DMA Form 1

DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3862

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Exploration Assistance

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1 cy 700 1 cy USGS
1 cy USBM 1 cy Reg III

Routing Slip

To:	Rare & Misc. Mtls.	Date	6/21/55
To:	Oper Com	Date	7-1-55
To:	Oper Com	Date	11-28-55
To:	Mr. J Vinson	Date	11/28/55
To:		Date	
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CONTROLLED DOCUMENT

700

FILE COPY
Surname:

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

FEB 15 1956

Paramount Exploration Company
437 South Hill Street
Los Angeles 13, California

Re: Docket No. DMEA-3862 (Uranium) - denied
Paramount Aubert Shaft
Piute County, Utah

Gentlemen:

Your letter, dated January 16, 1956, addressed to the U. S. Geological Survey and U. S. Bureau of Mines field representatives of the Defense Minerals Exploration Administration, Region III, has been referred to Washington for review and reply.

We regret to advise you that, after a careful analysis, the supplementary information submitted in your letter does not materially alter our previous conclusion in regard to the possibility of disclosing significant uranium ore deposits by the exploratory work proposed under the above-docketed application. Therefore, we must reaffirm our denial of your application.

Sincerely yours,

C. O. Mittendorf

Administrator

FMMurphy/gla/izm 2-14-56

CC to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Region III (2)
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

RGh.

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

RECEIVED
FEB - 9 1956

February 7, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Docket DMEA 3862 (Uranium), Paramount Exploration Company, Paramount Aubert Shaft, Piute County, Utah

Enclosed are four copies of the following:

1. Letter from the applicant company to Osterstock and Gilkey dated January 16, 1956

2. Copy of a memorandum from R. W. Osterstock to E. N. Harshman dated January 20, 1956

3. Copy of a memorandum from E. N. Harshman to the Executive Officer, DMEA Field Team, Region III dated January 24, 1956.

We are still of the opinion that denial of the subject application for exploration assistance was entirely justified. We suggest that the Administrator reply to the last paragraph of the applicant's letter.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

C
O
P
Y

PARAMOUNT EXPLORATION COMPANY
437 South Hill Street
Los Angeles 13, California

RECEIVED
FEB - 9 1956

January 16, 1956

U. S. Geological Survey
Room 208, 222 S. W. Temple
Salt Lake City, Utah

Attention: Mr. Osterstock

and

Bureau of Mines
University of Utah
Salt Lake City, Utah

Attention: Mr. Gilkey, Engineer

Gentlemen:

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Kindly advise at your earliest opportunity if this additional information can aid you in recommending the approval of the program or a portion of the program in our DMEA loan application.

Yours very truly

PARAMOUNT EXPLORATION COMPANY

By

MINERAL DEPOSITS
DMEA
RECEIVED
JAN 23 1956
U. S.
GEOLOGICAL SURVEY,
DENVER, COLORADO

RECEIVED
FEB - 9 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Room 208, 222 So. West Temple
Salt Lake City 1, Utah
January 20, 1956

IN REPLY REFER TO:

DMEA
Date Rec'd.
JAN 25 1956
BUREAU OF MINES
Denver, Colorado

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA 3862 (Uranium) Paramount Exploration Co., Paramount Aubert Shaft, Piute County, Utah.

Enclosed is a copy of a letter and attached analytical data pertaining to the subject property. This material was submitted by the applicants apparently with the hope that it might influence DMEA thinking relative to the already denied application.

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R. W. Osterstock

IN REPLY REFER TO:

DMEA
Date Rec'd.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

RECEIVED FEB - 9 1956

JAN 25 1956

BUREAU OF MINES
Denver, Colorado

January 24, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3862 (Uranium), Paramount Exploration Company, Piute County, Utah

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The last paragraph of the applicant's letter requires an answer, probably by the Administrator.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures

	Sample from 200' level, Paramount Exploration Co. shaft	Buddy property	Freedom property	Abundance in earth's crust. USGS Circular 285 Mason and Brian
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Boron	0.0044			0.0003
Titanium	0.39	0.37	0.094	0.44
Aluminum	7.40	3.4	2.7	8.13
Magnesium	0.47	0.11	0.15	2.09
Lead	0.016	0.063	0.063	0.0016
Iron	3.4	3.3	2.3	5.00
Manganese	0.10	0.029	0.021	0.100
Calcuim	0.54	0.52	0.37	3.63
Molybdenum	0.013	0.24	0.037	0.0015
Vanadium	0.031	0.0083	0.0095	0.015
Copper	0.0072	0.012	0.0062	0.007
Sodium	0.35	0.39	0.096	2.83
Zirconium	0.030	0.0080	0.0040	0.022
Nickel	0.0056		0.0020	0.008
Cobalt	0.0014	0.00050	0.0030	0.0013
Strontium	0.031			0.030
Potassium	3.2	1.9	2.4	2.59
Chromium	0.014	0.0072	0.003	0.020
Uranium	<0.20	1.2	4.8	0.0004
Thorium	<0.10	<0.10	0.14	0.0012
Rare Earths	nil	trace	trace	0.015
Beryllium			0.000030	0.0006

2/13/56 [illegible]

UNITED ST[redacted]
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
FEB - 9 1956

February 7, 1956

224 New Customhouse
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From: Field Team, Region III

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DMEA Field Team, Region III

W. M. TRAVER,
By W. M. Traver
Executive Officer

Enclosures

PARAMOUNT EXPLORATION COMPANY
437 South Hill Street
Los Angeles 13, California

January 16, 1956

RECEIVED
FEB - 3 1956

COPY

U. S. Geological Survey
Room 208, 222 S. W. Temple
Salt Lake City, Utah

Attention: Mr. Osterstock

and

Bureau of Mines
University of Utah
Salt Lake City, Utah

Attention: Mr. Gilkey, Engineer

Gentlemen:

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The Paramount area certainly supports Dr. Kerr's opinion, as I remember from reading Government reports, that through the long periods of geologic time, the Marysvale area furnished the uranium in solution which enriched much of the plateau area in Eastern Utah.

Kindly advise at your earliest opportunity if this additional information can aid you in recommending the approval of the program or a portion of the program in our RMEA loan application.

Yours very truly,

PARAMOUNT EXPLORATION COMPANY

By

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COPY

RECEIVED
FEB - 9 1956

Room 208, 222 So. W. Temple
Salt Lake City 1, Utah
January 20, 1956

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA 3862 (Uranium), Paramount Exploration Company, Paramount Aubert Shaft, Piute County, Utah.

Enclosed is a copy of a letter and attached analytical data pertaining to the subject property. This material was submitted by the applicants apparently with the hope that it might influence DMEA thinking relative to the already denied application.

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/S/ R. W. Osterstock

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED FEB 9 1956

DMEA Date Rec'd. JAN 25 1956

BUREAU OF MINES Denver, Colorado

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 24, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3862 (Uranium), Paramount Exploration Company, Piute County, Utah

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E. N. Harshman
Member, Field Team

Enclosures

EHHarshman:mp

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Calcium	0.54	0.52	0.37	3.63
Molybdenum	0.013	0.24	0.087	0.0015
Vanadium	0.051	0.0083	0.0095	0.015
Copper	0.0072	0.012	0.0062	0.007
Sodium	0.35	0.39	0.096	2.83
Zirconium	0.050	0.0080	0.0040	0.022
Nickel	0.0096		0.0020	0.008
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PARAMOUNT EXPLORATION COMPANY
437 South Hill Street
Los Angeles 13, California

RECEIVED
FEB - 3 1956

January 16, 1956

U. S. Geological Survey
Room 208, 222 S. W. Temple
Salt Lake City, Utah

COPY

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and

Bureau of Mines
University of Utah
Salt Lake City, Utah

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PARAMOUNT EXPLORATION COMPANY

By

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
FEB - 9 1956

Room 208, 222 So. W. Temple
Salt Lake City 1, Utah
January 20, 1956

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA 3862 (Uranium), Paramount Exploration Company, Paramount Aubert Shaft, Piute County, Utah.

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/S/ R. W. Osterstock

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UNITED STATES
DEPARTMENT OF THE INTERIOR
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FEB - 9 1956

DMEA
Date Rec'd.
JAN 25 1956
BUREAU OF MINES
Denver, Colorado

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 24, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

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ENHarshman:mp

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PARAMOUNT EXPLORATION COMPANY
437 South Hill Street
Los Angeles 13, California

January 16, 1956

RECEIVED
FEB - 6 1956

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Salt Lake City, Utah

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University of Utah
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FEB - 9 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Room 208, 222 So. W. Temple
Salt Lake City 1, Utah
January 20, 1956

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA 3862 (Uranium), Paramount Exploration Company, Paramount Aubert Shaft, Piute County, Utah.

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RECEIVED DMEA
Date Rec'd
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JAN 25 1956
BUREAU OF MINES
Denver, Colorado

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 24, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 5862 (Uranium), Paramount Exploration Company, Piute County, Utah

Enclosed is one copy of a letter from the applicant submitting three spectroscopic analyses and his interpretation of their significance, and one copy of comments by R. W. Osterstock.

I have tabulated the three analyses along with the average abundance of the elements in the earth's crust as given in U. S. G. S. Circular 285 (using column one in table two, after Mason and Brian). The table is attached. The photostats of the three spectroscopic analyses have been returned to Osterstock as requested.

I fail to see any significance in a comparison of the three analyses submitted by the applicant and feel that denial of the application for exploration assistance was entirely justified.

The last paragraph of the applicant's letter requires an answer, probably by the Administrator.

E. N. Harshman
Member, Field Team

Enclosures

ENHarshman:mp

	Sample from 800' level, Paramount Exploration Co. shaft	Buddy property	Freedom property	Abundance in earth's crust. USGS Circular 285 Mason and Brian
Silicon	35.0	31.0	29.0	27.72
Boron	0.0044			0.0003
Titanium	0.39	0.37	0.094	0.44
Aluminum	7.40	3.4	2.7	8.13
Magnesium	0.47	0.11	0.15	2.09
Lead	0.016	0.063	0.063	0.0016
Iron	3.4	3.3	2.3	5.00
Manganese	0.10	0.029	0.021	0.100
Calcium	0.54	0.52	0.37	3.63
Molybdenum	0.013	0.24	0.087	0.0015
Vanadium	0.031	0.0083	0.0095	0.015
Copper	0.0072	0.012	0.0062	0.007
Sodium	0.35	0.39	0.096	2.83
Zirconium	0.030	0.0080	0.0040	0.022
Nickel	0.0056		0.0020	0.008
Cobalt	0.0014	0.00050	0.0030	0.0013
Strontium	0.031			0.030
Potassium	3.2	1.9	2.4	2.59
Chromium	0.014	0.0072	0.003	0.020
Uranium	< 0.20	1.2	4.8	0.0004
Thorium	< 0.10	<0.10	0.14	0.0012
Rare Earths	nil	trace	trace	0.015
Beryllium			0.000030	0.0006

700

FILE COPY
Surname:
Murphy
Ellis
Jones
Kiilsgaard
Selfridge

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

NOV 28 1955

Paramount Exploration Company
437 South Hill Street
Los Angeles 13, California

Re: Docket No. DMEA-3862 (Uranium)
Paramount Aubert Shaft
Piute County, Utah

Gentlemen:

Reference is made to your application for Government aid in an exploration project on the above-named property.

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

Careful study of all our information, although noting a small amount of uranium mineralization on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied. However, this denial is made without prejudice. If future work on the property reveals evidence which could materially alter this opinion, be assured we will be pleased to consider a new application.

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

Sincerely yours,

Frank E. Johnson

ACTING Administrator

FMMurphy/izm 11-25-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)
Messrs. JECrawford, Rm. 3641 THKiilsgaard, Rm. 5224 JOHosted, Rm. 3210, GSA

P.S.

November 25, 1955

Summary of Proposed Project

Object:	Denial of application for exploration aid.
Docket No.:	DMEA-3862
Commodity:	Uranium
Applicant:	Paramount Exploration Company 437 South Hill Street Los Angeles 13, California
Property:	Owner by assignment (10% overriding royalty) of 8 lode claims situated in Sec. 26, T. 26 S., R. 4 W., and Sec. 4, T. 27 S., R. 3 W., S.L.B.M., Piute County, Utah.
Date of Application:	June 20, 1955
Referred to Field Team:	July 1, 1955
Field Team Report Recd.:	November 3, 1955
Amount of Application:	$84,405.60

Work Proposed:

1. Sink the present 200-foot shaft an additional 240 feet.
2. Crosscut 900 feet northward at the 440-foot level of the shaft. This crosscut will intersect the known shear zone at a distance of about 50 feet from the shaft.
3. From the crosscut drift along the shear zone for 150 feet in a northeast direction and 150 feet in a southwest direction.

Estimated Costs:

Shaft, 6'4" x 4'6", 240 feet @ $126.49/ft.	$30,357.60
Drifts and crosscut, 5' x 7', 1200 feet @ $45.04/ft.	54,048.00
Total	$84,405.60

Excerpts from Field Team Report:

Rocks present in the area include Tertiary lava flows, tuffs, and tuff breccias intruded by granitic rocks. The uranium deposits occur principally in shear zones and narrow veins in quartz monzonite. Near the surface the uranium minerals are secondary, autunite being the most common. Below depths of 150 feet uranium mineralization is in the form of the primary uraninite. The tenor of the ore remain essentially unchanged in passing from the zone of alteration into the primary zone. There is no zone of secondary enrichment.

Results of exploration for uranium ores in the Marysvale district indicate that ore bodies of commercial grade and size occur within an area extending north and south a distance of approximately 3000 feet. This "central" producing area extends from the Prospector mine on the south to the Glenn mine on the north. The claims of the Paramount Exploration Company lie adjacent to the east side of the productive area.

A strong cross fault cuts the shear zone between the Prospector Mine and the Paramount property. Mr. Osterstock, USGS, notes in his report that the Prospector fissure zone was mineralized up to this fault, little or no mineralization was located beyond the fault.

Exploratory work to date in the proposed project area includes a 200-foot vertical shaft and about 360 feet of drifting at the 200-foot level. Sixteen samples taken in this drift averaged 0.03 percent U_3O_8. The highest assay was 0.09 percent U_3O_8.

The Applicant's proposal to explore the shear zone at the 440-foot level cannot be justified by the assumption that leaching has removed a large part of the mineralization from higher levels. The history of the area indicates that leaching has little effect on the grade of ore.

Driving the proposed 900-foot crosscut to the north does not appear to be warranted, inasmuch as available information indicates that crosscutting to the north, already completed in Vanadium Corporation of America Ground, adjacent to the west, failed to encounter minable ore.

The field examiners and Field Team concur in recommending the subject application be denied. However, ~~it~~ they recommend~~s~~ a denial without prejudice to the property because the Applicant now plans a $4000 surface-trenching program in the area north of their shaft. The field examiners state that if the results of the trenching are favorable, the Applicant may ask for reconsideration of the present application or may submit a revised application.

Commodity Members' Comments:

U. S. Bureau of Mines - J. E. Crawford - November 15, 1955:

Reaffirms his original recommendation, made before the field examination, to deny the subject application.

U. S. Geological Survey - N. E. Nelson - November 23, 1955:

Concurs in the Field Team's recommendation to deny the subject application.

Rare and Miscellaneous Metals Division - F. M. Murphy - November 25, 1955:

Judging from the field examiners report there appears to be no justification for the work proposed in the subject application. However, it is possible that the trenching work now being done by the Applicant might expose a strongly mineralized shear zone north of the one that has been explored. The maps submitted indicate that this area was not explored by cross-cutting at the 200 level from the present shaft.

This Division concurs in the Field Team's recommendation to deny the subject application without prejudice, and that consideration be given a new application if more favorable evidence of uranium mineralization to the north of the shaft is presented.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

11-23-55 [illegible]

IN REPLY REFER TO:

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

RECEIVED
NOV 23 1955

November 23, 1955

Re: DMEA 3862
Paramount Expl. Co.
Paramount Mine
Piute Co., Utah
$84,405.62 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicants requested assistance in exploring a shear zone by sinking, drifting and crosscutting, as:--

Sinking, 240 feet	$30,357.60
Drifting and cross-cutting, 1200 feet	54,048.00
Total	$84,405.60

The examiners found that work already done in the shear zone in the Paramount property had not disclosed ore-grade material, and concluded that the proposed work would do no better. Work to the west had prospected much the same ground it was intended to explore by the crosscutting and no ore had been found.

In view of the unfavorable results of work already done and the lack of a more than general target, I concur with the recommendation of the examiners and the Field Team that the application be denied.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
NOV 23 1955

November 23, 1955

Re: DMEA 3862
Paramount Expl. Co.
Paramount Mine
Piute Co., Utah
$84,405.62 - Uranium

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In view of the unfavorable results of work already done and the lack of a more than general target, I concur with the recommendation of the examiners and the Field Team that the application be denied.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-11/23/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
NOV 23 1955

November 23, 1955

Re: DMEA 3862
Paramount Expl. Co.
Paramount Mine
Piute Co., Utah
$54,405.62 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

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N. E. Nelson

N. E. Nelson

NENelson:iml
G-11/23/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
NOV 23 1955

November 23, 1955

Re: DMEA 3868
Paramount Expl. Co.
Paramount Mine
Piute Co., Utah
$84,405.62 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

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Drifting and cross-cutting, 1800 feet	54,048.00
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In view of the unfavorable results of work already done and the lack of a more than general target, I concur with the recommendation of the examiners and the Field Team that the application be denied.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-11/23/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

11/15/55 gla

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

November 15, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

RECEIVED NOV 15 1955

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of examination, DMEA Docket 3862, Paramount Exploration Company, Piute County, Utah

I have reviewed the report of examination of Paramount Exploration Company, DMEA Docket 3862, dated November 1, 1955, and received in this office November 8. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

An examination of subject property on August 3, 1955, by the DMEA Field Team revealed evidence indicating that little chance exists of improvement at depth in intensity of the mineralization, which ranges from 0.01 to 0.09 percent U_3O_8 at the 200-foot level. The examiners recommend that the request for DMEA assistance be denied because they do not believe the proposed exploration program will result in discovery of significant amounts of uranium ore.

We reaffirm our recommendation contained in my memorandum of July 23, 1955, denying the DMEA exploration assistance requested by the company.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

John E. Crawford

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

November 15, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

RECEIVED
NOV 1 1955

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Uranium Commodity Committee

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John E. Crawford

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

November 15, 1955

Memorandum

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Uranium Commodity Committee, Room 4445

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We reaffirm our recommendation contained in my memorandum of July 23, 1955, denying the DMEA exploration assistance requested by the company.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

11-7-55 [illegible]

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

224 New Customhouse
Denver 2, Colorado

November 1, 1955

RECEIVED
NOV - 3 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3862 (Uranium), Paramount Exploration Company, Piute County, Utah

Enclosed are the original and three copies of the report pertaining to the above application, which consists of the following:

(a) Joint Summary, Conclusions and Recommendations, by M. M. Gilkey and R. W. Osterstock
(b) Engineering Report by M. M. Gilkey, U. S. Bureau of Mines
(c) Geologic Report by R. W. Osterstock, U. S. Geological Survey
(d) Memoranda of transmittal and comment by Stephen R. Wilson and R. W. Osterstock

The examining team concludes that there is little chance for the discovery of substantial reserves by means of the proposed exploration on the subject property, and they therefore recommend that the application be denied. However, in view of the fact that the applicant is currently exploring the property we recommend that the denial be without prejudice.

W. M. Traver

By J. W. Townsend
J. W. Townsend

E. N. Harshman
E. N. Harshman

Reviewed by
DMEA OPERATING COMMITTEE
11-7-55
(date)

Enclosures

TRANSMITTED
NOV 1 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

RECEIVED
NOV 1 1955
BUREAU OF MINES
Denver, Colorado

October 28, 1955

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Region III

From: Stephen R. Wilson

Subject: Docket No. DMEA-3862 (Uranium), Paramount Exploration Co., Piute County, Utah

Enclosed are the original and 10 copies of an engineering report covering examination of the subject property for appraisal of a request for DMEA assistance. M. M. Gilkey with R. W. Outerstock of the Survey examined the property during August 1955. Also included with the report are copies of a separate section, Summary, Conclusions and Recommendations, and a copy of the brochure.

Representatives of Paramount Exploration Co. have requested a loan of $24,495.60 to explore the property by 240 feet of shaft sinking and 1,200 feet of lateral work on the 440-foot level. The proposed work involves sinking the existing 200-foot vertical shaft.

Rocks present in the general area of the Paramount property include Tertiary lava flows, tuffs and tuff breccias which have been intruded by quartz monzonite, quartz monzonite porphyry, and granite. A younger series of volcanic rocks overlies the above-mentioned flows. Uranium mineralization exposed on the Paramount property is found in a prominent shear zone which appears to be in some way related to the productive Prospector zone a short distance to the west. However, approximately 360 feet of drifting on the zone at the 200-foot level has failed to disclose mineralization approaching ore grade. Samples taken by the applicant at this level gave assay results ranging from 0.01 to 0.09 percent U_3O_8. District evidence indicates that little chance exists that an improvement in intensity of mineralization may be expected at depth on this major shear zone. The examiners therefore believe that the proposed exploration will not result in discovery of significant bodies of uranium ore. Recommendation is therefore made that request for DMEA assistance in exploration on the Paramount property be denied. I concur in this recommendation.

