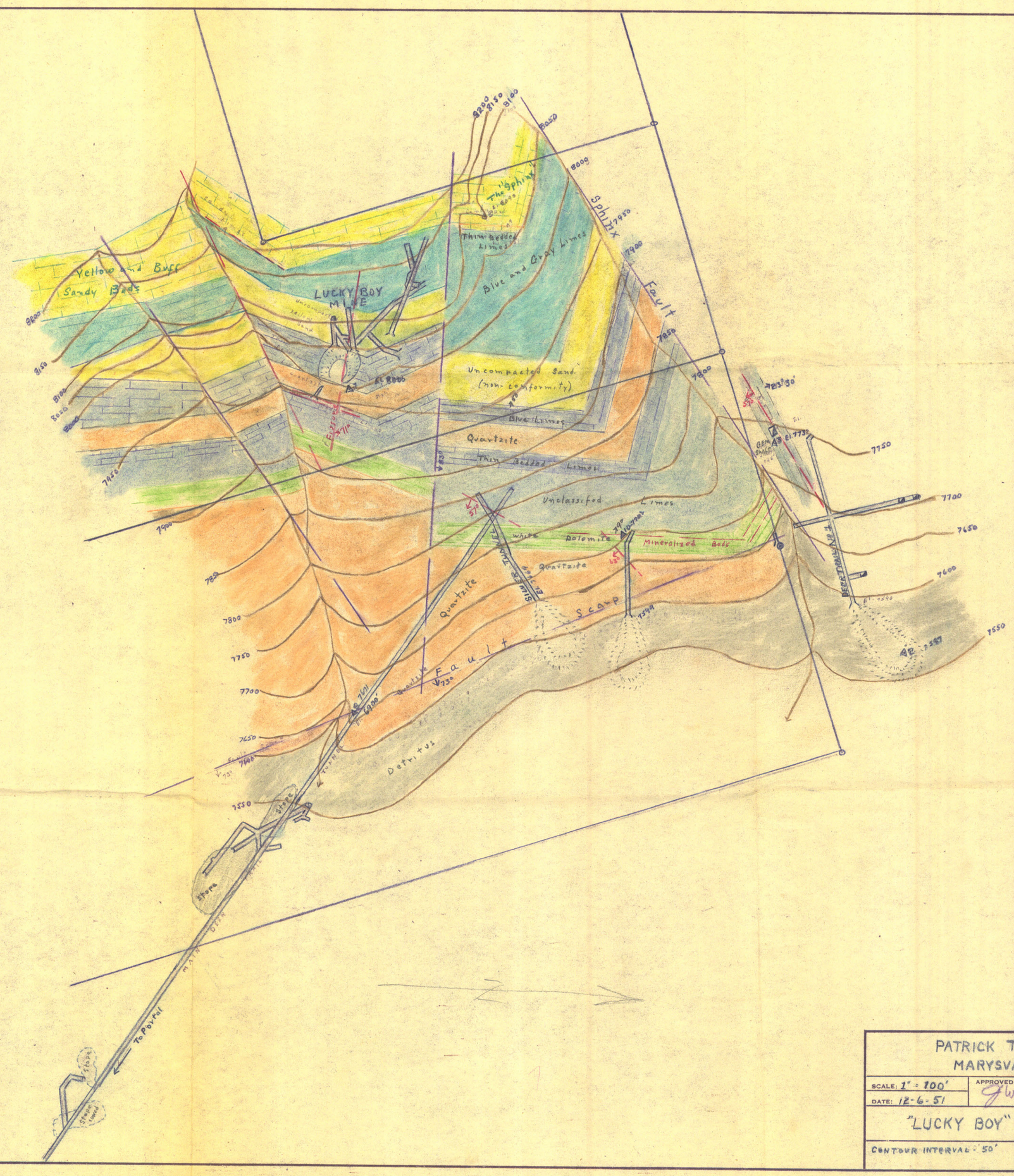

PATRICK T. HENRY CORP
MARYSVALE UTAH

SCALE: 1" = 100'	APPROVED BY J.W.W.	DRAWN BY 7/36
DATE: 12-6-51		REVISED

"LUCKY BOY" SURFACE DETAILS

CONTOUR INTERVAL = 50'	DRAWING NUMBER 51-1