The Paramount property and exploration proposed by the company have been discussed with members of the Atomic Energy Commission.

Stephen R. Wilson
Stephen R. Wilson

Enclosures
cc: W. H. King

11-7-55

DMEA
Date Rec'd
1955
Denver, Colorado

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By M. M. Gilkey and R. W. Osterstock

Paramount Exploration Co., Los Angeles, California, has applied for Government assistance in exploring uranium property in the Marysvale area, Piute County, Utah. The company controls eight lode mining claims. The proposed exploratory program, estimated to cost $84,405.60, consists of sinking an existing vertical shaft 240 feet, with 300 feet of drifting and 900 feet of crosscutting. The property was examined by DMEA personnel August 3, 1955, to appraise the request for Government assistance.

The area in the vicinity of the applicant's property is underlain by volcanic rocks of Tertiary age. The "older" Bullion Canyon series, consisting of latite breccias and tuffs, has been intruded by quartz monzonite, quartz monzonite porphyry, and granite. The "younger" Mt. Belknap series consists of rhyolite flows, flow breccias, and tuffs.

A northeasterly-trending shear zone on the Paramount property may be related to the productive Prospector zone a short distance to the west. However, the zone on the Paramount property has been explored by 360 feet of drifting on the 200-foot level, exposing only minor uranium mineralization. Samples taken in this zone by the applicant gave assay results ranging from 0.01 to 0.09 percent U_3O_8.

11-7-55

No uranium ore has been mined from the Paramount property. There are no known ore reserves.

A breakdown of funds requested by the applicant includes 240 feet of shaft sinking at $126.49 per foot, 300 feet of drifting at $45.04 per foot, and 900 feet of crosscutting at $45.04 per foot. The present shaft is 200 feet in depth.

The examining engineer and geologist do not believe the exploration proposed by the applicant will result in discovery of significant bodies of uranium ore. Exploration on the 200-foot level of the Paramount property has revealed that the prominent shear zone is only weakly mineralized. District evidence indicates that little likelihood exists that an improvement in intensity of mineralization may be expected at depth on this major shear zone. The examiners, therefore, recommend that the request for Government assistance in exploration on the Paramount property, as presently submitted, be denied.

TRANSMITTED

NOV 1 1955

PARAMOUNT EXPLORATION CO.
PIUTE COUNTY, UTAH
DMEA-3862
Uranium

Engineering Report

By M. M. Gilkey
Mining Engineer
Bureau of Mines

11-7-55

PARAMOUNT EXPLORATION CO.
PIUTE COUNTY, UTAH

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Engineering report	
Summary	2
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Ownership and extent	5
History, production and ore reserves	6
Description of the deposits	6
Present status and equipment	9
Proposed exploration	10
Estimation of project costs	11
Conclusions and recommendations	15

ILLUSTRATIONS

Fig. 1 Location map, Paramount Exploration Co., Piute County, Utah
Fig. 2 Surface map
Fig. 3 Underground workings

SUMMARY

The Paramount Exploration Co. submitted an application dated June 16, 1955, for Government assistance in an exploratory project on uranium property in the Marysvale area, Piute County, Utah. Estimated cost of the work is $84,405.60.

An examination of the property was made August 3, 1955, by Geological Survey and Bureau of Mines personnel.

The property is easily accessible. It is situated 3½ miles northeast of Marysvale and lies immediately to the east of the main uranium-producing "central area".

Eight unpatented lode claims are involved in the proposed project. Some confusion seems to exist with regard to title.

No ore has been produced from the claims and there are no known reserves.

Rocks present in the area include Tertiary lava flows, tuffs and tuff breccias intruded by granitic rocks. The uranium deposits occur principally in shear zones and narrow veins in quartz monzonite. Near the surface the uranium minerals are secondary, autunite being the most common. Below depths of 150 feet uranium mineralization generally is in the form of the primary uraninite. The tenor of the ore remains essentially unchanged in passing from the zone of alteration into the primary zone. There is no zone of secondary enrichment.

Immediately west of the proposed project area is the formerly productive Prospector property. The strong Prospector shear zone, striking northeasterly toward the applicant's property, has been followed in Prospector workings, on the 300-foot level, to a north-south fault about 400 feet west of the applicant's property line. Limited exploration in the fault zone has not found the northeasterly continuation of the shear zone. West of the fault, on the same level, an 1800-foot crosscut to the north did not encounter minable ore at intersections with other structures striking toward the applicant's property.

Exploratory work done to date in the project area includes a 200-foot vertical shaft and about 360 feet of drifting, at the 200-foot level, on a shear zone assumed to be a faulted segment of the prospector shear zone or an allied parallel structure. About 850 feet of unexplored ground lies between these workings and the Prospector workings. Sixteen samples taken on the 200-foot level of the Paramount property averaged 0.03 percent U_3O_8. The highest assay was 0.09 percent U_3O_8.

The applicant has a well-equipped mine plant.

Exploratory work proposed by the applicant consists of sinking the existing 200-foot shaft to the 440-foot level, drifting a total distance of 300 feet along the shear zone on the 440-foot level, and crosscutting to the north on that level a distance of 900 feet.

Cost of the sinking is estimated by the applicant at $30,357.60, or $126.49 a foot. Estimated cost of the 1,200 feet of drifting and crosscutting is $54,048, or $45.04 a foot. These estimates are considered to be excessively high. Average costs on three comparable projects completed by DMEA in this area are $66 a foot for sinking and $27 a foot for drifting and crosscutting.

It is recommended that the applicant's request for Government aid be denied for the following reasons:

1. The history of the district indicates that no improvement in grade is to be expected below the present workings.

2. The 1800-foot crosscut, already driven just west of the proposed project area and roughly paralleling the proposed 900-foot crosscut, did not intersect structures of sufficient promise to warrant exploratory work to the east toward the Paramount claims.

The applicant is now preparing to explore, by trenching, the surface north of the present workings. If the results of the trenching are favorable some underground exploration or diamond drilling may be warranted.

INTRODUCTION

The Paramount Exploration Co. submitted an application dated June 16, 1955, for Government aid in an exploratory project estimated to cost $84,405.60, on uranium property situated near Marysvale, in Piute County, Utah. Time to complete the proposed work is estimated at 12 months.

The property was examined August 3, 1955, by R. W. Osterstock of the Geological Survey and M. M. Gilkey of the Bureau of Mines, with R. R. Kennedy representing the applicant. The examiners recommend denial of the request for assistance.

LOCATION, TOPOGRAPHY AND CLIMATE

The property is situated in Piute County, Utah, in Sec. 26, T. 26 S., R. 4 W., and Sec. 4, T. 27 S., R. 3 W., S.L.B. and M. (fig. 1). The area lies about 3½ miles by county road northeast of Marysvale, Utah, population 626. Marysvale, with a branch line of the Denver and Rio Grande Railroad, and on U. S. Highway 89, is the supply and residential point, and has an AEC uranium-ore buying depot.

The area is one of moderate relief. Altitudes at the property range from 6,500 to 7,000 feet, approximately. Vegetation consists mainly of scattered cedar trees.

Year-round mining operations in the area are not seriously hampered by weather conditions.

OWNERSHIP AND EXTENT

The Paramount Exploration Co., address 437 South Hill Street, Los Angeles, California, is owned by the Bankline Oil Co. and its employees, and was incorporated September 16, 1954, for the specific purpose of exploring the property covered by this application. The property, consisting of 8 unpatented lode mining claims recorded in the Piute County Recorder's Office, is held by the Paramount Exploration Co. under an assignment agreement (fig. 2). The brochure does

not include a copy of the assignment. The validity of the title to the claims appears to be in question.

Claims involved in the proposed project are listed below:

	Book	Page
Yellow Canary No. 2	E	206
Anita Gae No. 1	E	222
Grover Gibbs Fraction No. 2	F	115
Lucky Strike No. 2	E	208
Fraction	E	229
Camel No. 1	E	209
Lost Dutchman No. 1	E	85
Lucky Strike No. 2 Fraction	G	444

HISTORY, PRODUCTION AND ORE RESERVES

The eight claims were located over a six-year period, extending from 1948 to 1954. There has been no production from any of the claims and there are no known ore reserves.

DESCRIPTION OF THE DEPOSITS

Results of exploration for uranium ores in the Marysvale district indicate that ore bodies of commercial grade and size occur within an area extending north and south a distance of approximately 3,000 feet. This "central" producing area extends from the Prospector mine on the south to the Glenn mine on the north. Claims of the Paramount Exploration Co. lie adjacent to the east side of the productive area. The Aubert shaft, in the proposed area, is about 1,400 feet N. 65° E. of the Prospector inclined shaft.

Rocks present in the productive area include Tertiary lava flows, tuffs and tuff breccias intruded by quartz monzonite, quartz monzonite porphyry and granite. The uranium deposits are found principally in shear zones and narrow veins in the intrusive granitic rocks, mainly in the quartz monzonite. Production from deposits in the overlying volcanics, such as the deposit in rhyolite at the Glenn mine, has been comparatively small.

Mineralization includes both primary and secondary uranium minerals. The primary urananite is generally found at depths in excess of 150 feet. Autunite is the most common of the secondary uranium minerals found near the surface. The tenor of the ore remains essentially unchanged in passing from the zone of alteration into the primary zone. There is no zone of secondary enrichment.

The most prominent and productive structural element is steeply dipping, northeast-southwest shearing. In the Prospector property, on the 300-foot level, one of the ore-bearing shear zones has been followed approximately 350 feet northeasterly to its intersection with a north-south fault about 400 feet west of the Paramount property line (fig. 2). Samples taken from this drift show that the ore drops below minable grade at a point approximately 50 feet southwest of the fault. Samples taken along the last 50 feet assayed about 0.02 percent U_3O_8.

Mr. R. R. Kennedy, the applicant's geologist, states that the continuation of the shear zone beyond the fault has not been found in a very limited underground search conducted by operators of the Prospector mine. Bert Myerson, AEC geologist, stated that this exploratory work was confined to the fault zone and that a few tons of commercial ore were mined in the faulted area. It is assumed by the applicant that the northeasterly trending structure exposed in the Paramount workings is a faulted segment of the Prospector shear zone. The country rock in the Paramount workings is quartz monzonite. Sixteen samples taken by the applicant from the drift extending some 360 feet along this structure at the 200-foot level assayed from 0.01 to 0.09 percent U_3O_8 (fig. 3). The arithmetical average is 0.031 percent U_3O_8.

The assay results as received from the applicant are listed below. The samples were taken from the drift on the shear zone, 200-foot level, Aubert shaft.

Samples West of Crosscut

Distance from Crosscut	Sample Length	Percent U_3O_8
13 feet		0.05
20 "		.03
40 "		.04
60 "		.04
80 "		.03
40 "	5 feet	0.014
60 "	5 "	0.011
80 "	5½ "	0.012
100 "	5 "	0.016
120 "	5½ "	0.021
140 "	4½ "	0.014
160 "	5 "	0.020
160 " (small vein)	—	0.046

Samples East of Crosscut

Distance from Crosscut	Sample Length	Percent U_3O_8
100 feet	4 feet	0.038
120 "	$5\frac{1}{2}$ "	0.026
140 "	$4\frac{1}{2}$ "	0.090

PRESENT STATUS AND EQUIPMENT

Existing workings on the property consist of a vertical, 200-foot shaft, a 150-foot crosscut to the south from the bottom of the shaft, and about 360 feet of drifting along the shear zone intersected by the crosscut.

The shaft is sunk in the hanging wall, in firm, dry ground about 50 feet north of the shear zone. It consists of a hoisting compartment and a manway. A cage is used for hoisting. Shaft dimensions inside timber are 6' 4" by 4' 6". Posts, wall plates and end plates are 8" by 8" timber. The shaft is well constructed.

The crosscut is $5\frac{1}{2}$' wide by $7\frac{1}{2}$' high, in solid ground and requires no supporting timber. The drift is also $5\frac{1}{2}$' by $7\frac{1}{2}$' in cross section and is untimbered. Northeast of the crosscut, the drift is in firm ground. On the southwest side of the crosscut, where the rock is altered and loose, the company is allowing the drift to cave.

The ground drills and breaks well. A 12-hole round is drilled in crosscuts and drifts. Advance per round is 5 feet.

The surface plant and equipment are described in detail in the application. These include a 35-foot headframe; two 16' by 20' steel,

Butler "Pan-L-frame" buildings (for hoist and compressor); a 60-kw., diesel-driven generator set; a 30-hp. electric hoist; a 365-c.f.m., diesel-driven compressor, and a mucking machine. The mine plant is exceptionally well arranged and the equipment is in good condition.

PROPOSED EXPLORATION

The proposed exploratory work consists of 240 feet of shaft sinking, 300 feet of drifting, and 900 feet of crosscutting, as described below:

1. Sinking the existing, vertical, 200-foot shaft an additional 240 feet to the 440-foot level. (The shaft consists of a hoisting compartment and a manway, and is 6' 4" by 4' 6" in the clear of timber).

2. Drifting (5½' by 7½') along the shear zone at the 440-foot level a total distance of 300 feet from a point directly south of the bottom of the shaft. The drifting will consist of 150 feet of exploration to the northeast and 150 feet to the southwest along the shear zone. (Crosscutting from the shaft to the shear zone, a distance of about 50 feet, is included in item No. 3).

3. Crosscutting (5½' by 7½') northward a total distance of 900 feet from the drift on the shear zone. The purpose of the crosscut is to intersect east-west and northeast-southwest shear zones exposed to the west in properties operated by the Vanadium Corp. of America.

A crosscut driven in V.C.A. ground, from the Prospector mine to the Freedom No. 1, intersects a number of these structures; but available information indicates that the uranium mineralization is too weak in that area to warrant exploratory drifting to the east toward the proposed project area.

Generally good ground conditions are anticipated in the proposed project area. It is assumed that about half, or 150 feet, of the drifting and only a small part of the 900 feet of crosscutting will require timber. The shaft will be completely timbered and lagged. It is unlikely that ground water will become a problem.

The applicant proposes to start the work within 10 days and to complete the work within 12 months of the date of a project contract.

ESTIMATION OF PROJECT COSTS

The applicant's estimation of the total cost of the project is $84,405.60. A breakdown of the costs is presented in the application. The following is a general summary and discussion of the costs.

Shaft Sinking

Shaft sinking is expected to progress at the rate of 75 feet a month, on a two-shift, 6-day-a-week basis. To complete 240 feet of sinking at this rate will require a little over 3 months. Estimated cost of the sinking is computed on a monthly-expenditure basis. Expenditures are placed in six categories.

Estimated monthly cost of shaft sinking
- (at 75 feet advance per month)

		Cost per month
Labor, supervision and consultants		$ 3,792.97
Materials and supplies		2,219.04
Operating equipment, owned, valuation	$28,537.93	
Depreciation at 3 percent per month	856.14	
Rented (rental applied against purchase)	561.00	1,417.14
Miscellaneous (includes $750 for maintenance of operating equipment, payroll tax and insurance		1,195.47
Contingencies, at 10 percent of other costs		862.25
Total estimated cost of sinking per month		$ 9,486.87

Estimated unit cost for shaft sinking is $\frac{\$9,486.87}{75}$ = $ 126.49 a foot

Estimated total cost of sinking 240 feet to the 440-foot level ---------- $30,357.60

Drifting and Crosscutting

Drifting and crosscutting are expected to progress at the rate of 200 feet a month on a two-shift, six-day-a-week basis. To complete the entire 1,200 feet at this rate would require 6 months. Estimated cost of this work is computed on a monthly expenditure basis with cost items placed in six categories as is done for shaft sinking.

Estimated monthly cost of drifting and crosscutting
(at 200 feet advance per month)

		Cost per month
Labor, supervision and consultants (same as for shaft sinking)		$ 3,792.97
Materials and supplies		1,293.39
Operating equipment, owned, valuation (same as for shaft sinking)	$28,537.93	
20-lb. rail, 945 feet	657.19	
	$29,195.12	

Depreciation at 3 percent per month ----------		$ 875.85	
Rented (rental applied against purchase) Compressor ------	$561		
Mucking machine -	410	971.00	$ 1,846.85
Miscellaneous (same as for shaft sinking) ----------		$ 1,195.47	
Assays for U_3O_8, 20 at $3 each ---------		60.00	1,255.47
Contingencies, at 10 percent of other costs --------			818.87
Total estimated cost of drifting and crosscutting			$9,007.66

Estimated unit cost for drifting and crosscutting is $\frac{\$9,007.55}{200}$ = $45.04 a foot

Estimated cost of entire 1,200 feet of drifting and crosscutting ---------- $54,048.00

Estimated Total Cost of the Proposed Project

Shaft sinking ----------	$30,357.60
Drifting and crosscutting ----------	54,048.00
Total ----------	$84,405.60

In the light of experience in the Marysvale area, the estimated unit costs appear to be too high. Costs on three DMEA projects, (Docket Nos. 2135, 2271 and 2573) completed in this district under generally similar conditions, averaged $66 a foot for shaft sinking and $27 a foot for drifting and crosscutting. Average depth of the three shafts is 295 feet. Costs on long-form contract No. Idm-E387 (on actual cost basis), Docket No. 2271, Glenny-Cutler Mining Co. were approximately $63 a foot for shaft sinking to a depth of 324 feet, and $22 a foot for drifting.

In the applicant's estimate, the cost of the first item (Labor, supervision and consultants) could be considerably reduced without seriously affecting the efficiency of the operation. The crew could consist of two miners and a hoistman on each shift, with the company geologist acting as supervisor. One of the miners on each shift could act as lead man at $2 an hour.

Total estimated cost of materials and supplies is reasonable. Cost of timber for the shaft for one month, or 75 feet of advance, is estimated at $1,208.38. This is a high estimate, as the shaft will require only about 500 board feet per 5-foot set, which, at $100 per M., would mean $50 per set, or $750 per month for 75 feet of advance. However, cost of timber for drifting, overlooked in the estimation of drifting costs, would probably total $600.00. Cost of explosives for sinking at $3.76 a foot, and for drifting and crosscutting at $1.88 a foot, are not excessive.

Estimated operating equipment depreciation costs are rather high inasmuch as they are based on depreciation rate of 3 percent per month, or on a depreciation period of only 33 months. Also, rental payments to apply on the purchase prices of the compressor and the mucking machine would not be allowable project costs.

Under miscellaneous, the cost of telephone service, $100 a month, would not be an allowable cost. The total amount of payroll taxes and insurance, however, is well under the usual 10 or 11 percent of the total amount of the payroll.

Contingencies, the last item in each of the two cost estimates, is listed at 10 percent of the total of the other costs. Ten percent is considered to be an excessively high estimation of allowable costs in this category.

CONCLUSIONS AND RECOMMENDATIONS

Approximately 360 feet of exploratory drifting along the shear zone has already been completed on the 200-foot level by the applicant. No ore of commercial grade has been encountered. The explored structure appears to be the northeasterly continuation of the Prospector shear zone or an allied parallel shear zone. The Prospector is one of the major producers in the "central" area to the west.

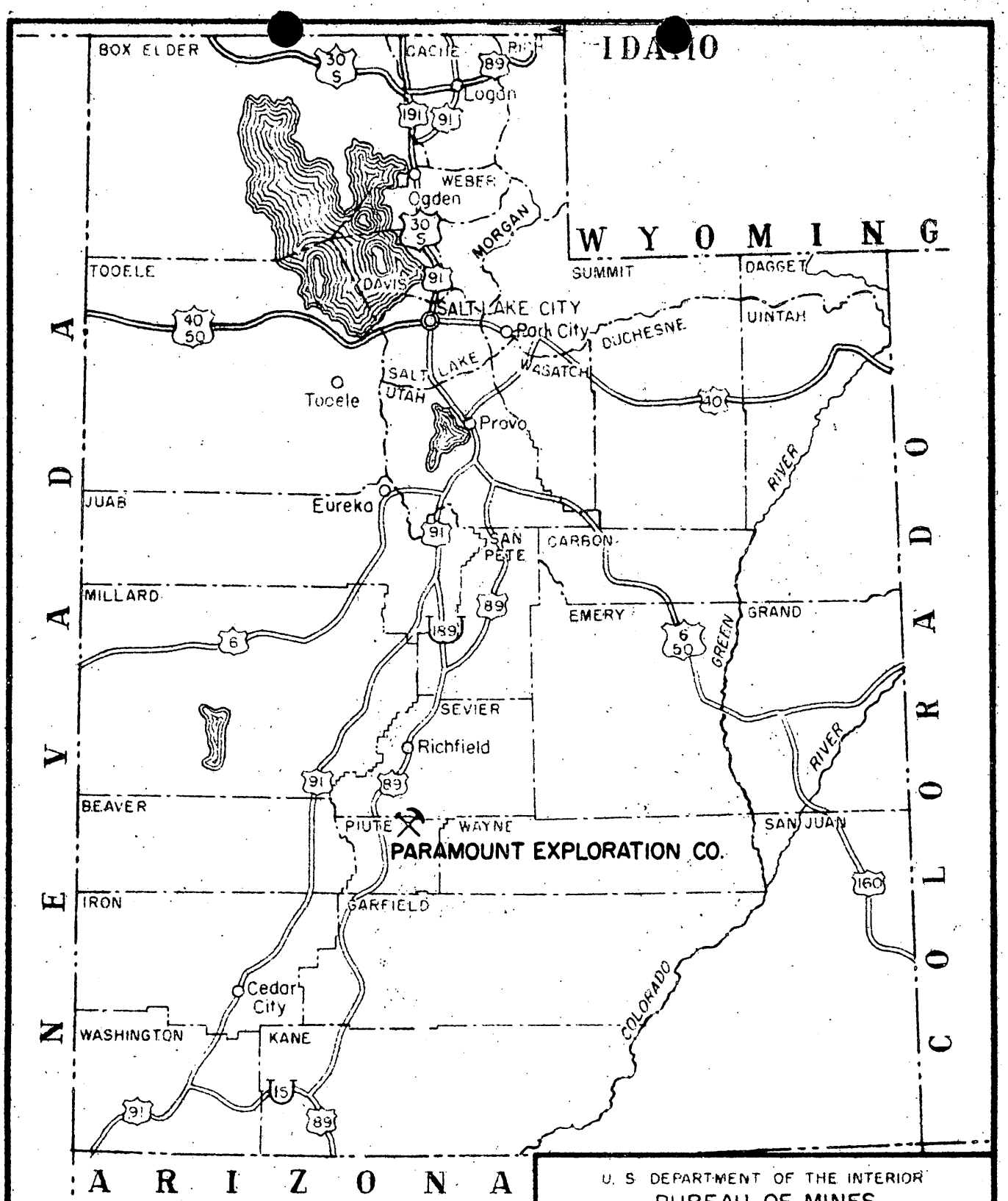
The applicant's proposal to explore the shear zone at the 440-foot level cannot be justified by the assumption that leaching has removed a large part of the uranium mineralization from higher levels. The history of the area indicates that leaching has little effect on the grade of ore.

Driving the proposed 900-foot crosscut to the north does not appear to be warranted, inasmuch as available information indicates that crosscutting to the north, already completed in V.C.A. ground adjacent on the west, failed to encounter minable ore.

Therefore, it is recommended that the applicant's request for Government aid be denied. Bert Myerson, AEC geologist, formerly stationed in the Marysvale area, concurs in this recommendation.

Mr. Myerson believes, however, that the area to the north of the Aubert shaft may warrant additional surface trenching. Some trenching has already been done in that area.

The applicant now plans a surface-trenching program in the area north of the Aubert shaft, to be carried out on company account, at an estimated cost of $4,000. If the results of the trenching are favorable, the applicant may ask for reconsideration of the present application or may submit a revised application.



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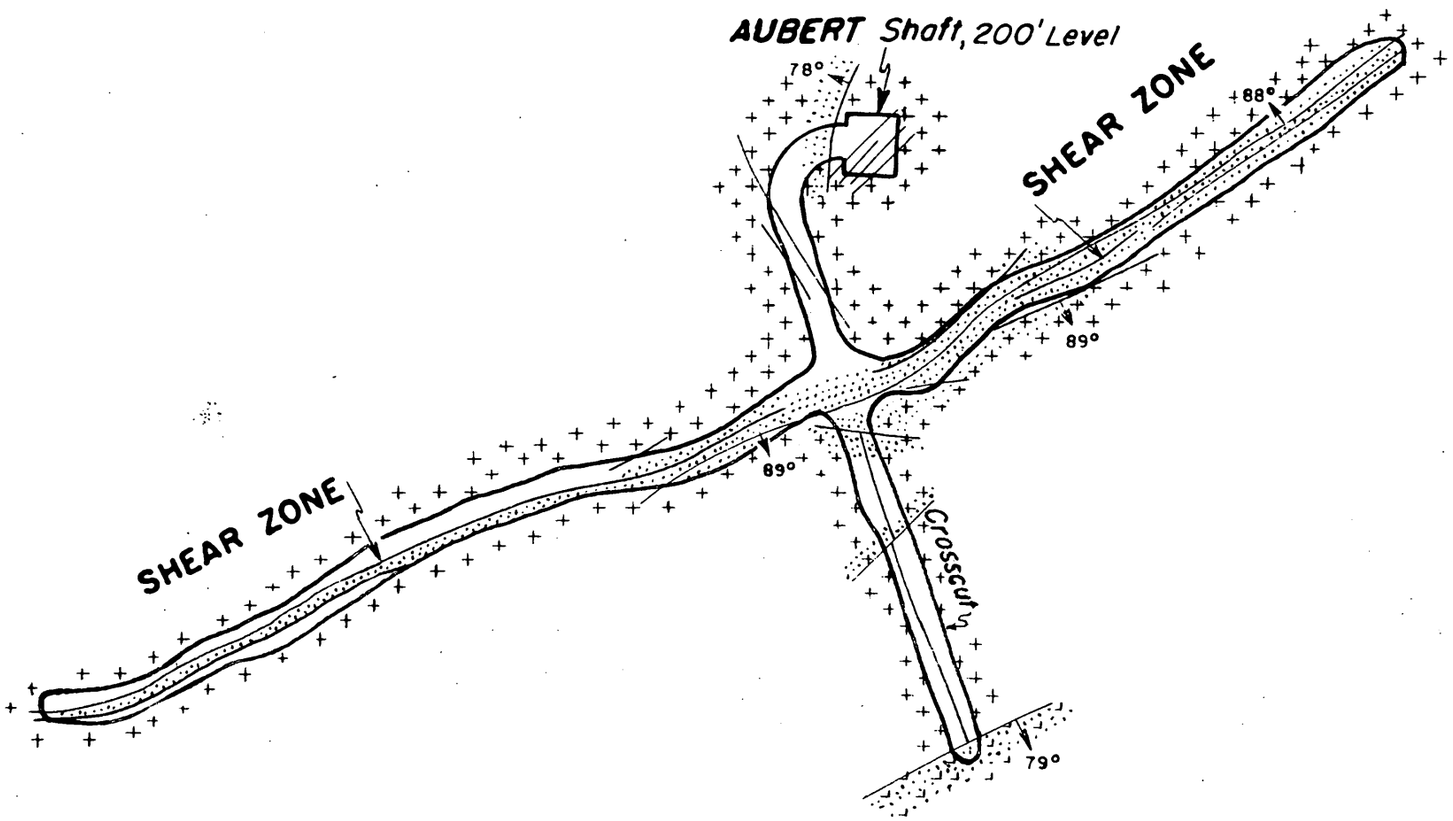
SCALE OF MILES

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 DMEA Docket No. 3862
Location Map

PARAMOUNT EXPLORATION CO.
MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

ENGINEER *Millard M. GILKEY*	DATE: OCT. 5, 1955
TRACED: OCT., 1955, A.P.T.S.	1900 - 353 - E
CHECKED:	



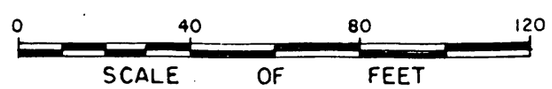
LEGEND

- COARSE GRAINED QUARTZ MONZONITE
- FINE GRAINED MONZONITE
- SHEAR ZONE

NOTE

DATA TRACED FROM COMPANY MAP.

Plan of Underground Workings



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig.3 DMEA Docket No. 3862

Underground Workings

PARAMOUNT EXPLORATION CO.

MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

ENGINEER: *Millard M. GILKEY*	DATE: OCT. 7, 1955
TRACED: OCT., 1955; A.P.T.S.	1900 – 355 – F
CHECKED:	

DMEA
Date Rec'd.

OCT 31 1955

BUREAU OF MINES
Denver, Colorado

TRANSMITTED

NOV 1 1955

Room 208, 202 So. West Temple
Salt Lake City 1, Utah
October 21, 1955

Memorandum

To: E. H. Harshman, DMEA Field Team, Region III

From: R. W. Ostergteek

Subject: DMEA Docket 3062 (Uranium) Paramount Exploration Co., Marysvale District, Piute County, Utah.

Enclosed are 11 copies of a geologic report of examination on the subject property. The Paramount Exploration Co. applied for DMEA assistance for uranium exploration on their property in the Marysvale District, Utah. Total proposed expenditure for the exploration work is $4,475.62.

Field examination of the subject property revealed that uranium mineralization in the strongest structure exposed to date was for ballast ore grade and District experience suggests little chance of improvement in grade with depth. Therefore, additional exploration of this structure appears fruitless and exploration of lesser structures is even less desirable. It is recommended, therefore, that the application for government assistance be denied. It is further recommended that the application be held for reconsideration pending the completion of surface exploration now under way at the property.

Also enclosed are claim and areal maps of the Marysvale area which are known to contain uranium occurrences. Apparently there is at present no authoritative composite map of the Marysvale District. These maps are to used at your discretion, they may or may not suffice in complying with Selfridge's request dated 7/2/55.

E. H. Harshman
for R. W. Ostergteek

11-7-55

TRANSMITTED

NOV 1 1955

PARAMOUNT EXPLORATION COMPANY, PARAMOUNT AUBERT SHAFT

PIUTE COUNTY, UTAH

DMEA Docket 3862

Initial Geologic Report

by

R. W. Osterstock
U. S. Geological Survey

Received by
11-7-55

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Introduction	2
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History and Production	2
Geology	3
Ore deposits	4
Ore reserves	7
Proposed exploration	7
Conclusions and recommendations	7

ILLUSTRATIONS

Figure 1. Index map.

Figure 2. Geologic Sketch Map of Paramount 200 level.

Figure 3. Map showing Proposed Exploration.

DMEA Docket 3862 (Uranium), Paramount Exploration Company,
Paramount Aubert shaft, Piute County, Utah

SUMMARY

The Paramount Exploration Company applied for government assistance in their search for uranium ores at their property in the Marysvale area, Piute County, Utah. The property was examined by DMEA personnel in August 1955.

The Paramount claim area is on the fringe of the productive central Marysvale area. The entire area is underlain by Tertiary volcanics and intrusives. In the central productive area, ore mineralization is confined principally to large persistent parallel sets of northeasterly trending shear zones. The most prominent of these shears are the Prospector, the Freedom 1, and the Freedom 2. One of these zones, the Prospector may extend into the Paramount claim area but work done on this structure by the applicant has not disclosed any promising mineralization. The applicant has proposed additional shaft sinking and drifting on the major known shear on the Paramount property as well as crosscutting northerly to explore for minor shear zones first noted in a foreign crosscut about 1000 feet to the west.

The lack of encouraging shows of mineralization along the strong structure exposed by present Paramount workings along with the historically established practice in the district of finding ore producing structures persistent from the surface has led the examining DMEA personnel to recommend denial of the loan application. Present surface operations by the applicant may bring sufficient new information to light to warrant reconsideration for DMEA participation.

INTRODUCTION

The Paramount Exploration Company, a Nevada Corporation applied for a DMEA loan Docket No. 3862, to aid in exploration for uranium ores on their property in the Marysvale district, Utah. The application was received June 20, 1955. At the request of the DMEA Field Team, Region III a field examination of the subject property was conducted on August 3, 1955 by R. W. Osterstock, USGS, and M. M. Gilkey, USBM. Mr. R. R. Kennedy, company geologist, accompanied the examiners in the field.

Location and Accessibility

The Paramount property is located in Sec. 4, T. 24 S., R. 3 W., in the Marysvale (or Durkee) mining district, Piute County, Utah (see Fig. 1). The property is situate on the southwest slopes of the Antelope Range approximately 5 miles east of the Sevier River. The Paramount shaft, near the western edge of the claim area, may be reached by travelling on good graded roads approximately 5 miles northeast of Marysvale, Utah.

History and Production

The applicant holds the eight claims included under the present DMEA application by assignment. However, inspection of claim maps in the area reveals that an extremely complex situation exists and there may well be cloudy titles on some of the claims included in the applicant's proposals.

The property is developed by surface dozer trenches and a vertical one compartment shaft with manway to the 200 level with approximately 500 feet of lateral work on the 200 level. There is no recorded production from any of the workings on the applicant's property.

GEOLOGY

The Marysvale, Utah region is underlain by volcanic rocks of Tertiary age. The "older" Bullion Canyon series consisting of latite breccias, tuffs, and flows, has been intruded by stocks, dikes, and plugs of quartz monzonite, granite, and related rocks. Following a period of erosion, further volcanic activity resulted in the deposition of the "younger" Tertiary Mt. Belknap rhyolitic flows, flow breccias, and tuffs as well as the later Dry Hollow, quartz latite and latite flows and the interbedded Joe Lott rhyolite and latite tuff. Olivine-basalt flows of late Tertiary or Quaternary age were subsequently extruded over parts of the area.

Uraniferous mineralization in the region is mostly locallized in the Antelope Range, an east-striking structure north of Marysvale, Utah, which extends from the Tushar Range on the west to the Sevier Plateau on the east. Tertiary flows of the younger volcanic series dip north and south from the axial portion of the Antelope Range.

Much of the Paramount claim area is covered by slope wash and therefore geologic identification of the various rock units must depend upon identification of residual minerals in the soils.

The primary structural elements in the central Marysvale area, of which the Paramount property represents a fringe zone, are the northeasterly trending vertical shears. These broad shear zones with considerable alteration on both walls are sometimes visible at the surface, however on the Paramount property slope wash disguises any such structures which may exist. The most prominent of the shear zones are the Prospector, the Freedom No. 1, and the Freedom No. 2. Each of these has been exposed over a considerable strike length by underground exploration. Other diversely oriented minor shear zones intersect the major northeasterly trending zones, however, there is not in most cases an appreciable displacement at these intersections.

Alteration is very common in the district, it is most noticeable in the Bullion Canyon volcanics in which the alteration has taken the form of kalinization, alunitization, silicification. Although alteration is a fairly general feature in the Bullion Canyon its effects are much more intense in the zone adjoining the northeasterly trending fissures. Thus in many instances intensity of alteration may serve as a key to the location of the northeasterly trending fissure zones.

ORE DEPOSITS

Uranium mineralization in the central Marysvale area is largely confined to narrow veins and gouge filled northeasterly trending fissures principally in the quartz monzonite intrusives. Lesser amounts of uranium mineralization, mostly secondary, have been found in the overlying volcanic strata.

Major production from the central Marysvale area has been realized from the northeasterly trending fissure zones with the higher grade ore bodies apparently centered in the most highly brecciated and relatively open portions of the shear zones. Larger lower grade uraniferous bodies are located at the intersections of shears with some of the diversely oriented minor fissure zones as well as occasionally at the quartz monzonite and younger? volcanic contact.

The primary minerals occurring in the fissures are pitchblende, fluorite, magnetite, pyrite, quartz, calcite, and jordisite. The primary ore minerals are generally completely altered from the surface to a depth of about 150 feet. Secondary minerals occurring in this upper oxidized zone are autunite, schroeckingerite, torbernite, and several unidentified yellow minerals. Exposure of the producing structures at depth has revealed that there is very little enrichment in the oxidized zone inasmuch as virtually no change in the grade occurs as the protore zone is encountered. Each of the producing structures has retained essentially the same grade from its surface exposure to its deepest exposed portion.

Thus it is implied that veins and fissures carrying little or no uraniferous mineralization at or near the surface may not be expected to improve in grade with depth.

On the Paramount property a shaft was sunk to the 200 level and from this point lateral workings have explored what may be the offset extension of the Prospector fissure zone. Strike length exposure on the 200 level of approximately 360 feet along a strong, altered northeasterly trending shear zone has revealed only very minor uraniferous mineralization. Bull quartz in stringers and pods occurs sporadically in the shear zone, allied with manganese stain and limonite stain of the gouge walls. Some hematite is reported by the applicants to be present along the walls of the drift. One selected high grade sample near the northeast end of the drift is reported by the applicants to have assayed .09 percent U_3O_8. A scintilator traverse of the exposed vein zone by the examining DMEA team revealed no portion of the shear zone to be appreciably above normal background readings. A second shear zone (see Fig. 2) of lesser importance was encountered in the south end of the 200 level crosscut from the Paramount Aubert shaft. This zone separates coarse grained quartz monzonite from a finer grained facies. No hydrothermal mineralization of any form is noted at this contact.

The Prospector shear zone in the central Marysvale area has proved to be an extensively mineralized and persistent structure. As this zone was followed to the northeast on the VCA property it was found to be cut off by a northerly trending cross fault. A small amount of exploration through this cross fault in VCA ground has indicated that the east wall has moved relatively south. Although the Prospector fissure zone was mineralized up to this fault, little or no mineralization was located beyond the fault. Thus the question arises as to whether this small cross fault may be pre-ore and thereby have affected a damming action

at its intersection with the Prospector shear zone. Consequently the northeastern offset extension of the Prospector may not have received mineralizing solutions in sufficient quantity to have formed workable mineral deposits.

Although the northeasterly trending shear zone exposed on the 200 level of the Paramount property may not be the true offset extension of the Prospector shear zone, it is certainly a strong persistent zone which should have been receptive to ore depositing solutions. That no ore bodies are found on this structure is extremely discouraging. Assay samples taken along the exposed vein structure on the 200 level are noted on figure 2 accompanying this report. These assays have been provided by the applicant, however, AEC geologists have been unable to verify even the small amount of uranium mineralization noted. There is no reason to believe that development of this structure with greater depth will encounter any more intense mineralizing conditions than those already noted on the 200 level.

A long crosscut driven on the Prospector 300 level on foreign (VCA) ground to the west of the Paramount holdings has encountered a series of small northeasterly trending fissure zones carrying very minor mineralization in a few instances (see Fig. 3). The Vanadium Corporation of America, owner of these properties, has not seen fit to attempt development or exploration of the extensions of any of these thin, weakly mineralized structures to the northeast in the direction of the Paramount property. All of these structures where exposed are within the central Marysvale area which has in the past been the most productive portion of the entire district. Projection of these structures to the northeast into the Paramount property must first be reckoned in terms of the north trending cross fault which has offset the main Prospector shear zone. It is entirely possible that this same crossfault which may have provided a damming

effect to solutions coming from the west along the Prospector structure may also have provided a damming effect on these smaller less important structures. It would therefore seem that hope of encountering mineable ore bodies on these minor structures is considerably lessened by the discouraging results of the work done by the Paramount Exploration Company on their 200 level along the strong but very weakly mineralized shear zone tentatively identified as the offset extension of the Prospector shear zone.

ORE RESERVES

There are no reserves of any classification on the Paramount property.

PROPOSED EXPLORATION

The applicants have submitted an exploration program costing $84,405.62. This exploration proposal consists of deepening the present 200 foot Paramount Aubert shaft to a depth of 440 feet or 240 feet of additional shaft sinking. The applicants have further proposed exploration on the "Prospector" structure for a distance of 150 feet northeasterly and southwesterly from the new 440 level. It is also proposed that a crosscut be driven northward a distance of 900 feet for the purpose of intersecting a number of east-west and northeast-southwest mineralized shears noted in the north-south VCA Prospector 300 level crosscut. Another phase of exploration for which no cost request has been made is a diamond drilling program to follow the above noted underground exploration.

CONCLUSIONS AND RECOMMENDATIONS

Following the field examination of the subject property and discussion of the property with Mr. Bert Meyerson of the Salt Lake Exploration Branch, Atomic Energy Commission, it was pointed out to the applicants that the proposed exploration program was inordinately expensive in view of the fact that past exploration ventures in the Marysvale area have been primarily conducted from the surface.

Exploration in the district has been based on the knowledge that all of the productive fissure zones thus far noted in the Marysvale district have maintained their productivity from their surface exposure with little variation in grade. It was therefore suggested to the applicants that some surficial exploration might be in order prior to consideration of the more expensive underground exploration as requested. To a certain extent such bulldozer trenching on the surface will be made difficult because of the topographic irregularities of the zone to be explored, namely, that portion of the property lying north of the Paramount Aubert shaft in which the projected northeasterly trending fissures intersected on the Prospector 300 level crosscut may be located.

The applicants have undertaken a bulldozer surface trenching program at their own expense. These operations are presently under way and no results are forthcoming as yet.

It is concluded that the exploration program as proposed by the applicants is not adapted to the structural and mineralogic setting of the fissure systems as they are presently known. There is too little evidence of the existence of mineralization of the small northeasterly trending shear zones noted in the Prospector 300 level crosscut in the area of the proposed exploration nor can the structures themselves be projected with any degree of confidence. It is further concluded that present development work along the "Prospector" shear zone from the 200 level off the Paramount Aubert shaft should have encountered mineable grade uranium mineralization, if this area had received sufficient mineralizing solutions to have produced such deposits in any of the sought for structures.