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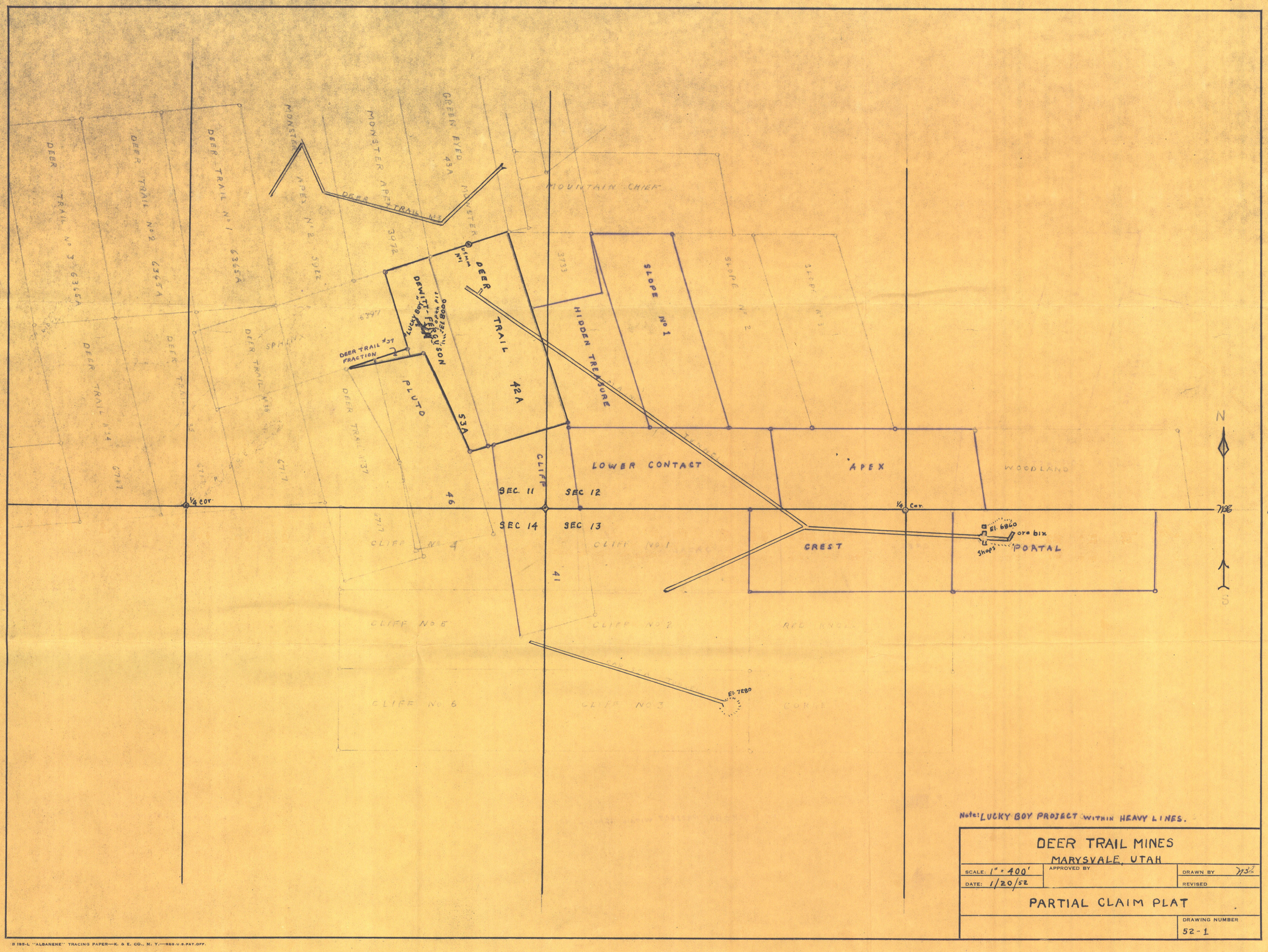

Note: LUCKY BOY PROJECT WITHIN HEAVY LINES.

DEER TRAIL MINES MARYSVALE, UTAH		
SCALE: 1" = 400'	APPROVED BY	DRAWN BY
DATE: 1/20/52		REVISED
PARTIAL CLAIM PLAT		
		DRAWING NUMBER 52-1