It is recommended that the applicant's request for government assistance in exploring the Paramount property by underground methods be denied. It is further recommended that this file be retained on the active list until the applicant has

completed his present surface exploration program on the property. In the event that this program develops information which may make underground exploration of the property appear more feasible, DMEA should reconsider the underground exploration program. This report has been discussed with and approved by Mr. E. E. Thurlow, Chief, Salt Lake Exploration Branch of the Atomic Energy Commission.

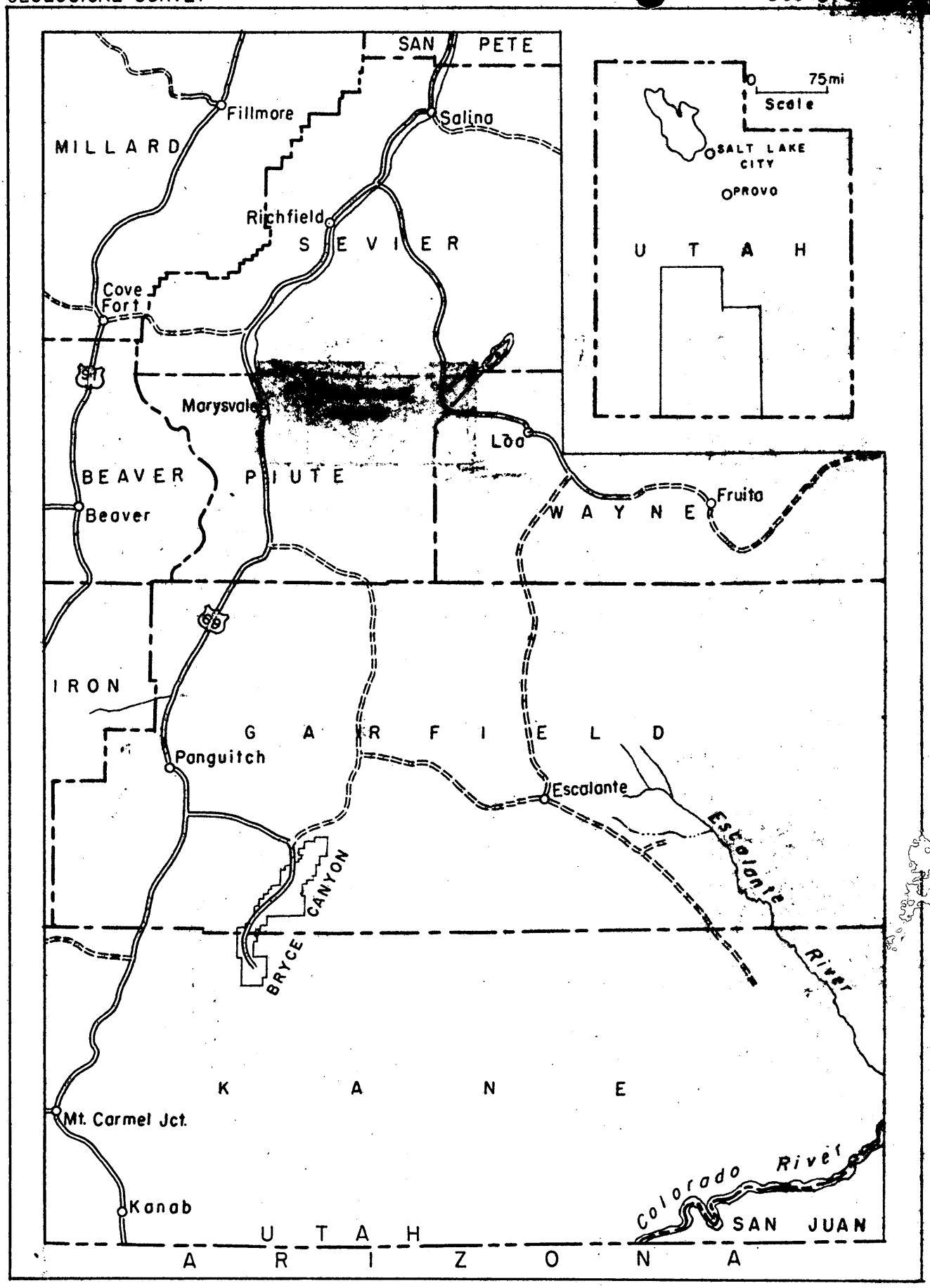
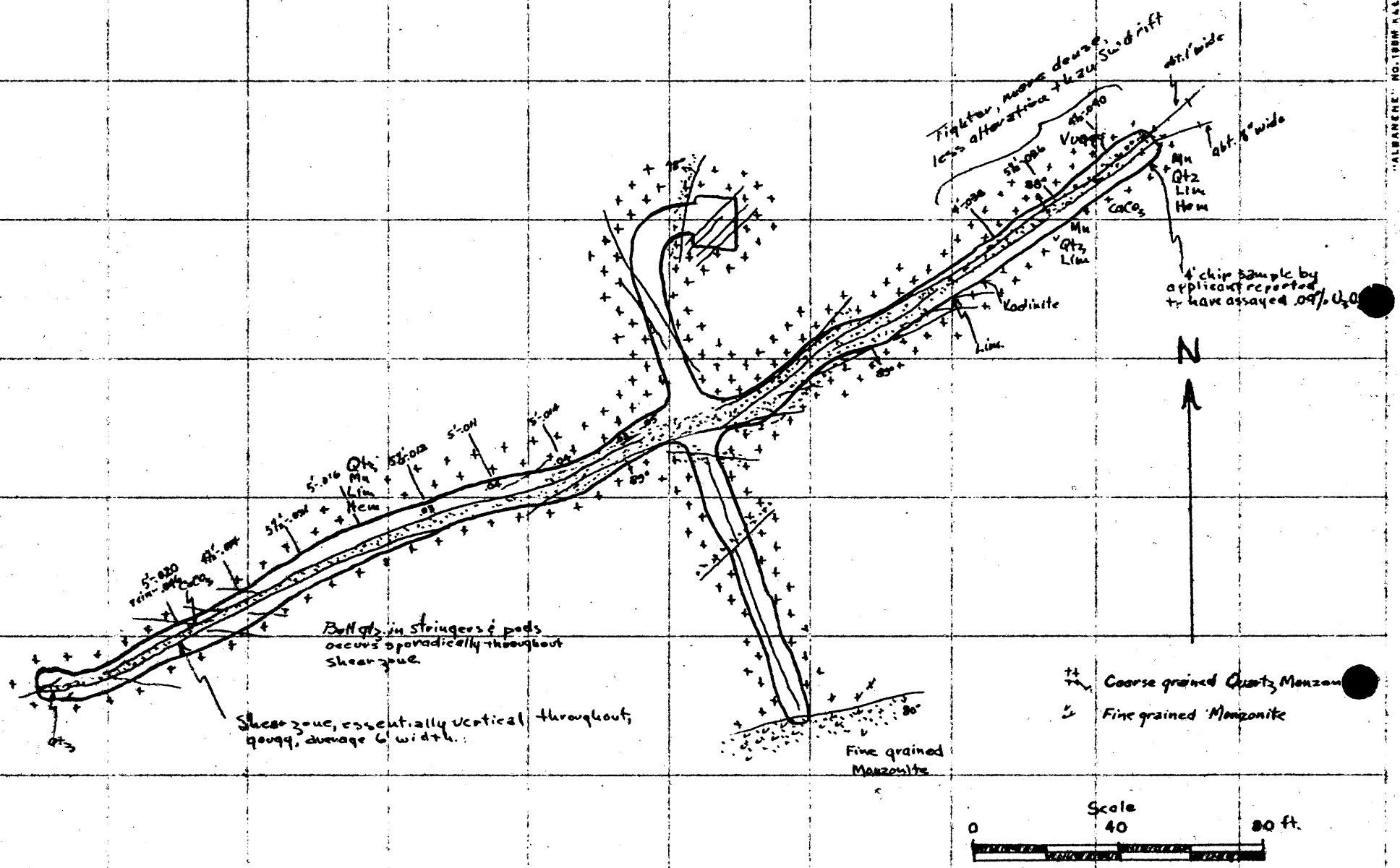


FIG. 1 INDEX MAP OF UTAH

0 5 10 15 20 mi.
Scale



GEOLOGIC SKETCH MAP OF PARAMOUNT '200' LEVEL

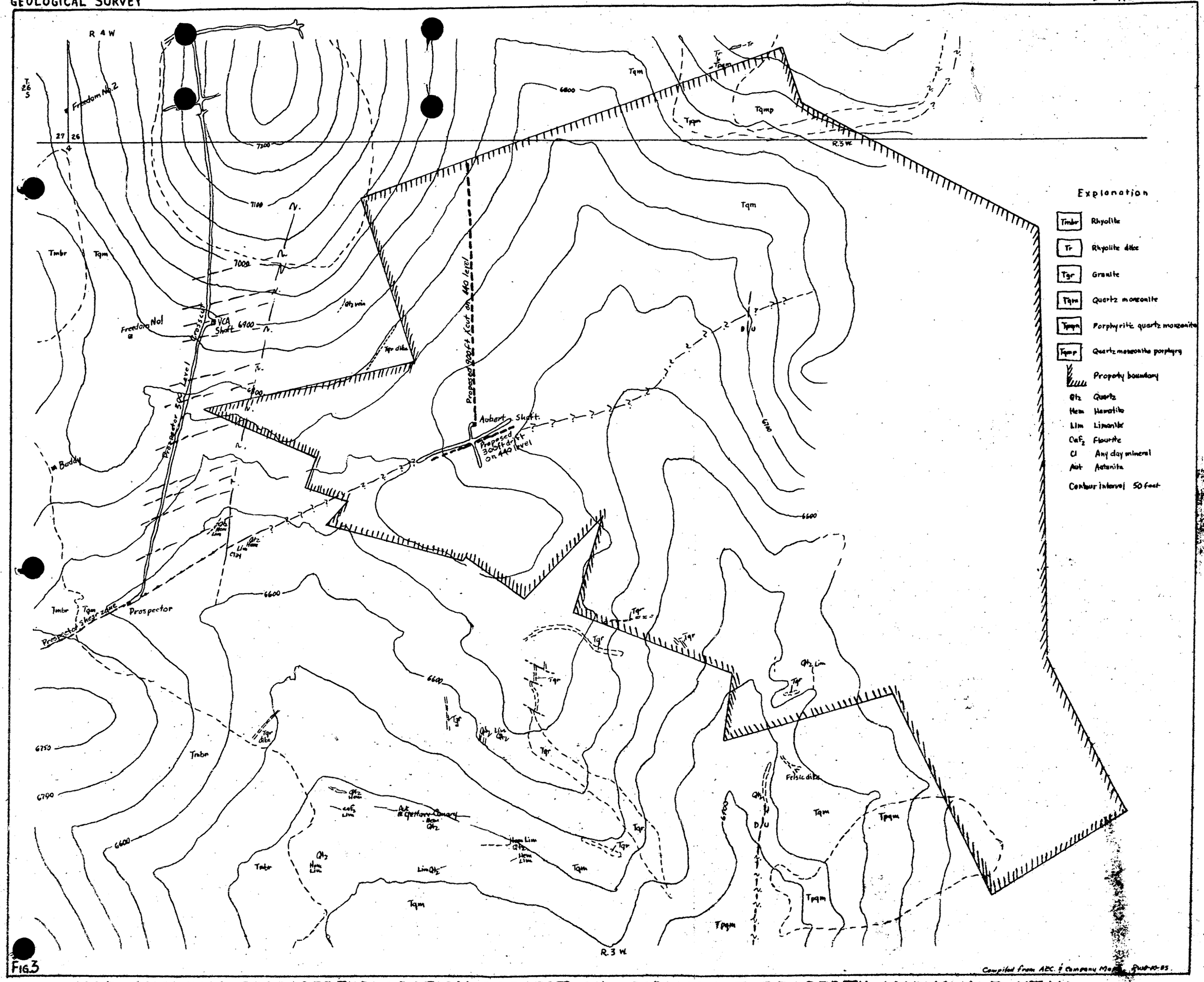
MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

FIG. 2

Adapted from Company map.
Rev. 4-55

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET NO. 3862



Compiled from AEC & Company Maps, Aug-10-55.

FIG. 3

MAP SHOWING PROPOSED EXPLORATION PROJECT ON PARAMOUNT PROPERTY, MARYSVALE, UTAH

11/4/55 gla

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

RECEIVED
NOV - 8 1955

224 New Customhouse
Denver 2, Colorado

November 1, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3862 (Uranium), Paramount Exploration Company, Piute County, Utah

Enclosed are the original and three copies of the report pertaining to the above application, which consists of the following:

(a) Joint Summary, Conclusions and Recommendations, by M. M. Gilkey and R. W. Osterstock
(b) Engineering Report by M. M. Gilkey, U. S. Bureau of Mines
(c) Geologic Report by R. W. Osterstock, U. S. Geological Survey
(d) Memoranda of transmittal and comment by Stephen R. Wilson and R. W. Osterstock

The examining team concludes that there is little chance for the discovery of substantial reserves by means of the proposed exploration on the subject property, and they therefore recommend that the application be denied. However, in view of the fact that the applicant is currently exploring the property we recommend that the denial be without prejudice.

W. M. Traver

By J. W. Townsend
J. W. Townsend

E. N. Harshman
E. N. Harshman

Enclosures

11-7-55

TRANSMITTED

NOV 1 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

October 26, 1955

RECEIVED
Date Rec'd
OCT 31 1955
BUREAU OF MINES
Denver, Colo.

Memorandum

To: W. H. Trower, Executive Officer, RMRA Field Team, Region III

From: Stephen R. Wilson

Subject: Docket No. RMRA-2002 (Uranium), Paramount Exploration Co., Piute County, Utah

Enclosed are the original and 10 copies of an engineering report covering examination of the subject property for appraisal of a request for RMRA assistance. M. M. Gilbey with R. W. Osterwick of the Survey examined the property during August 1955. Also included with the report are copies of a separate section, Summary, Conclusions and Recommendations, and a copy of the brochure.

Representatives of Paramount Exploration Co. have requested a loan of $94,685.00 to explore the property by 300 feet of shaft sinking and 1,000 feet of lateral work on the 440-foot level. The proposed work involves sinking the existing 300-foot vertical shaft.

Rocks present in the general area of the Paramount property include Tertiary lava flows, tuffs and tuff breccias which have been intruded by quartz monzonite, quartz monzonite porphyry, and granite. A younger series of volcanic rocks overlies the above-mentioned flows. Uranium mineralization exposed on the Paramount property is found in a prominent shear zone which appears to be in some way related to the productive Prospector zone a short distance to the west. However, approximately 300 feet of drifting on the zone at the 300-foot level has failed to disclose mineralization approaching ore grade. Samples taken by the applicant at this level gave assay results ranging from 0.01 to 0.03 percent U_3O_8. Historical evidence indicates that little chance exists that an improvement in intensity of mineralization may be expected at depth on this major shear zone. The examiners therefore believe that the proposed exploration will not result in discovery of significant bodies of uranium ore. Recommendation is therefore made that request for RMRA assistance in exploration on the Paramount property be denied. I concur in this recommendation.

The Paramount property and exploration proposed by the company have been discussed with members of the Atomic Energy Commission.

Stephen R. Wilson
Stephen R. Wilson

Enclosures
cc: W. E. King

11-7-55

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By H. H. Gilboy and R. W. Osterstock

Paramount Exploration Co., Los Angeles, California, has applied for Government assistance in exploring uranium property in the Marysvale area, Piute County, Utah. The company controls eight lode mining claims. The proposed exploratory program, estimated to cost $24,455.00, consists of sinking on existing vertical shaft 240 feet, with 250 feet of drifting and 500 feet of crosscutting. The property was examined by RMMA personnel August 8, 1955, to appraise the request for Government assistance.

The area in the vicinity of the applicant's property is underlain by volcanic rocks of Tertiary age. The "older" Bullion Canyon series, consisting of latite breccias and tuffs, has been intruded by quartz monzonite, quartz monzonite porphyry, and granite. The "younger" Mt. Belknap series consists of rhyolite flows, flow breccias, and tuffs.

A northeasterly-trending shear zone on the Paramount property may be related to the productive Prospector zone a short distance to the west. However, the zone on the Paramount property has been explored by 250 feet of drifting on the 200-foot level, exposing only minor uranium mineralization. Samples taken in this zone by the applicant gave assay results ranging from 0.01 to 0.09 percent U_3O_8.

11-7-55

No uranium ore has been mined from the Paramount property. There are no known ore reserves.

A breakdown of funds requested by the applicant includes 240 feet of shaft sinking at $138.40 per foot, 300 feet of drifting at $45.04 per foot, and 300 feet of crosscutting at $68.04 per foot. The present shaft is 350 feet in depth.

The examining engineer and geologist do not believe the exploration proposed by the applicant will result in discovery of significant bodies of uranium ore. Exploration on the 250-foot level of the Paramount property has revealed that the prominent shear zone is only weakly mineralized. District evidence indicates that little likelihood exists that an improvement in intensity of mineralization may be expected at depth on this major shear zone. The examiners, therefore, recommend that the request for Government assistance in exploration on the Paramount property, as presently submitted, be denied.

TRANSMITTED

NOV 1 1955

PARAMOUNT EXPLORATION CO.
PIUTE COUNTY, UTAH
RMA-2062
Uranium

Engineering Report

By M. K. Gilley
Mining Engineer
Bureau of Mines

11-7-55

PARAMOUNT EXPLORATION CO.
PIUTE COUNTY, UTAH

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ILLUSTRATIONS

Fig. 1 Location map, Paramount Exploration Co., Piute County, Utah
Fig. 2 Surface map
Fig. 3 Underground workings

SUMMARY

The Paramount Exploration Co. submitted an application dated June 16, 1955, for Government assistance in an exploratory project on uranium property in the Marysvale area, Piute County, Utah. Estimated cost of the work is $64,405.60.

An examination of the property was made August 3, 1955, by Geological Survey and Bureau of Mines personnel.

The property is easily accessible. It is situated 3½ miles northeast of Marysvale and lies immediately to the east of the main uranium-producing "central area".

Eight unpatented lode claims are involved in the proposed project. Some confusion seems to exist with regard to title.

No ore has been produced from the claims and there are no known reserves.

Rocks present in the area include Tertiary lava flows, tuffs and tuff breccias intruded by granitic rocks. The uranium deposits occur principally in shear zones and narrow veins in quartz monzonite. Near the surface the uranium minerals are secondary, autunite being the most common. Below depths of 150 feet uranium mineralization generally is in the form of the primary uraninite. The tenor of the ore remains essentially unchanged in passing from the zone of alteration into the primary zone. There is no zone of secondary enrichment.

Immediately west of the proposed project area is the formerly productive Prospector property. The strong Prospector shear zone, striking northeasterly toward the applicant's property, has been followed in Prospector workings, on the 300-foot level, to a north-south fault about 400 feet west of the applicant's property line. Limited exploration in the fault zone has not found the northeasterly continuation of the shear zone. West of the fault, on the same level, an 1800-foot crosscut to the north did not encounter minable ore at intersections with other structures striking toward the applicant's property.

Exploratory work done to date in the project area includes a 200-foot vertical shaft and about 360 feet of drifting, at the 200-foot level, on a shear zone assumed to be a faulted segment of the prospector shear zone or an allied parallel structure. About 450 feet of unexplored ground lies between these workings and the Prospector workings. Sixteen samples taken on the 200-foot level of the Paramount property averaged 0.03 percent U_3O_8. The highest assay was 0.09 percent U_3O_8.

The applicant has a well-equipped mine plant.

Exploratory work proposed by the applicant consists of sinking the existing 200-foot shaft to the 440-foot level, drifting a total distance of 300 feet along the shear zone on the 440-foot level, and crosscutting to the north on that level a distance of 900 feet.

Cost of the sinking is estimated by the applicant at $30,397.60, or $126.49 a foot. Estimated cost of the 1,200 feet of drifting and crosscutting is $54,048, or $45.04 a foot. These estimates are considered to be excessively high. Average costs on three comparable projects completed by DMEA in this area are $46 a foot for sinking and $27 a foot for drifting and crosscutting.

It is recommended that the applicant's request for Government aid be denied for the following reasons:

1. The history of the district indicates that no improvement in grade is to be expected below the present workings.

2. The 1800-foot crosscut, already driven just west of the proposed project area and roughly paralleling the proposed 950-foot crosscut, did not intersect structures of sufficient promise to warrant exploratory work to the east toward the Paramount claims.

The applicant is now preparing to explore, by trenching, the surface north of the present workings. If the results of the trenching are favorable some underground exploration or diamond drilling may be warranted.

INTRODUCTION

The Paramount Exploration Co. submitted an application dated June 16, 1955, for Government aid in an exploratory project estimated to cost $64,405.60, on uranium property situated near Marysvale, in Piute County, Utah. Time to complete the proposed work is estimated at 12 months.

The property was examined August 3, 1955, by R. W. Gatewstock of the Geological Survey and N. M. Gilbey of the Bureau of Mines, with R. R. Kennedy representing the applicant. The examiners recommend denial of the request for assistance.

LOCATION, TOPOGRAPHY AND CLIMATE

The property is situated in Piute County, Utah, in Sec. 26, T. 26 S., R. 4 W., and Sec. 4, T. 27 S., R. 3 W., S.L.B. and M. (fig. 1). The area lies about 3½ miles by county road northeast of Marysvale, Utah, population 626. Marysvale, with a branch line of the Denver and Rio Grande Railroad, and on U. S. Highway 89, is the supply and residential point, and has an AEC uranium-ore buying depot.

The area is one of moderate relief. Altitudes at the property range from 6,500 to 7,000 feet, approximately. Vegetation consists mainly of scattered cedar trees.

Year-round mining operations in the area are not seriously hampered by weather conditions.

OWNERSHIP AND EXTENT

The Paramount Exploration Co., address 437 South Hill Street, Los Angeles, California, is owned by the Bunkline Oil Co. and its employees, and was incorporated September 16, 1954, for the specific purpose of exploring the property covered by this application. The property, consisting of 8 unpatented lode mining claims recorded in the Piute County Recorder's Office, is held by the Paramount Exploration Co. under an assignment agreement (fig. 2). The brochure does

not include a copy of the assignment. The validity of the title to the claims appears to be in question.

Claims involved in the proposed project are listed below:

	Rank	Page
Yellow Canary No. 2	E	206
Anita Sue No. 1	E	222
Grover Gilbs Fraction No. 2	F	115
Lucky Strike No. 2	E	208
Fraction	E	229
Gamil No. 1	E	209
Lost Dutchman No. 1	E	85
Lucky Strike No. 2 Fraction	G	444

HISTORY, PRODUCTION AND ORE RESERVES

The eight claims were located over a six-year period, extending from 1948 to 1954. There has been no production from any of the claims and there are no known ore reserves.

DESCRIPTION OF THE DEPOSITS

Results of exploration for uranium ores in the Marysvale district indicate that ore bodies of commercial grade and size occur within an area extending north and south a distance of approximately 3,000 feet. This "central" producing area extends from the Prospector mine on the south to the Glenn mine on the north. Claims of the Paramount Exploration Co. lie adjacent to the east side of the productive area. The Ambert shaft, in the proposed area, is about 1,400 feet N. 65° E. of the Prospector inclined shaft.

Rocks present in the productive area include Tertiary lava flows, tuffs and tuff breccias intruded by quartz monzonite, quartz monzonite porphyry and granite. The uranium deposits are found principally in shear zones and narrow veins in the intrusive granitic rocks, mainly in the quartz monzonite. Production from deposits in the overlying volcanics, such as the deposit in rhyolite at the Glenn mine, has been comparatively small.

Mineralization includes both primary and secondary uranium minerals. The primary uraninite is generally found at depths in excess of 150 feet. Autunite is the most common of the secondary uranium minerals found near the surface. The tenor of the ore remains essentially unchanged in passing from the zone of alteration into the primary zone. There is no zone of secondary enrichment.

The most prominent and productive structural element is steeply dipping, northeast-southwest shearing. In the Prospector property, on the 300-foot level, one of the ore-bearing shear zones has been followed approximately 350 feet northeasterly to its intersection with a north-south fault about 400 feet west of the Paramount property line (fig. 2). Samples taken from this drift show that the ore drops below minable grade at a point approximately 50 feet southwest of the fault. Samples taken along the last 50 feet averaged about 0.02 percent U_3O_8.

Mr. R. E. Kennedy, the applicant's geologist, states that the continuation of the shear zone beyond the fault has not been found in a very limited underground search conducted by operators of the Prospector mine. Bert Myrenen, AEC geologist, stated that this exploratory work was confined to the fault zone and that a few tons of commercial ore were mined in the faulted area. It is assumed by the applicant that the northeasterly trending structure exposed in the Paramount workings is a faulted segment of the Prospector shear zone. The country rock in the Paramount workings is quartz monzonite. Sixteen samples taken by the applicant from the drift extending some 360 feet along this structure at the 200-foot level assayed from 0.01 to 0.09 percent U_3O_8 (fig. 3). The arithmetical average is 0.032 percent U_3O_8.

The assay results as received from the applicant are listed below. The samples were taken from the drift on the shear zone, 200-foot level, Ambert shaft.

<u>Samples West of Crosscut</u>

Distance from Crosscut	Sample Length	Percent U_3O_8
13 feet		0.05
20 "		.03
40 "		.04
60 "		.04
80 "		.03
40 "	5 feet	0.014
60 "	5 "	0.011
80 "	5½ "	0.012
100 "	5 "	0.016
120 "	5½ "	0.021
140 "	4½ "	0.014
160 "	5 "	0.030
160 " (small vein)	—	0.046

Samples East of Crosscut

Distance from Crosscut	Sample Length	Percent H_2O_2
100 feet	4 feet	0.038
120 "	5½ "	0.026
140 "	4½ "	0.090

PRESENT STATUS AND EQUIPMENT

Existing workings on the property consist of a vertical, 200-foot shaft, a 150-foot crosscut to the south from the bottom of the shaft, and about 360 feet of drifting along the shear zone intersected by the crosscut.

The shaft is sunk in the hanging wall, in firm, dry ground about 50 feet north of the shear zone. It consists of a hoisting compartment and a manway. A cage is used for hoisting. Shaft dimensions inside timber are 6' 4" by 4' 6". Posts, wall plates and end plates are 8" by 8" timber. The shaft is well constructed.

The crosscut is 5½' wide by 7½' high, in solid ground and requires no supporting timber. The drift is also 5½' by 7½' in cross section and is untimbered. Northeast of the crosscut, the drift is in firm ground. On the southwest side of the crosscut, where the rock is altered and loose, the company is allowing the drift to cave.

The ground drills and breaks well. A 12-hole round is drilled in crosscuts and drifts. Advance per round is 5 feet.

The surface plant and equipment are described in detail in the application. These include a 35-foot headframe; two 16' by 20' steel,

Butler "Pan-L-frame" buildings (for hoist and compressor); a 60-hp., diesel-driven generator set; a 30-hp. electric hoist; a 365-c.f.m., diesel-driven compressor, and a mucking machine. The mine plant is exceptionally well arranged and the equipment is in good condition.

PROPOSED EXPLORATION

The proposed exploratory work consists of 240 feet of shaft sinking, 300 feet of drifting, and 900 feet of crosscutting, as described below:

1. Sinking the existing, vertical, 200-foot shaft an additional 240 feet to the 440-foot level. (The shaft consists of a hoisting compartment and a manway, and is 6' 4" by 4' 6" in the clear of timber).

2. Drifting (5½' by 7½') along the shear zone at the 440-foot level a total distance of 300 feet from a point directly south of the bottom of the shaft. The drifting will consist of 150 feet of exploration to the northeast and 150 feet to the southwest along the shear zone. (Crosscutting from the shaft to the shear zone, a distance of about 50 feet, is included in item No. 3).

3. Crosscutting (5½' by 7½') northward a total distance of 900 feet from the drift on the shear zone. The purpose of the crosscut is to intersect east-west and northeast-southwest shear zones exposed to the west in properties operated by the Vanadium Corp. of America.

A crosscut driven in V.C.A. ground, from the Prospector mine to the Freedom No. 1, intersects a number of these structures; but available information indicates that the uranium mineralization is too weak in that area to warrant exploratory drifting to the east toward the proposed project area.

Generally good ground conditions are anticipated in the proposed project area. It is assumed that about half, or 150 feet, of the drifting and only a small part of the 900 feet of crosscutting will require timber. The shaft will be completely timbered and lagged. It is unlikely that ground water will become a problem.

The applicant proposes to start the work within 10 days and to complete the work within 12 months of the date of a project contract.

ESTIMATION OF PROJECT COSTS

The applicant's estimation of the total cost of the project is $64,495.60. A breakdown of the costs is presented in the application. The following is a general summary and discussion of the costs.

Shaft Sinking

Shaft sinking is expected to progress at the rate of 75 feet a month, on a two-shift, 6-day-a-week basis. To complete 240 feet of sinking at this rate will require a little over 3 months. Estimated cost of the sinking is computed on a monthly-expenditure basis. Expenditures are placed in six categories.

Estimated monthly cost of shaft sinking
- (at 75 feet advance per month)

		Cost per month
Labor, supervision and consultants		$ 3,792.97
Materials and supplies		2,219.04
Operating equipment, owned, valuation	$28,537.93	
Depreciation at 3 percent per month	856.14	
Rented (rental applied against purchase)	561.00	1,417.14
Miscellaneous (includes $750 for maintenance of operating equipment, payroll tax and insurance -		1,195.47
Contingencies, at 10 percent of other costs		862.25
Total estimated cost of sinking per month		$ 9,486.87

Estimated unit cost for shaft sinking is $\frac{\$9,486.87}{75}$ = $ 126.49 a foot

Estimated total cost of sinking 240 feet to the 440-foot level ---------- $30,397.60

Drifting and Crosscutting

Drifting and crosscutting are expected to progress at the rate of 200 feet a month on a two-shift, six-day-a-week basis. To complete the entire 1,200 feet at this rate would require 6 months. Estimated cost of this work is computed on a monthly expenditure basis with cost items placed in six categories as is done for shaft sinking.

Estimated monthly cost of drifting and crosscutting
(at 200 feet advance per month)

		Cost per month
Labor, supervision and consultants (same as for shaft sinking)		$ 3,792.97
Materials and supplies		1,293.39
Operating equipment, owned, valuation— (same as for shaft sinking)	$28,537.93	
20-lb. rail, 945 feet	627.19	
	$29,165.12	

Depreciation at 3 percent per month		$ 875.85	
Rented (rental applied against purchase) Compressor	$961		
Hoisting machine -	416	377.00	$ 1,846.85
Miscellaneous (same as for shaft sinking)		$ 1,195.47	
Assays for Ty&g, 20 at $3 each		60.00	1,255.47
Contingencies, at 10 percent of other costs			818.87
Total estimated cost of drifting and crosscutting			$9,007.66

Estimated unit cost for drifting and crosscutting is $9,007.66 / 200 = $45.04 a foot

Estimated cost of entire 1,200 feet of drifting and crosscutting	$54,045.90

Estimated Total Cost of the Proposed Project

Shaft sinking	$38,357.60
Drifting and crosscutting	54,045.90
Total	$92,403.50

In the light of experience in the Marysvale area, the estimated unit costs appear to be too high. Costs on three DMEA projects, (Docket Nos. 2135, 2271 and 2973) completed in this district under generally similar conditions, averaged $66 a foot for shaft sinking and $27 a foot for drifting and crosscutting. Average depth of the three shafts is 295 feet. Costs on long-form contract No. Idm-2367 (on actual cost basis), Docket No. 2271, Glenny-Cutler Mining Co. were approximately $63 a foot for shaft sinking to a depth of 324 feet, and $22 a foot for drifting.

In the applicant's estimate, the cost of the first item (Labor, supervision and consultants) could be considerably reduced without seriously affecting the efficiency of the operation. The crew could consist of two miners and a hoistman on each shift, with the company geologist acting as supervisor. One of the miners on each shift could act as lead man at $2 an hour.

Total estimated cost of materials and supplies is reasonable. Cost of timber for the shaft for one month, or 75 feet of advance, is estimated at $1,206.36. This is a high estimate, as the shaft will require only about 500 board feet per 5-foot set, which, at $100 per M., would mean $50 per set, or $750 per month for 75 feet of advance. However, cost of timber for drifting, overlooked in the estimation of drifting costs, would probably total $600.00. Cost of explosives for sinking at $3.74 a foot, and for drifting and crosscutting at $1.88 a foot, are not excessive.

Estimated operating equipment depreciation costs are rather high inasmuch as they are based on depreciation rate of 3 percent per month, or on a depreciation period of only 33 months. Also, rental payments to apply on the purchase prices of the compressor and the mucking machine would not be allowable project costs.

Under miscellaneous, the cost of telephone service, $200 a month, would not be an allowable cost. The total amount of payroll taxes and insurance, however, is well under the usual 10 or 11 percent of the total amount of the payroll.

Contingencies, the last item in each of the two cost estimates, is listed at 10 percent of the total of the other costs. Ten percent is considered to be an excessively high estimation of allowable costs in this category.

CONCLUSIONS AND RECOMMENDATIONS

Approximately 340 feet of exploratory drifting along the shear zone has already been completed on the 200-foot level by the applicant. No ore of commercial grade has been encountered. The explored structure appears to be the northeasterly continuation of the Prospector shear zone or an allied parallel shear zone. The Prospector is one of the major producers in the "central" area to the west.

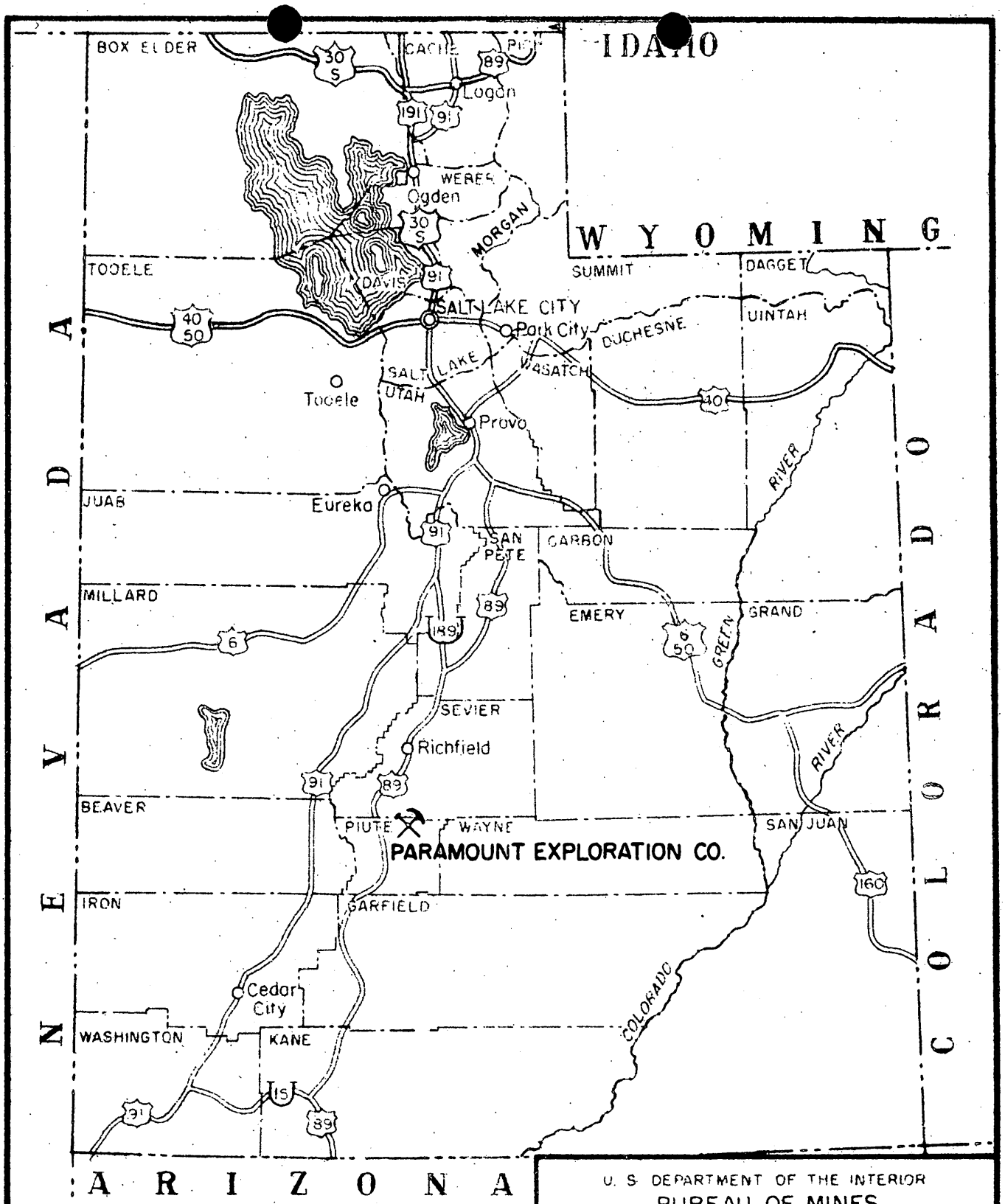
The applicant's proposal to explore the shear zone at the 440-foot level cannot be justified by the assumption that leaching has removed a large part of the uranium mineralization from higher levels. The history of the area indicates that leaching has little effect on the grade of ore.

Driving the proposed 900-foot crosscut to the north does not appear to be warranted, inasmuch as available information indicates that crosscutting to the north, already completed in V.C.A. ground adjacent on the west, failed to encounter minable ore.

Therefore, it is recommended that the applicant's request for Government aid be denied. Karl Myrvaan, AEC geologist, formerly stationed in the Marysvale area, concurs in this recommendation.

Mr. Hyman believes, however, that the area to the north of the Ashert shaft may warrant additional surface trenching. Some trenching has already been done in that area.

The applicant now plans a surface-trenching program in the area north of the Ashert shaft, to be carried out on company account, at an estimated cost of $4,000. If the results of the trenching are favorable, the applicant may ask for reconsideration of the present application or may submit a revised application.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 DMEA Docket No. 3862
Location Map

PARAMOUNT EXPLORATION CO.
MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

ENGINEER *Millard M. GILKEY* DATE: OCT. 5, 1955
TRACED: OCT., 1955, A.P.T.S.
CHECKED:

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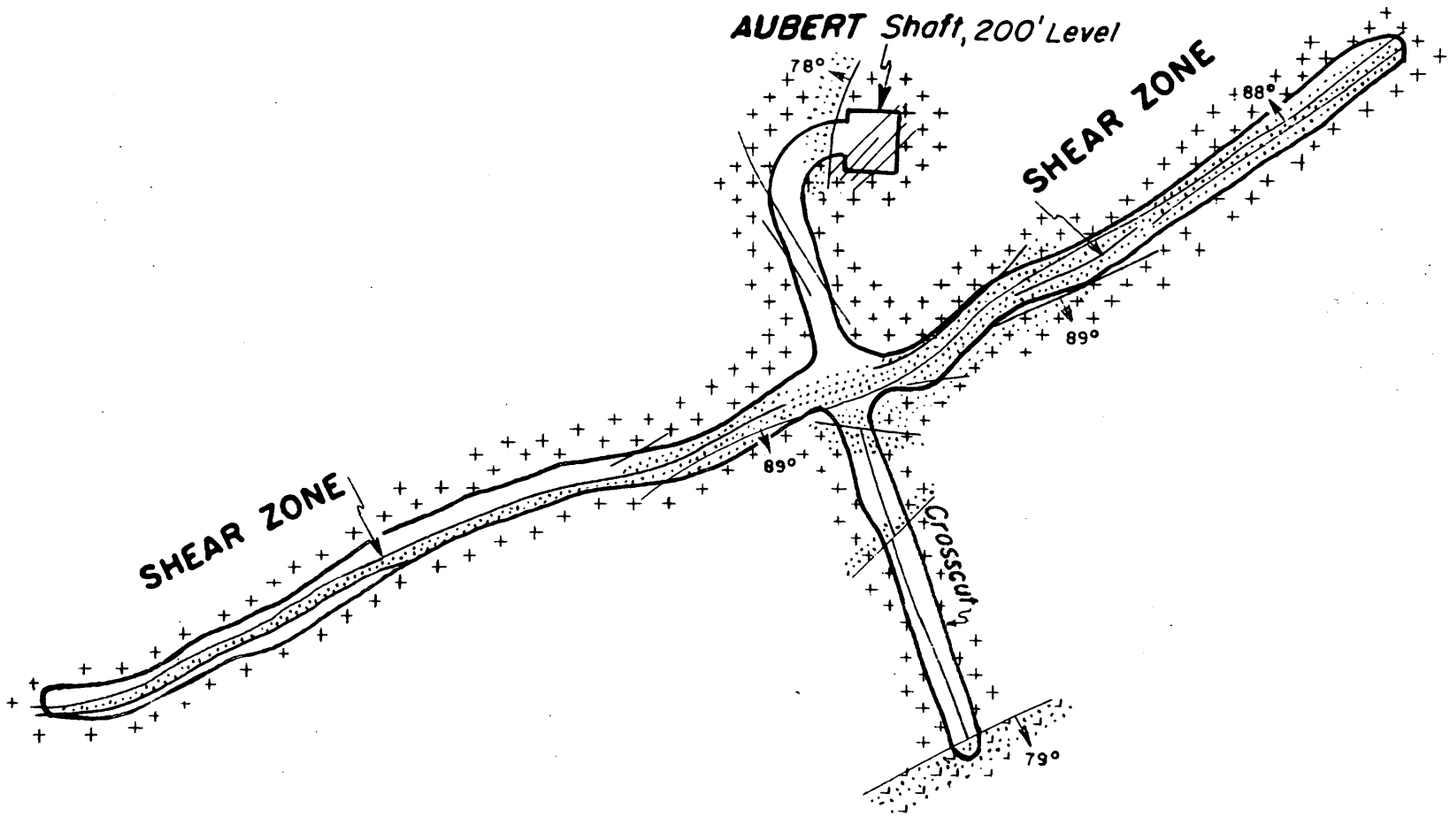


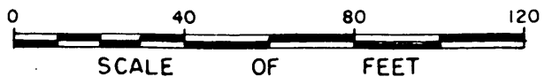
LEGEND

- COARSE GRAINED QUARTZ MONZONITE
- FINE GRAINED MONZONITE
- SHEAR ZONE

NOTE

DATA TRACED FROM COMPANY MAP.