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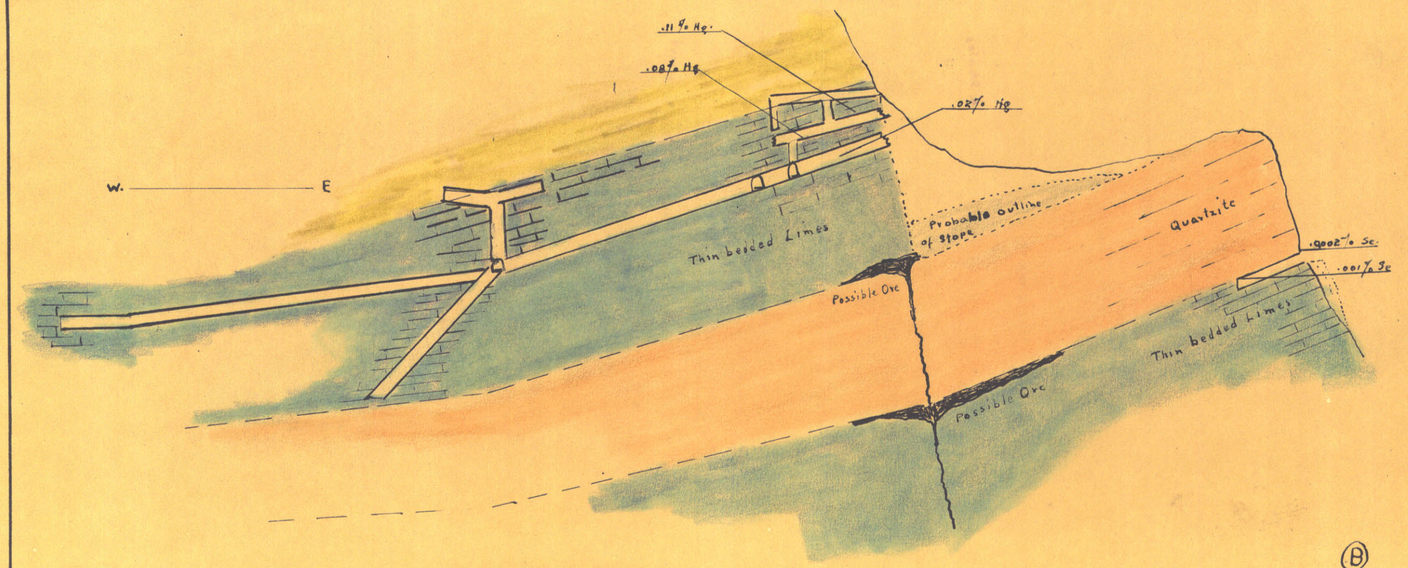
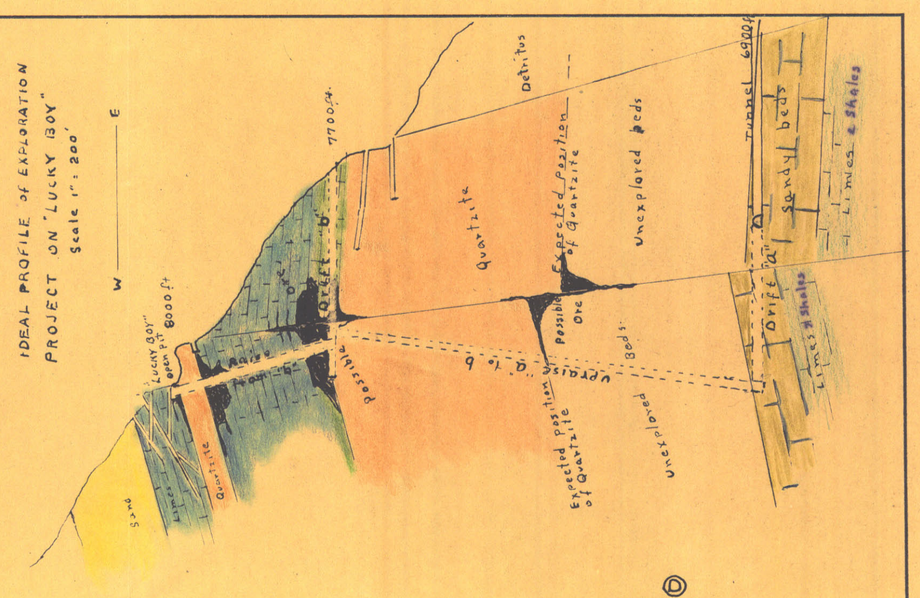
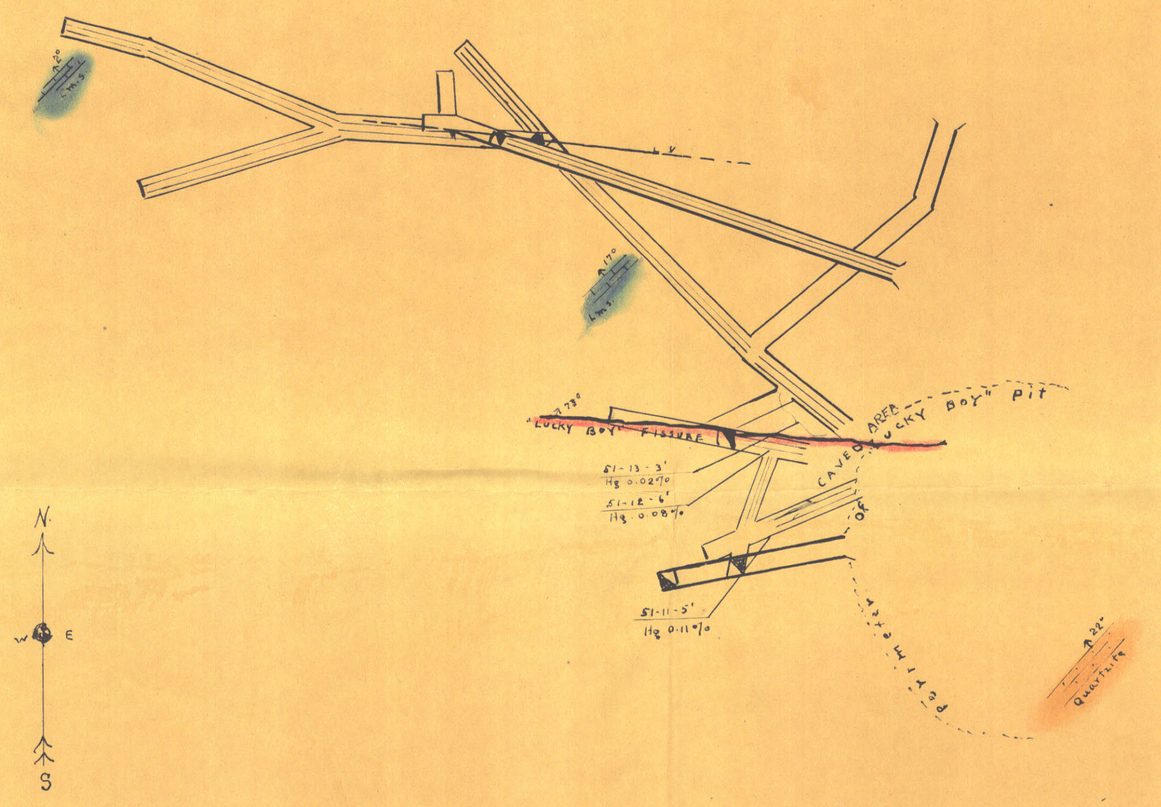
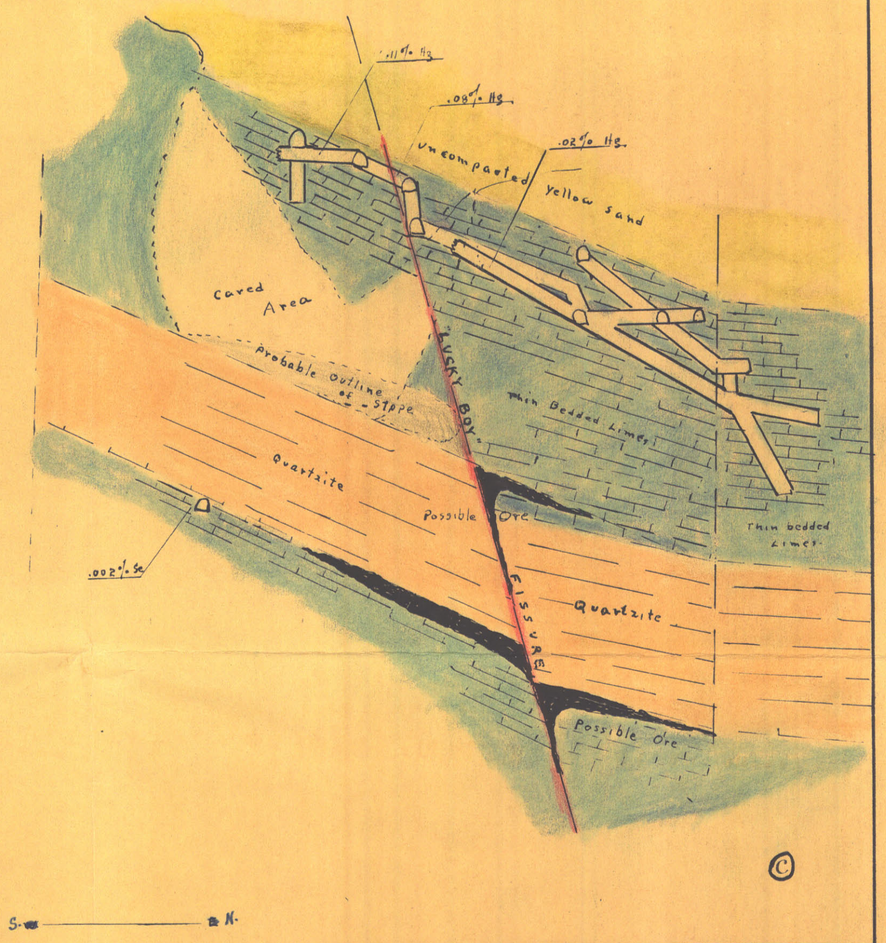