Plan of Underground Workings



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig.3 DMEA Docket No. 3862

Underground Workings

PARAMOUNT EXPLORATION CO.

MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

ENGINEER: *Millard M. GILKEY*	DATE: OCT. 7, 1955
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DMEA
Denver
OCT 1955
BUREAU OF MINES
Denver, Colorado

TRANSMITTED
NOV 1 1955

Room 206, 222 So. West Temple
Salt Lake City 1, Utah
October 21, 1955

Memorandum

To: E. M. Harriman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA Docket 3562 (Uranium) Paramount Exploration Co., Marysvale District, Piute County, Utah.

Enclosed are 11 copies of a geologic report of examination on the subject property. The Paramount Exploration Co. applied for DMEA assistance for uranium exploration on their property in the Marysvale district, Utah. Total proposed expenditure for the exploration work is $24,405.62.

Field examination of the subject property revealed that uranium mineralization in the strongest structure exposed to date was for below ore grade and district experience suggests little chance of improvement in grade with depth. Therefore, additional exploration of this structure appears fruitless and exploration of lesser structures is even less desirable. It is recommended, therefore, that the application for government assistance be denied. It is further recommended that the application be held for reconsideration pending the completion of surface exploration now under way at the property.

Also enclosed are claim and areal maps of the Marysvale area which are known to contain numerous inaccuracies. Apparently there is at present no authoritative composite map of the Marysvale District. These maps are to used at your discretion, they may or may not suffice in complying with Selfridge's request dated 7/1/55.

E. M. Harriman
for R. W. Osterstock

11-7-55

TRANSMITTED
NOV 1 1955

PARAMOUNT EXPLORATION COMPANY, PARAMOUNT ALBERT SHAFT

PIUTE COUNTY, UTAH

DMEA Docket 3062

Initial Geologic Report

by

R. W. Gatewood
U. S. Geological Survey

11-7-55

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ILLUSTRATIONS

Figure 1. Index map.

Figure 2. Geologic Sketch Map of Paramount 200 level.

Figure 3. Map showing Proposed Exploration.

DMEA Docket 3062 (Uranium), Paramount Exploration Company,
Paramount Aubert shaft, Piute County, Utah

SUMMARY

The Paramount Exploration Company applied for government assistance in their search for uranium ores at their property in the Marysvale area, Piute County, Utah. The property was examined by DMEA personnel in August 1955.

The Paramount claim area is on the fringe of the productive central Marysvale area. The entire area is underlain by Tertiary volcanics and intrusives. In the central productive area, ore mineralization is confined principally to large persistent parallel sets of northeasterly trending shear zones. The most prominent of these shears are the Prospector, the Freedom 1, and the Freedom 2. One of these zones, the Prospector may extend into the Paramount claim area but work done on this structure by the applicant has not disclosed any promising mineralization. The applicant has proposed additional shaft sinking and drifting on the major known shear on the Paramount property as well as crosscutting northerly to explore for minor shear zones first noted in a foreign crosscut about 1000 feet to the west.

The lack of encouraging shows of mineralization along the strong structure exposed by present Paramount workings along with the historically established practice in the district of finding ore producing structures persistent from the surface has led the examining DMEA personnel to recommend denial of the loan application. Present surface operations by the applicant may bring sufficient new information to light to warrant reconsideration for DMEA participation.

INTRODUCTION

The Paramount Exploration Company, a Nevada Corporation applied for a DMEA loan Docket No. 3062, to aid in exploration for uranium ores on their property in the Marysvale district, Utah. The application was received June 20, 1955. At the request of the DMEA Field Team, Region III a field examination of the subject property was conducted on August 3, 1955 by R. W. Osterstock, USGS, and M. M. Gilkey, USBM. Mr. R. R. Kennedy, company geologist, accompanied the examiners in the field.

Location and Accessibility

The Paramount property is located in Sec. 4, T. 24 S., R. 3 W., in the Marysvale (or Bunkse) mining district, Piute County, Utah (see Fig. 1). The property is situate on the southwest slopes of the Antelope Range approximately 5 miles east of the Sevier River. The Paramount shaft, near the western edge of the claim area, may be reached by travelling on good graded roads approximately 5 miles northeast of Marysvale, Utah.

History and Production

The applicant holds the eight claims included under the present DMEA application by assignment. However, inspection of claim maps in the area reveals that an extremely complex situation exists and there may well be cloudy titles on some of the claims included in the applicant's proposals.

The property is developed by surface dozer trenches and a vertical one compartment shaft with manway to the 200 level with approximately 300 feet of lateral work on the 200 level. There is no recorded production from any of the workings on the applicant's property.

GEOLOGY

The Marysvale, Utah region is underlain by volcanic rocks of Tertiary age. The "older" Bullion Canyon series consisting of latite breccias, tuffs, and flows, has been intruded by stocks, dikes, and plugs of quartz monzonite, granite, and related rocks. Following a period of erosion, further volcanic activity resulted in the deposition of the "younger" Tertiary Mt. Belknap rhyolitic flows, flow breccias, and tuffs as well as the later Dry Valley, quartz latite and latite flows and the interbedded Joe Lott rhyolite and latite tuff. Olivine-basalt flows of late Tertiary or Quaternary age were subsequently extruded over parts of the area.

Uraniferous mineralization in the region is mostly localized in the Antelope Range, an east-striking structure north of Marysvale, Utah, which extends from the Tushar Range on the west to the Sevier Plateau on the east. Tertiary flows of the younger volcanic series dip north and south from the axial portion of the Antelope Range.

Much of the Paramount claim area is covered by slope wash and therefore geologic identification of the various rock units must depend upon identification of residual minerals in the soils.

The primary structural elements in the central Marysvale area, of which the Paramount property represents a fringe zone, are the northeasterly trending vertical shears. These broad shear zones with considerable alteration on both walls are sometimes visible at the surface, however on the Paramount property slope wash disguises any such structures which may exist. The most prominent of the shear zones are the Prospector, the Freedom No. 1, and the Freedom No. 2. Each of these has been exposed over a considerable strike length by underground exploration. Other diversely oriented minor shear zones intersect the major northeasterly trending zones, however, there is not in most cases an appreciable displacement at these intersections.

Alteration is very common in the district, it is most noticeable in the Bullion Canyon volcanics in which the alteration has taken the form of kaolinization, alunitization, silicification. Although alteration is a fairly general feature in the Bullion Canyon its effects are much more intense in the zone adjoining the northeasterly trending fissures. Thus in many instances intensity of alteration may serve as a key to the location of the northeasterly trending fissure zones.

ORE DEPOSITS

Uranium mineralization in the central Marysvale area is largely confined to narrow veins and gouge filled northeasterly trending fissures principally in the quartz monzonite intrusives. Lesser amounts of uranium mineralization, mostly secondary, have been found in the overlying volcanic strata.

Major production from the central Marysvale area has been realized from the northeasterly trending fissure zones with the higher grade ore bodies apparently centered in the most highly brecciated and relatively open portions of the shear zones. Larger lower grade uraniferous bodies are located at the intersections of shears with some of the diversely oriented minor fissure zones as well as occasionally at the quartz monzonite and younger? volcanic contact.

The primary minerals occurring in the fissures are pitchblende, fluorite, magnetite, pyrite, quartz, calcite, and jordisite. The primary ore minerals are generally completely altered from the surface to a depth of about 150 feet. Secondary minerals occurring in this upper oxidized zone are autunite, schroeckingerite, torbernite, and several unidentified yellow minerals. Exposure of the producing structures at depth has revealed that there is very little enrichment in the oxidized zone inasmuch as virtually no change in the grade occurs as the protore zone is encountered. Each of the producing structures has retained essentially the same grade from its surface exposure to its deepest exposed portion.

Thus it is implied that veins and fissures carrying little or no uraniferous mineralization at or near the surface may not be expected to improve in grade with depth.

On the Paramount property a shaft was sunk to the 200 level and from this point lateral workings have explored what may be the offset extension of the Prospector fissure zone. Strike length exposure on the 200 level of approximately 360 feet along a strong, altered northeasterly trending shear zone has revealed only very minor uraniferous mineralization. Dull quartz in stringers and pods occurs sporadically in the shear zone, allied with manganese stain and limonite stain of the gouge walls. Some hematite is reported by the applicants to be present along the walls of the drift. One selected high grade sample near the northeast end of the drift is reported by the applicants to have assayed .09 percent U_3O_8. A scintilator traverse of the exposed vein zone by the assaining DMEA team revealed no portion of the shear zone to be appreciably above normal background readings. A second shear zone (see Fig. 2) of lesser importance was encountered in the south end of the 200 level crosscut from the Paramount Aubert shaft. This zone separates coarse grained quartz monzonite from a finer grained facies. No hydrothermal mineralization of any form is noted at this contact.

The Prospector shear zone in the central Maryevale area has proved to be an extensively mineralized and persistent structure. As this zone was followed to the northeast on the VCA property it was found to be cut off by a northerly trending cross fault. A small amount of exploration through this cross fault in VCA ground has indicated that the east wall has moved relatively south. Although the Prospector fissure zone was mineralized up to this fault, little or no mineralization was located beyond the fault. Thus the question arises as to whether this small cross fault may be pre-ore and thereby have affected a damming action

at its intersection with the Prospector shear zone. Consequently the northeastern offset extension of the Prospector may not have received mineralizing solutions in sufficient quantity to have formed workable mineral deposits.

Although the northeasterly trending shear zone exposed on the 200 level of the Paramount property may not be the true offset extension of the Prospector shear zone, it is certainly a strong persistent zone which should have been receptive to ore depositing solutions. That no ore bodies are found on this structure is extremely discouraging. Assay samples taken along the exposed vein structure on the 200 level are noted on figure 2 accompanying this report. These assays have been provided by the applicant, however, AEC geologists have been unable to verify even the small amount of uranium mineralization noted. There is no reason to believe that development of this structure with greater depth will encounter any more intense mineralizing conditions than those already noted on the 200 level.

A long crosscut driven on the Prospector 300 level on foreign (VCA) ground to the west of the Paramount holdings has encountered a series of small northeasterly trending fissure zones carrying very minor mineralization in a few instances (see Fig. 3). The Vanadium Corporation of America, owner of these properties, has not seen fit to attempt development or exploration of the extensions of any of these thin, weakly mineralized structures to the northeast in the direction of the Paramount property. All of these structures where exposed are within the central Marysvale area which has in the past been the most productive portion of the entire district. Projection of these structures to the northeast into the Paramount property must first be reckoned in terms of the north trending cross fault which has offset the main Prospector shear zone. It is entirely possible that this same crossfault which may have provided a damming

effect to solutions coming from the west along the Prospector structure may also have provided a damping effect on these smaller less important structures. It would therefore seem that hope of encountering minable ore bodies on these minor structures is considerably lessened by the discouraging results of the work done by the Paramount Exploration Company on their 300 level along the strong but very weakly mineralized shear zone tentatively identified as the offset extension of the Prospector shear zone.

ORE RESERVES

There are no reserves of any classification on the Paramount property.

PROPOSED EXPLORATION

The applicants have submitted an exploration program costing $84,405.60. This exploration proposal consists of deepening the present 300 foot Paramount Aubert shaft to a depth of 440 feet or 240 feet of additional shaft sinking. The applicants have further proposed exploration on the "Prospector" structure for a distance of 150 feet northeasterly and southwesterly from the new 440 level. It is also proposed that a crosscut be driven northward a distance of 900 feet for the purpose of intersecting a number of east-west and northeast-southwest mineralized shears noted in the north-south TCA Prospector 300 level crosscut. Another phase of exploration for which no cost request has been made is a diamond drilling program to follow the above noted underground exploration.

CONCLUSIONS AND RECOMMENDATIONS

Following the field examination of the subject property and discussion of the property with Mr. Bert Magnuson of the Salt Lake Exploration Branch, Atomic Energy Commission, it was pointed out to the applicants that the proposed exploration program was inordinately expensive in view of the fact that past exploration ventures in the Marysvale area have been primarily conducted from the surface.

Exploration in the district has been based on the knowledge that all of the productive fissure zones thus far noted in the Marysvale district have maintained their productivity from their surface exposure with little variation in grade. It was therefore suggested to the applicants that some superficial exploration might be in order prior to consideration of the more expensive underground exploration as requested. To a certain extent such bulldozer trenching on the surface will be made difficult because of the topographic irregularities of the zone to be explored, namely, that portion of the property lying north of the Paramount Aubert shaft in which the projected northeasterly trending fissures intersected on the Prospector 300 level crosscut may be located.

The applicants have undertaken a bulldozer surface trenching program at their own expense. These operations are presently under way and no results are forthcoming as yet.

It is concluded that the exploration program as proposed by the applicants is not adapted to the structural and mineralogic setting of the fissure systems as they are presently known. There is too little evidence of the existence of mineralization of the small northeasterly trending shear zones noted in the Prospector 300 level crosscut in the area of the proposed exploration nor can the structures themselves be projected with any degree of confidence. It is further concluded that present development work along the "Prospector" shear zone from the 300 level off the Paramount Aubert shaft should have encountered mineable grade uranium mineralization, if this area had received sufficient mineralizing solutions to have produced such deposits in any of the sought for structures.

It is recommended that the applicant's request for government assistance in exploring the Paramount property by underground methods be denied. It is further recommended that this file be retained on the active list until the applicant has

completed his present surface exploration program on the property. In the event that this program develops information which may make underground exploration of the property appear more feasible, DMEA should reconsider the underground exploration program. This report has been discussed with and approved by Mr. R. E. Thurlow, Chief, Salt Lake Exploration Branch of the Atomic Energy Commission.

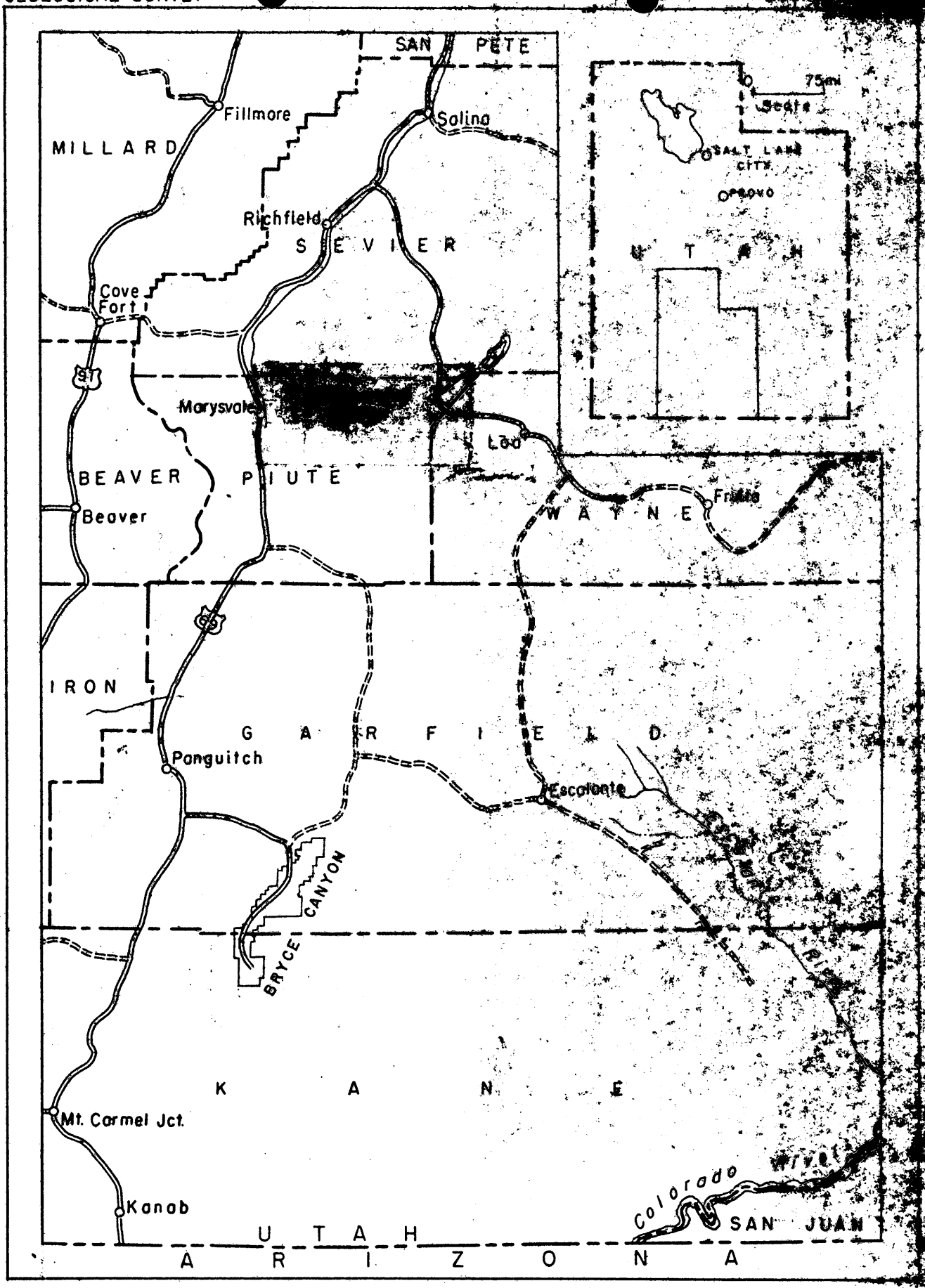
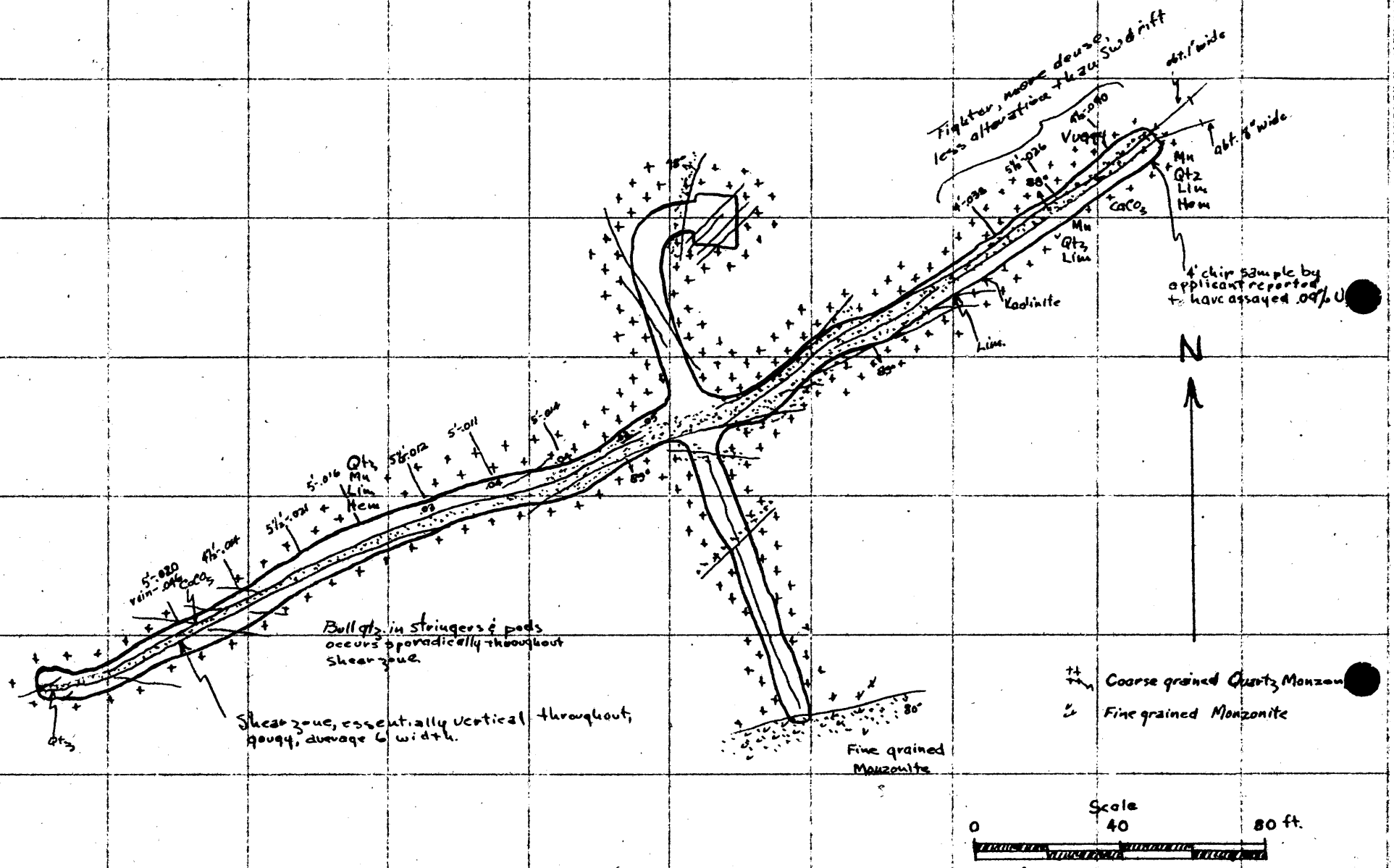