S. N.

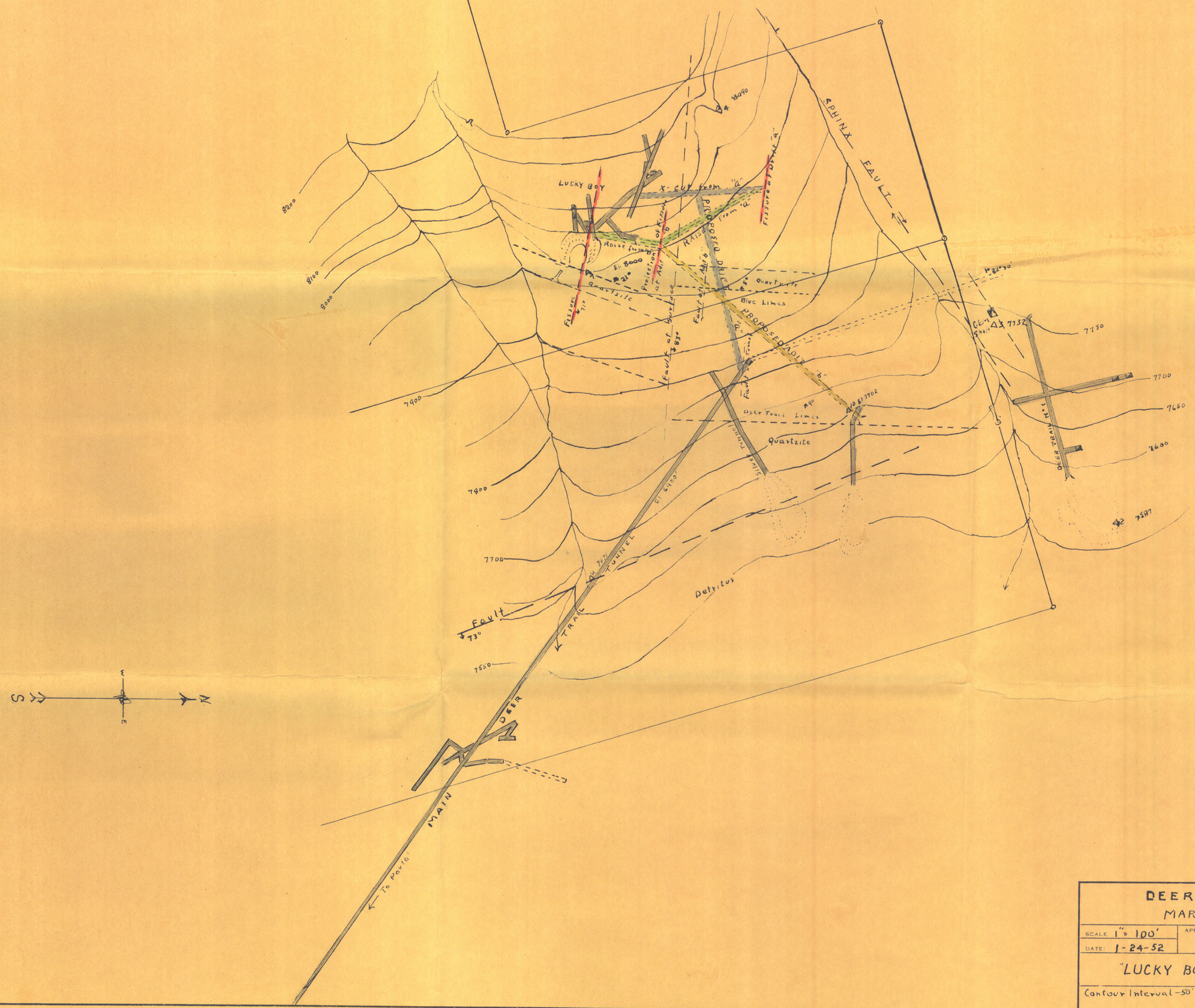
DEER TRAIL MINES
MARYSVALE UTAH

SCALE: 1" = 20'	APPROVED BY	DRAWN BY NJB
DATE: 1-20-52		REVISED

"LUCKY BOY" PROSPECT: PLAT (A), PROFILE (B) & SECTION (C), & PROJECT PROFILE (D)

DRAWING NUMBER 52-2

S 185-L "ALBANENE" TRACING PAPER—K. & E. CO., N. Y.—REG. U. S. PAT. OFF.