FIG. 1 INDEX MAP OF UTAH

0 5 10 15 20 mi.
Scale



GEOLOGIC SKETCH MAP OF PARAMOUNT '200' LEVEL

MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

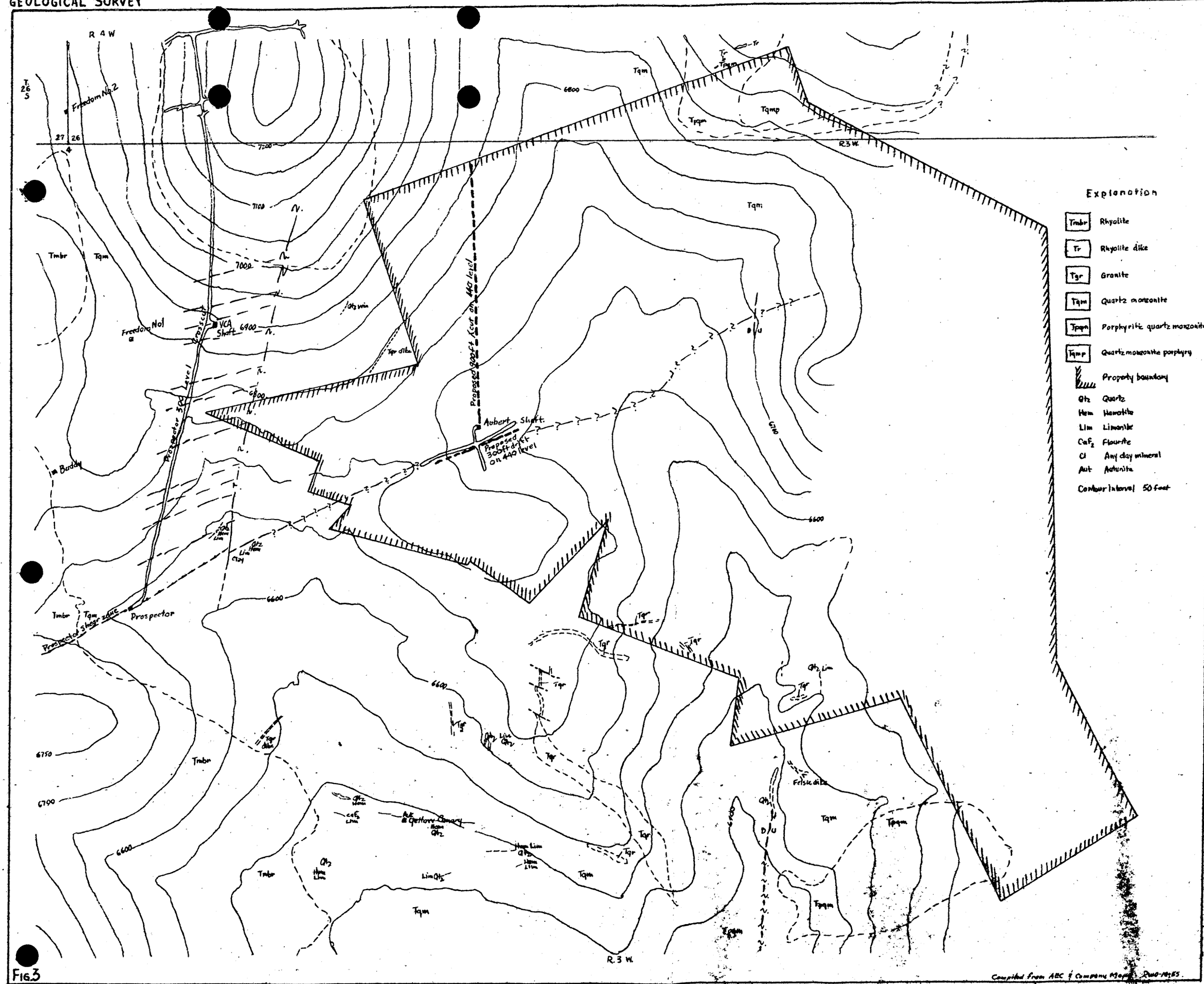
FIG. 2

Adapted from Company map.
Rev. 4-55

"ALBANENE" NO. 1000M K&E CO., N.Y.
NO. 5-R. MI. 017

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET NO. 3862



Compiled from AEC & Company Maps, Dec. 19, 1955

FIG. 3

MAP SHOWING PROPOSED EXPLORATION PROJECT ON PARAMOUNT PROPERTY, MARYSVALE, UTAH

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

224 New Customhouse
Denver 2, Colorado

July 7, 1955

RECEIVED
JUL 1 1955

Memorandum

To: S. R. Wilson (w/brochure)
R. W. Osterstock

From: Field Team, Region III

Subject: Docket DMEA-3862 (Uranium), Paramount Exploration Company, Paramount Aubert Shaft, Piute County, Utah

Enclosed is the subject application in the amount of $84,405.62. Also enclosed is a copy of a letter from the Chairman of the Operating Committee together with memoranda from the Uranium Commodity Committee.

The Chairman of the Operating Committee points out that many DMEA applications have been received within this rather small area and he desires four copies of a composite map of this area showing the location of the claims of the various mining companies. If such a map is available, will you forward four copies to this office.

In the event the field examiners consider an exploration project on the property is warranted, please request the applicant to submit a map showing the individual claims and all legal papers showing the chain of title to the subject property. The usual AEC contact should be made and if exploration is recommended by the field examiners, the applicant should be requested to furnish bids for drilling from three drilling contractors.

W. M. TRAVER
W. M. Traver

Enclosures

E. N. Harshman
E. N. Harshman

DMEA Field Team, Region III

HMC:pw

cc: Sec.Op.Comm. (2)
Harshman
Subject
Chron

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

224 New Customhouse
Denver 2, Colorado

July 7, 1955

Memorandum

RECEIVED
JUL 15 1955

To: S. R. Wilson (w/brochure)
R. W. Osterstock

From: Field Team, Region III

Subject: Docket DMEA-3002 (Uranium), Paramount Exploration Company, Paramount Hubert Shaft, Piute County, Utah

Enclosed is the subject application in the amount of $84,405.62. Also enclosed is a copy of a letter from the Chairman of the Operating Committee together with memoranda from the Uranium Commodity Committee.

The Chairman of the Operating Committee points out that many DMEA applications have been received within this rather small area and he desires four copies of a composite map of this area showing the location of the claims of the various mining companies. If such a map is available, will you forward four copies to this office.

In the event the field examiners consider an exploration project on the property is warranted, please request the applicant to submit a map showing the individual claims and all legal papers showing the chain of title to the subject property. The usual AEC contact should be made and if exploration is recommended by the field examiners, the applicant should be requested to furnish bids for drilling from three drilling contractors.

W. M. TRAVER

W. M. Traver

Enclosures

E. N. Harshman

E. N. Harshman

DMEA Field Team, Region III

HMC:pw

cc: Sec.Op.Comm. (2)
Harshman
Subject
Chron

Surname 700

Murphy
Ellis
Kilsgaard
Gehan
Selfridge
Kjenson

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

Paramount Exploration Company JUL - 1 1955
437 South Hill Street
Los Angeles, California

Re: Docket No. DMEA-3862 (Uranium)
Paramount Aubert Shaft
Piute County, Utah

Gentlemen:

The application for assistance in exploring your property in Piute County, Utah, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to the Executive Officer of Region III at the following address:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. D. Mittendorf

Administrator

FMurphy:am
6-30-55
cc to: Admr. Reading File
Docket
Code 700
Mr. Murphy
DMEA Field Team, Region III(2)

R.C.S.

Surname copy

Murphy
Ellis
Selfridge
Johnson

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

JUL - 1 1955

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3862 (Uranium)
Paramount Exploration Company
Paramount Aubert Shaft
Piute County, Utah

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination if deemed necessary, and recommendation. A copy of the application was forwarded to your office on June 21, 1955.

Enclosed are copies of memoranda from Mr. J. E. Crawford, dated June 23, and Mr. N. E. Nelson, dated June 29, 1955, members of the Uranium Commodity Committee.

We note that the Paramount Company's property is located within a small area (about 1,200 acres) on which we have previously received ten applications for exploration. Four of the applications resulted in contracts and two of the properties were certified, namely, DMEA-2135, Idm-E381, and DMEA-2573, Idm-E422. DMEA-2385, Idm-E363, was not certified as a result of our work; however, the mine "Bullion Monarch" had a previous production of 10,719.76 tons of ore averaging 0.223 percent U_3O_8. The fourth project, DMEA-2271, Idm-E387, was unsuccessful in finding ore.

With regard to this area, especially sec. 4, T. 27 S., R. 3 W., and secs. 26 and 27, T. 26 S., R. 4 W., has the Field Team prepared a composite map showing the location of the claims of the various mining companies? If such a map is available, will you kindly forward four copies to this office.

You will note that the geologic map submitted with the subject application shows the outer boundaries of the property; however, the individual claims are not indicated.

In the event the Field Team considers an exploration project on the subject property is warranted, then the Operator should be requested to submit a map showing the individual claims. Also, the Operator should be requested to submit all the legal papers

R.C.S.

showing the chain of title to the subject property; and also, to submit executed copies of the Owner's Consent to Lien and Subordination Agreements if they are required.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JAB)

Enclosures

FMMurphy:am
6-29-55

APPROVED:

/s/ Robert W. Geehan (JAB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JAB)
Member, Geological Survey

cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy

6/30/55 gla

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1955

June 29, 1955

Re: DMEA 3862
Paramount Exploration Co.
Paramount Prospect
Piute County, Utah
$84,405.62 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Application.

I have no information concerning this property. As stated in the geological report, the conditions under which the uranium occurs in the immediate area are quite dissimilar to those holding further east in the "Plateau."

A field team report is needed.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1955

June 29, 1955

Re: DMEA 3862
Paramount Exploration Co.
Paramount Prospect
Piute County, Utah
$84,405.02 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Application.

I have no information concerning this property. As stated in the geological report, the conditions under which the uranium occurs in the immediate area are quite dissimilar to those holding further east in the "Plateau."

A field team report is needed.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-6/29/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. G. Hosted, 3210, GSA

6/24/55 gla

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

June 23, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 3862, Paramount Exploration Company, Piute County, Utah

I have reviewed the attached application for assistance, Paramount Exploration Company, DMEA Docket 3862; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

Based on information contained in the application of the Paramount Exploration Company, Mr. Hosted and I agree that exploration assistance should be denied the company by the DMEA.

John E. Crawford

John E. Crawford

Attachment

RECEIVED
JUN 24 1955

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

June 21, 1955
Subject: DMEA-3862
Re: Exploration Assistance
Paramount Aubert Shaft

Paramount Exploration Co.
437 South Hill St.
Los Angeles 13, Cal.

Gentlemen:

The receipt of your application dated June 16, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3862 and referred to the Rare and Miscellaneous Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

BANKLINE OIL COMPANY
437 SOUTH HILL STREET
LOS ANGELES 13, CALIFORNIA

June 15, 1955

RECEIVED
JUN 20 1955

Mr. A. G. Keating
Defense Minerals Exploration Administration
Washington, D. C.

Dear Mr. Keating:

As you suggested in our telephone conversation today, I am enclosing herewith original and three copies of Application for Aid for Exploration Project, in accordance with DMEA Order 1, Under the Defense Production Act of 1950, as Amended. Attached to each application is a geological report containing recommendations for exploration work prepared by Geoprofessional Services, Inc., of Salt Lake City, Utah.

You will see that our proposed program consists of the sinking of our existing shaft from the 200' to 440' level and exploration work by means of 1200' of horizontal drifts at the 440' level. The total cost of this program is estimated to be $84,405.60.

You may recall when you were in Mr. Martin Weil's office several months ago that we discussed our program with you briefly. The type of exploration required in the Marysvale area is somewhat different from that of the Colorado Plateau area in that ore is found in more or less vertical shear zones in igneous rock rather than more or less horizontal deposits in sedimentary beds. Furthermore, our property lies immediately adjacent to large scale mining operations being conducted by the Vanadium Corporation of America. Surface data, together with information obtained at the 200' level indicate that the shear zones being mined by Vanadium corporation extend across our property.

At our previous meeting you indicated that the generally accepted method of exploring the subsurface for uranium was by means of drill holes in the Colorado Plateau area and we have spent considerable time and effort in evaluating such a program for our property as compared to the one set out in the attached application. We called in independent mining geologists, the Geoprofessional Services, Inc., who recommended the sinking and drifting program over a drill hole program. One reason for this recommendation lies in the fact that we have complete equipment

and facilities on the property which were utilized in our exploration up until this time and which would be used to proceed with a more complete program of the same type without any substantial expenditures for basic equipment. A second reason in favor of the sinking and drifting program is the fact that results are conclusive in that a complete and detailed analysis of representative material in each of the shear zones are available for study. A third reason peculiar to this area is the fact that drilling is extremely costly as compared to drilling in the Colorado Plateau area. The AEC has advised us that drilling in this area, even on a large scale contract, would run at least $10.00 per foot. We are not at all certain that drilling is practical in this area in that it may be impossible to stay in the shear zones with depth. Even if it should be found possible to stay within the shear zone, the experience of the Vanadium Corporation wherein a shear zone varies from lean to rich along the length of the zone would indicate that a number of holes would have to be drilled along each of the shear zones in order to obtain conclusive values. Furthermore, a large number of holes would have to be drilled to be sure of encountering all of the potential shear zones at favorable depths on the property.

Considering all of these factors, all of us who have been concerned with this project feel that more conclusive and reliable results could be obtained at a reasonable cost by means of the recommended program rather than the conventional drill hole program used in the Colorado Plateau area.

The Prospector shear zone which we have explored at the 200' level apparently contains only residual uranium minerals, the original uranium content of this zone having been leached and washed out by the underground waters. It is our feeling that the 440' level may place us below the influence of surface waters and that the original uranium content of the shear zone will be in tact at that level. When we drift to the North and intersect other shear zones extending across our property from the Vanadium Corporation property on the West we will be drifting underneath a hill which has a rhyolite capping. We feel that the increased depth under the hill plus the impermeability of the rhyolite capping will have protected these shear zones from dissolution by surface waters to a much greater extent than the Prospector vein which we have been exploring.

If you should have any questions with regard to this application or desire any further information, I would appreciate your giving us a call and we will be happy to cooperate with you in every way.

Very truly yours,

BANKLINE OIL COMPANY

By S A Patterson
S. A. Patterson

SAP:dse
Encls.

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED JUN 20 1955

Application for Aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended.	Docket No.	3862
	Metal or Mineral	Uranium
	Date Received	6/20/55
	Estimated Cost	$84,405.60
	Participation (Government %)	

1. Name of Applicant

(a) Paramount Exploration Company, 437 South Hill Street, Los Angeles 13, California.

(b) Nevada Corporation.

(c)

L. L. Aubert	President
Samuel A. Patterson	Vice President
Henry M. Paulsen	Vice President
E. J. Case	Secretary
Martin J. Weil	Treasurer
Lionel T. Barneson	Chairman of the Board

The mailing address for all of the above officers is: 437 South Hill Street, Los Angeles 13, California.

(d) Does not apply.

3. Applicant's Property Rights

(a) The applicant proposes to explore the following claims, which are located about four miles northeast of Marysvale, Utah, and are outlined on the geologic map in the attached geologic report by Geoprofessional Services, Inc.

Yellow Canary No. 2, located April 25, 1949, Recorded April 26, 1949, Book "E", Page 206.

Anita Gae No. 1, located May 30, 1949, Recorded May 31, 1949, Book "E", Page 222.

Grover Gibbs Fraction No. 2, located June 7, 1950, Recorded June 9, 1950, Book "F", Page 115.

3. Applicant's Property Rights (Cont'd.)

Lucky Strike No. 2, located April 29, 1949, Recorded May 2, 1949, Book "E", Page 208.

Fraction, located June 12, 1949, Recorded June 13, 1949, Book "E", Page 229.

Camel No. 1, located May 1, 1949, Recorded June 5, 1949, Book "E", Page 209.

Lost Dutchman No. 1, located March 11, 1948, Recorded March 11, 1948, Book "E", Page 85.

Lucky Strike No. 2 Fraction, located November 20, 1954, Recorded November 23, 1954, Book "G", Page 444.

All in the County of Piute, State of Utah.

(b) Paramount Aubert Shaft.

(c) Owner by assignment. (Assignors reserved 10% overriding royalty only).

(d) Does not apply.

(e) None.

(f) See "A" above.

4. Physical Description

(a) Bulldozer work, together with the use of the nucleometer on the surface, has indicated the presence of several shear zones. These extend northeasterly across our claims from the Vanadium Corporation of America property to the west where they are being mined. The Prospector shear zone shown on the geologic map in the attached Geoprofessional Report is one of the more prominent of these zones.

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4. Physical Description (Cont'd.)

A vertical one compartment shaft, with manway, has been sunk to the 200' level to explore the prospector shear zone. The shaft is timbered, shored, and secured by sinking rods. It is electrified and equipped with ventilation tubes, air lines, water lines, and water receiver tanks. From the 200' station, we have approximately 500' of exploratory drifts as shown in detail on the Map of Underground Workings in the Geoprofessional Report. The drifts are complete with rail, electric lights, mine ventilation duct and a Gardner-Denver No. 9 mucking machine and accessories.

The mine head frame is 35' high, all metal bolted construction. There is car and mine cage, cable operated, with a Sullivan Model B-111 mine shaft hoist electrically operated by a 30 hp, 1140 RPM, slip ring motor driven by a GM 60 kw diesel generator and all accessories necessary for hoisting operations. We have a 1955 Gardner-Denver Model WH365D, two stage air compressor, diesel driven, unitized and portable, with accessories. This equipment is housed in two Butler 16' x 20' steel Pan-L buildings. All buildings, machinery and head frame are anchored on cement foundations.

We have 100% interest in these operations.

The mine workings are accessible at any time for examination purposes by contacting Mr. R. R. Kennedy, our Geologist, in Marysvale, Utah.

(b) There is no past or present production and no presently discovered reserves.

(c) See attached geologic report by F. W. Christiansen and Warren L. Anderson, of Geoprofessional Services, Inc.

(d) County graded road and AEC Vanadium Corporation road offers access from Marysvale to the property, located four miles to the northeast. Marysvale is the supply and residential point and also has a Denver & Rio Grande Freight Depot and an AEC buying depot.

4. Physical Description (Cont'd)

(e) Manpower, Water, and many supplies are readily available in the local Marysvale area. Certain materials and equipment come from Salt Lake City, Utah (190 miles distant). Electric power is generated at the mine by a diesel powered generator.

5. The Exploration Project

(a) Uranium.

(b) Please refer to the attached geologic report for maps and discussion relating to the proposed work. On Pages 14 and 15 are found the recommendation for additional exploratory work. This application relates only to the "second phase" set out therein, consisting of further sinking and drifting. Aid to cover the so-called "third phase" consisting of diamond drilling of areas farther to the east is not being applied for.

(c) Work will start within 10 days and be completed within approximately 12 months from date of an exploration project contract.

(d) Paramount Exploration Company is a Corporation formed on September 16, 1954, for the specific purpose of exploring the properties covered by this application, on which the sinking and drifting operations described in the attached report have been carried on for the last six months. Paramount Exploration Company is owned by Bankline Oil Company and its employees. Bankline was incorporated in 1912 and has been exploring for and producing crude oil and natural gas in California and Texas continuously since that time in addition to refining and marketing petroleum products.

The mine is under the supervision of a graduate geologist with approximately three years mining experience, including work with the AEC. The over-all operation is directed by the officers of the corporation who have had from 15 to 35 years of petroleum, mining, producing, refining and management experience.