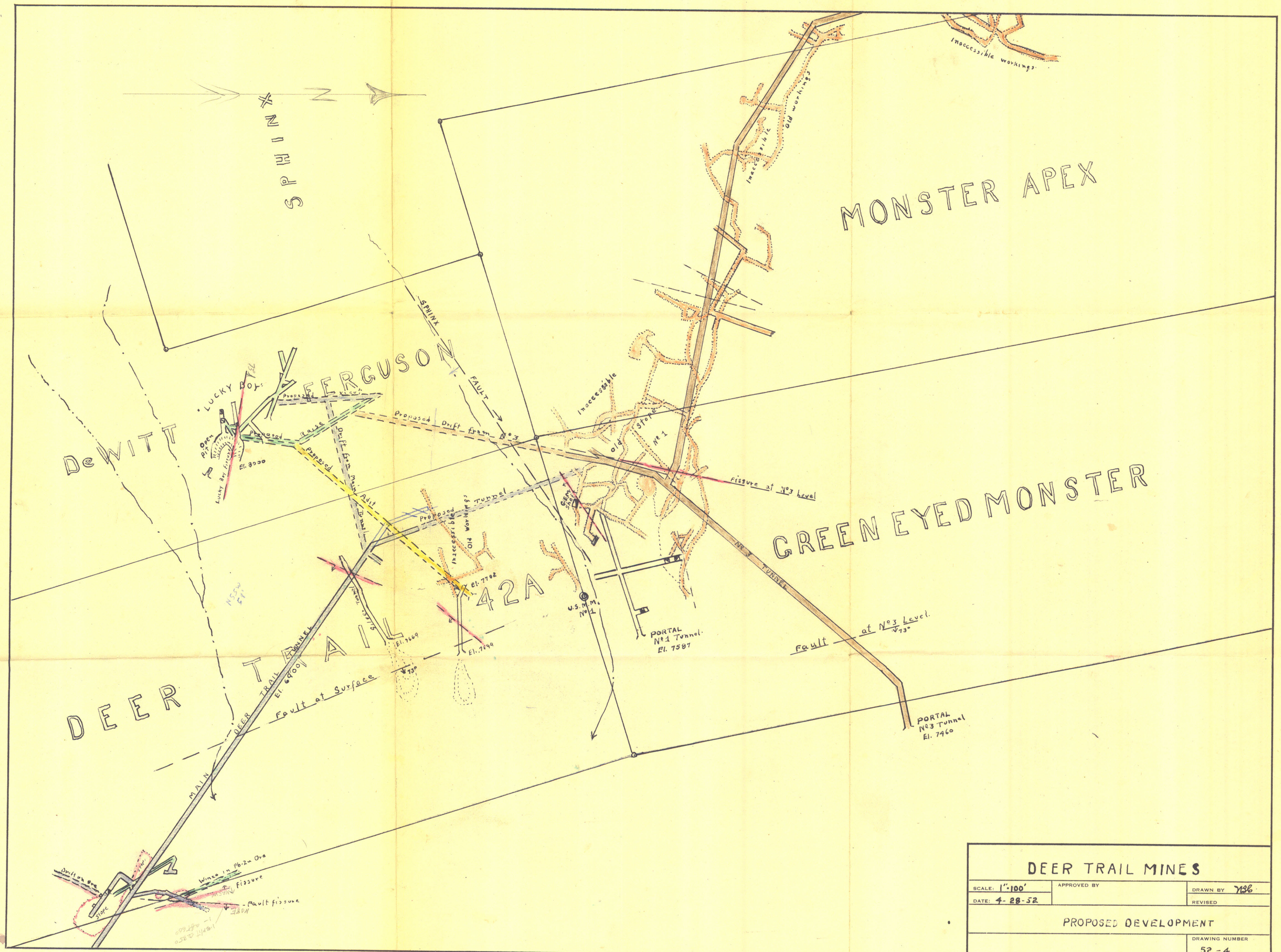
DEER TRAIL MINES
MARYSVALE, UTAH

SCALE 1" = 100'	APPROVED BY	DRAWN BY MBL
DATE: 1-24-52		REVISED 1-24-52

"LUCKY BOY" PROPOSED DEVELOPMENT

Contour Interval - 50'	DRAWING NUMBER 52-3

B 195-L "ALBANENE" TRACING PAPER—K. & E. CO., N. Y.—REG U S PAT OFF



DEER TRAIL MINES		
SCALE: 1" = 100'	APPROVED BY	DRAWN BY NJB
DATE: 4-28-52		REVISED
PROPOSED DEVELOPMENT		
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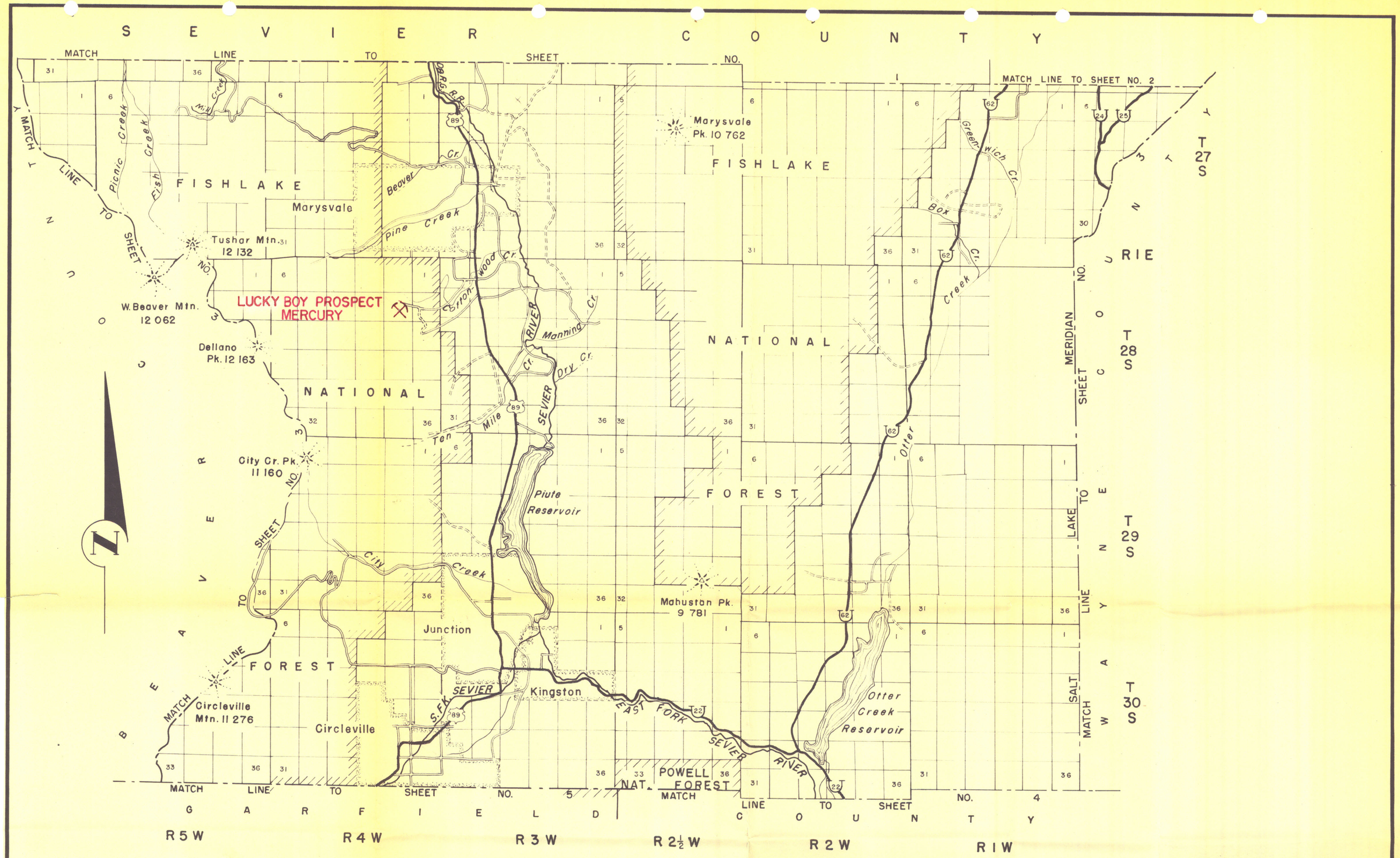


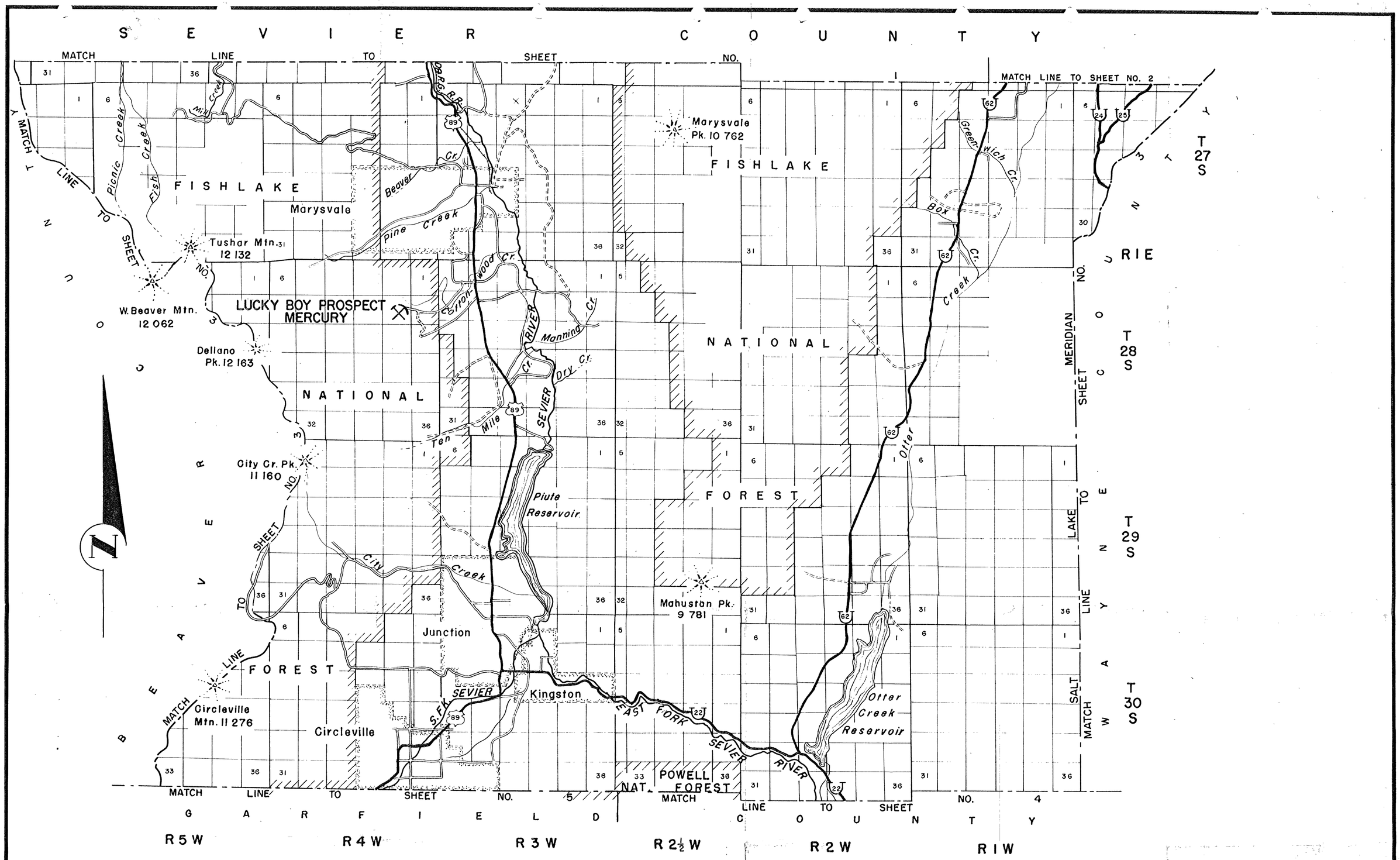
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1

DMEA Docket No. 2418

STATE: UTAH
COUNTY: PIUTE
Sheet 1 of 1
Location Map

ENGINEER: R. L. Middleton	DATE: JULY 7, 1952
TRACED: JULY, 1952, BY: A.P.T.S.	400 - 2 - C
CHECKED:	



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1

DMEA Docket No. 2418

STATE: UTAH
COUNTY: PIUTE
Sheet 1 of 1
Location Map

ENGINEER: R. L. Middleton	DATE: JULY 7, 1952
TRACED: JULY, 1952; BY: A.P.T.S.	400 - 2 - C
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