6. Estimate of Costs for the proposed work of sinking the shaft from 200' to 440', and exploring at the 440' level with 1200' of drifts.

Sinking

(a) Independent Contracts - None.

(b) Labor, Supervision, Consultants - 2 Shifts.

No.	Class	Hr. Rate	Monthly Total (Incl. Overtime for 48 Hour Week)	
	Consultants	$ -	$150.00	
1	Geologist & Superintendent	-	575.00	
1	Foreman & Timberman	-	560.00	
2	Hoist Oper.	1.83	835.99	
4	Miners	1.83	1,671.98	$3,792.97

(c) Materials & Supplies

Item	Cost Per Month	
Timber	$1,208.38	
Rods, Plates, Nails, Nuts	201.31	
Bits	65.94	
Fuel Oil & Lubricants	152.61	
Fuel & Lubricants for Vehicles	75.00	
Dynamite, Caps, Fuse & Elec. Det.	282.66	
2" Air Line & 3/8" Water Line	44.82	
10" Vent Pipe	90.00	
Wiring - Elec. & Phone	18.75	
Misc. Materials, Supplies & Items of Equip. Under $50 Ea. as evidenced by Attached List, Exhibit "B"	79.57	2,219.04

6. Estimate of Costs (Cont'd) Brt. Fwd..... $6,012.01

(d) Operating Equipment

Owned (See Exhibit "A") - $28,537.93 Figure Depreciation at 3%/Mo.	$856.14	
Rented (Rental applied against Purchase) Compressor/Mo.	561.00	1,417.14

(e) Rehabilitation & Repair - None

(f) New Buildings, Improvements, Installations - None

(g) Miscellaneous

Item	Cost Per Month	
Telephone	$ 100.00	
Field Office	30.00	
Workmen's Comp. Insurance	135.51	
S.U.I. Insurance	60.00	
Group Insurance	63.96	
F.O.A.B.	56.00	
Maintenance of Operating Equipment - Average	750.00	1,195.47
		$8,624.62

(h) Contingencies

Estimate at 10% of Other Costs - Per Mo.	862.25
GRAND TOTAL - PER MO.	$9,486.87

Experience in sinking to the 200' level indicates we can expect to make about 75' of hole per month with two shifts on a 48-hour week. This results in a cost per foot of hole = $9,486.87 ÷ 75 = $126.49, making a total cost of sinking 240' to the 440' level = $30,357.60.

6. Estimate of Costs (Cont'd.)

Drifting

(a) Independent Contracts - None

(b) Labor, Supervision, Consultants
Same as for Sinking $3,792.97

(c) Materials & Supplies

Item	Cost Per Month	
Bits	$201.31	
Fuel Oil & Lubricants	152.61	
Fuel for Vehicles	75.00	
Dynamite, Caps, Fuses & Elec. Det.	375.40	
2" Air Line & 3/8" Water Line	119.50	
10" Vent Pipe	240.00	
Wiring - Elec. & Phone	50.00	
Misc. Materials & Supplies & Items of Equip. under $50 Ea. as Evidenced by Attached List, Ex. "B"	79.57	1,293.39

(d) Operating Equipment

Owned
Same as for Sinking = $28,573.93
+ 945'-20# Mine Rail 657.19
$29,231.12

Figure Depreciation at 3%/Mo. $876.93

Rented (Rent Applied against Purchase)
Compressor/Mo. $561.00
Mucker/Mo. 410.00 971.00 1,847.93

(e) Rehabilitation & Repairs - None

(f) New Buildings, Improvements, Installation - None

(g) Miscellaneous
Same as for Sinking $1,195.47
+ Assays (20/Mo. at $3 Ea.) 60.00 1,255.47

$8,189.76

6. Estimate of Costs (Cont'd.) Brt. Fwd..... $8,189.76

(h) Contingencies
Estimate at 10% of Other Costs 818.98

GRAND TOTAL - PER MO. $9,008.74

Experience in drifting at the 200' level indicates we can expect to make about 200' of hole per month with two shifts on a 48-hour week. This results in a cost per foot of drift = $9,008.74 ÷ 200 = $45.04, making a total cost of 1200' of exploratory drift = $54,048.00.

Total Cost of Proposed Program:

Sinking	$30,357.60
Drifting	54,048.00
Total	$84,405.60

7. (a) We are prepared to furnish our share of the cost in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1).

(b) We propose to furnish our share of the costs in money.

CERTIFICATION

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

DATED June 16, 1955.

PARAMOUNT EXPLORATION COMPANY

By L. L. Lambert
President

Lucille Pyle
Assistant Secretary

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EXHIBIT "A"

EQUIPMENT OWNED BY PARAMOUNT EXPLORATION COMPANY

Quantity	Description	Amount
1	GMC 60 KW Diesel Driven Generator Set	$6,500.00
1	B-111 Sullivan Hoist W/30 HP Electric Motor	2,050.00
1	TM6 5 HP Coppus Mine Blower W/5 HP Motor	450.00
350'	5/8" Dia. Wire Cable, Non-Rotating	131.30
2	16' x 20' Steel Butler "Pan-L Frame" Buildings	1,731.28
1	35' All Steel Bolted Headframe W/28" Dia. Sheave	1,750.00
1	Dump Chute (Attached to Headframe)	213.45
1	Single Car Mine Shaft Cage, Complete, All Steel	750.00
1	Shaft Guide Crosshead	339.60
1	SW58 Gardner-Denver Sinking Drill, Pneu.	400.00
1	Gardner-Denver Comb. Sinking Drill & Feedleg	668.00
1	18 Gal. Steel Water Receiver Tank	87.00
1	1954 Dodge V8 3/4 Ton Pickup	1,984.54
1	1954 Willys Jeep and Cab	2,043.50
1	DR 299 Detectron Nucliometer	680.00
1	Detectron Geiger Counter	139.50
1	2-Unit West. Elec. Mine Telephone & Signal System	130.35
1	5KVA General Electric Dry Transformer	96.67
1	Elec. Detonator & Galvanometer Comb.	53.75
2	20# CO_2 Fire Extinguishers	92.00
700'	2" Gal. T&C Air Line Pipe	343.63
700'	3/8" Gal. T&C Water Line Pipe	77.00
300'	3/4" Rubber Air & Water Hose, Coupled	167.92
6	Edison Miners Lamps, Rack, Rectifier Charg. Set	449.56
1	16 Cu. Ft. Mine Car, End & Side Dump Comb.	241.60
100'	10" Flex Ventube	100.00
204'	10" Metal Vent Pipe	244.80
108'	12" Metal Vent Pipe	156.60
4	Vent Pipe Connectors	82.97
1	B&D Electric 10" Saw	85.41
1	B&D 1/2" Electric Drill	60.00
1	Air Tugger H.B. & 200' 5/16" Wire Line	737.50
1	Compressor (Invest. for 10 Months Toward Purchase)	5,500.00
	Total	$28,537.93

EXHIBIT "B"

MISCELLANEOUS MATERIALS, SUPPLIES AND ITEMS OF EQUIPMENT COSTING LESS THAN $50.00 EACH

Quantity	Description	Amount
1	Delta Bench Grinder, Electric	$36.00
1	1/2" Socket Set	23.00
1	Box end Wrench Set	48.00
1	Brace & Bit (5) Set	15.00
3	Hand Saws at $6.64 Ea.	19.92
1	Plane, H.D.	9.60
10	Shovels at $3.85 Ea.	38.50
2	Plomb Bobs at $2.85 Ea.	5.70
2	1" Chisels at $1.94 Ea.	3.88
2	2" Chisels at $2.85 Ea.	5.70
2	Expansion Bits	2.00
1	Electric Drill Set	17.00
1	Pipe Threading Set	39.00
1	Pipe Cutter	9.85
1	Screw Plate Complete	44.10
1	Tap and Die Set	39.00
1	Vise	10.53
2	Pr. Tin Snips at $4.15 Pr.	8.30
2	Plastic Head Hammers at $4.80 Ea.	4.80
8	Hammers at $2.26 Ea.	18.08
2	12" Crescent Wrenches at 2.37 Ea.	4.74
2	Line (Air) Oilers at $21.20 Ea.	42.40
1	18" Crescent Wrench	7.18
1	Wheelbarrow (6 Cu. Ft.)	29.50
2	18" Pipe Wrenches at $5.50 Ea.	11.00
1	24" Pipe Wrench	9.50
4	Picks at $2.10 Ea.	8.40
3	Axes at $3.50 Ea.	10.50
	Misc. hack saws, blades, screwdrivers, & Small Tools	100.00
2	Oil Heaters at $40.00 Ea.	80.00
1	First Aid Kit	15.00
	Total	$716.18

NOTE:- The above items cover 9 months' operations, making the average monthly cost $716.18 ÷ 9 = $79.57.

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A. J. EARDLEY
PRESIDENT 8-9448
F. W. CHRISTIANSEN
VICE-PRESIDENT 7-4980
N. C. WILLIAMS
VICE-PRESIDENT 87-1812
W. L. STOKES
VICE-PRESIDENT 6-5614
A. W. ROGERS
SEC.-TREAS. 84-1748
C. L. ASHTON
DIRECTOR 9-1115

GEOPROFESSIONAL SERVICES, INC.
141 EAST SECOND SOUTH — SUITE 203 — SALT LAKE CITY 1, UTAH

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GEOLOGIC REPORT ON THE PARAMOUNT EXPLORATION COMPANY PROPERTIES MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

INTRODUCTION

The Paramount Exploration Company properties are in Section 26, Township 26 South, Range ~~4~~ 3? Fmgm. (see Geologic map) West, and Section 4, Township 27 South, Range 3 West, Salt Lake Base and Meridian, Marysvale District, Piute County, Utah. (See index and geologic maps.)

The Marysvale area is about 200 miles south of Salt Lake City at the northwestern margin of the Colorado Plateau province. The subject property is about three miles northeast of Marysvale, Utah.

Since the turn of the century, Marysvale has been the center of considerable intermittent mining activity. It was first known as a gold mining camp. During World War I, alunite was mined and processed in the Marysvale District for the recovery of potash. During World War II, alunite was again mined on a limited scale, while attempts were being made to successfully recover alumina. With the discovery of uranium in June 1949, the district was again rejuvenated, and interest in the area has mounted to the present.

GEOLOGY

General Statement

The Marysvale uranium-producing district is in the northern part of the South-Central Utah Volcanic Field, which lies along the northwestern margin of the Colorado Plateau province. Igneous rocks of the volcanic field consist of a wide variety of Tertiary lava flows, tuffs, and tuff-breccias, which have been intruded by varying sized bodies of quartz monzonite, quartz monzonite porphyry and granite. The uranium producing mines of the district are located mainly in shear zone within the quartz monzonite intrusive and closely related rocks. The Marysvale deposits are not known to be related to the well-known "sedimentary" type of the Colorado Plateau.

Stratigraphy

The major stratigraphic units established in the district, from oldest to youngest, are as follows:

1. Sedimentary formations of Pre-Tertiary ages, mainly sandstones, limestones, and shales of the Permian, Triassic and Jurassic periods. (Not apparently significant in the uranium district).
2. Early Tertiary (?) andesites and latites, largely tuffs and tuff-breccias.
3. Tertiary quartz monzonite, quartz monzonite porphyry, and associated fine-grained granite.
4. Late Tertiary flows, tuffs and tuff-breccias, mainly rhyolite.
5. Quaternary alluvium, river deposits, and terrace deposits.

The rocks on the Paramount properties include rhyolite, granite, quartz monzonite, and quartz monzonite porphyry. The distribution and areal rxtent of these units, and their relationship to the uranium-producing district, are shown on the accompanying geologic map.

Igneous Rocks

The Igneous rocks present in the producing part of the district consist of five units. Their specific relationship to the producing zones is shown on the geologic map. Field descriptions of these igneous units and the Quaternary alluvium, beginning with the oldest and proceeding to the youngest, is given in the following paragraphs.

Bullion Canyon Volcanics. The Bullion Canyon volcanics are the most widely distributed formation exposed in the Marysvale district. They consist mainly of latite, andesite, and biotite porphyry. The great variation of lithology and the lenticular nature of the members of this formation make correlation relatively difficult. Tuffs and local flow breccias are common in the lower member of the formation.

Quartz Monzonite. The main stock-like intrusive body of the central area which forms the "core" of the Marysvale producing area is a medium-grained, gray to greenish-gray, equigranular rock composed of approximately equal amounts of orthoclase and plagioclase and about ten percent quartz. Biotite and pyroxenes are the most common accessory minerals. Near the mineralized zones these accessory

minerals are usually altered to chlorite and magnetite, and the feldspars are altered to various clay minerals.

Quartz Monzonite Porphyry. Closely associated in time and space with the quartz monzonite, are monzonite porphyry and quartz monzonite porphyry igneous bodies. These are interpreted as border facies of the main quartz monzonite body. The porphyry bodies are less acidic in composition than the main quartz monzonite; however, they are considerably different in texture. Approximately equal amounts of orthoclase and plagioclase are present, and the amount of quartz varies from about ten percent to less than five percent. The accessory minerals are mainly biotite and pyroxene. Contacts between the porphyry and the quartz monzonite are generally gradational, but in some localities sharp contacts are present.

Fine-grained granite. Small, irregularly shaped bodies of fine-grained rock which are mapped as granite, are exposed throughout the central area, but are particularly well developed along the borders of the quartz monzonite stock. The rock is gray to brown in color and is composed of orthoclase and quartz. None of the common accessory minerals are present in the granite, but it usually contains some pyrite. The alteration products of the pyrite, mainly limonite, are responsible for the light brown to brown color of the rock on weathered surfaces.

Mt. Belknap red facies. The red facies of the Mt. Belknap formation form the oldest member of the formation. This member rests unconformably on the weathered surfaces of the Bullion Canyon

volcanics. The bulk of the formation, however, consists of pink to brick red flows and flow breccias with intercolated tuffs. The upper rhyolite flows usually display well-developed flow structure. The lower part of the unit consists of tuff and volcanic glass (obsidian and pitchstone). The red facies of the Mt. Belknap formation crop out immediately south and west of the producing mines of the central part of the district.

Quaternary alluvium. In most of the gullies and canyons and on the lower slopes and flats adjacent to the larger stream valleys are extensive deposits of unconsolidated stream and river deposits. They consist mainly of angular to rounded particles of rock composed mainly of the rock types listed above.

STRUCTURE

General Statement

Several strong structural elements have been discovered within the central area (see geologic map). The most prominent and productive of these are relatively complex northeast-southwest trending, essentially vertical shears. Along these shears are located several of the largest ore bodies thus far discovered in the district, such as those occurring along the Prospector, Freedom No. 1 and Freedom No. 2 zones.

Producing Structures

The importance of structural control in the localization of uranium ore in the Marysvale district is clearly shown in all of the producing mines. Ore bodies have been found in three types:

of structures, tabular bodies in vertical shears, cylindrical bodies at vertical shear intersections, and rudly tabular bodies on gently inclined contacts between the quartz monzonite and younger (?) volcanics where the contact is intersected by vertical shears.

The vertical shears trending N 65° E in the quartz monzonite contain most of the ore shoots. The richest ore bodies are apparently centered in highly brecciated and relatively open parts of the shears. The main uranium-bearing materials, black fluorite (CaF_2), jordisite (MoS_2), ilsemannite (complex Molybdenum sulphate), pyrite, quartz and calcite fill the interstices of the breccia which is composed mainly of highly altered fragments of quartz monzonite (?). Some of the altered quartz monzonite fragments contain disseminated particles of the uranium-bearing materials, and others of them have been partly replaced. Small amounts of very fine-grained uranium oxide are disseminated through the vein material.

The east-west vertical zone in the Freedom No. 2 mine contains ore shoots essentially identical to the northeast trending structure of the Freedom No. 1 and the Prospector. However, where it intersects the northeast trending vertical shear zone, a comparatively large, cylindrical, low grade ore body developed. The uranium-bearing materials in this body occur as disseminations and fissure fillings in the greatly altered and fractured quartz monzonite of the intersection zone. The tenor of the ore in the fissures themselves is generally higher than the tenor of the ore in larger ore bodies located at their intersection.

The generally "open" nature of the structures such as breccia, open cavities, crustification, breccia filling, and comb structure, in addition to the nature of the primary minerals, indicate that the deposits developed near the surface at relatively low temperatures and pressures and are, therefore, of the epithermal type. Under these conditions, it might be expected that the deposits may extend in depth to about 2500 feet, although there are some indications in the lower levels of the operating mines that their vertical extent may be much less than this. Ore has been developed to a depth of approximately 700 feet.

MINERALIZATION

Pitchblende, fluorite, magnetite, pyrite, quartz, calcite, and jordisite are the chief primary minerals occurring in the producing zones. The primary ore minerals are generally completely altered in the surface zone down to about 150 feet. The common secondary minerals are autunite, $Ca\ (UO_2)_2\ (PO_4)_2 \cdot 10\text{-}12\ H_2O$, schroeckingerite, $NaCa_3(UO_2)(CO_3)_3(SO_4)F \cdot 10\ H_2O$, torbernite, $Cu(UO_2)_2(PO_4)_2 \cdot 8\text{-}12\ H_2O$, and several unidentified yellow minerals. No apparent secondary enrichment has occurred in the veins as indicated by the fact that the tenor of the ore does not change in passing from the primary zone into the oxidized zone. The secondary minerals, once formed, remain essentially in their position of evelopment.

ALTERATION

Wide belts and broad patches of altered and highly colored intrusive and extrusive rocks are exposed in and surrounding the central producing part of the district. The Bullion Canyon volcanics, which were the host rocks for most of the intrusives, are extensively altered. Kaolinization, alunitization, and silicification are the chief processes responsible for the large and widely scattered bodies of altered igneous rock occurring within the district.

In and adjacent to the productive zones within the central quartz monzonite intrusive, hydrothermal alteration products are relatively more restricted. The altered zones in the quartz monzonite vary from a few feet to fifty feet in width, and the intensity of alteration varies from completely altered quartz monzonite in the shear zones and adjacent to some of the uranium veins, to fresh, unaltered rock in the walls adjacent to the shear zones.

Although all of the ore-bearing structures have been variably altered, it is not known if one, all, or any of the stages of alteration coincided in time and space with the development of the primary uranium minerals. The products of alteration, both hydrothermal and supergene, nevertheless, are very helpful in field mapping and in the discovery and specific location of potentially productive shear zones. Future alteration studies may relate certain specific types of alteration with the introduction of primary uranium minerals, in which case an additional ore-finding tool can be put to good use in the Marysvale District.

GENERAL EXPLORATION

Current exploration work is based largely on the experience gained during the discovery, exploration, and development of the producing mines of the district, all of which are located on well-defined structures as noted above. Several shear zones are being explored in areas adjacent to the producing mines, as exemplified by the work of the Paramount Exploration Company.

The above discussion is intended to give the general geologic setting of the uranium deposits immediately west of the Paramount properties, since the general geologic conditions of the producing area are essentially identical to those existing on the subject property.

PARAMOUNT PROPERTY

The Paramount property includes the eastward extension of the Prospector No. 1 shear zone. This shear zone to the southwest of the Paramount property contains considerable uranium ore. A shaft has been sunk to a depth of 200 feet on the Paramount property immediately to the north of the structure. At the 200 foot level, a cross-cut driven to the south intersected this main shear zone. The same cross-cut was driven beyond to a second shear zone (see map of underground workings).

Further exploration has consisted of drifting northeastward along the main shear zone approximately 225 feet and southwestward a distance of 200 feet.

Although ore has not been encountered in the explored area of the Paramount claims, there are certain conditions and considerations that justify further explorations.

The general nature of the main shear zone being explored on the Paramount claims is essentially identical to the southwest extension of this structure on producing Prospector claims. The mineralization consists of two types: (1) Alteration of the feldspar to various clay minerals and the ferro-magnesium minerals to hydroxides and oxides of iron; and (2) Introduction of quartz, pyrite, calcite, and small amounts of uranium oxide as indicated by chemical assays of horizontal strip samples averaging five feet in width and taken from various parts of the exposed shear zone on the 200 foot level. These samples show the percentage of contained U_3O_8 to range from 0.010 to 0.090.

The intensity of alteration is not as high as alteration occurring in parts of the ore-bearing shear zone to the southwest. However, it is believed that intense alteration is not a prerequisite for uranium ore occurrence in the Marysvale District, since it is known that uraninite occurs in fractures in relatively fresh monzonite in the lower levels of the Prospector Mine.

In most respects the prospector shear zone on the Paramount properties is identical to its extension westward. It retains about the same general attitude and strength for several hundred feet.

At present it is not known what the specific factors are that localize the ore within the shear zones; consequently, a specific evaluation is impossible. However, in view of the close proximity to production, and the essentially identical structural, stratigraphic, and mineralogic conditions on the Paramount properties as compared to the producing properties to the west, it is our opinion that further exploration is warranted.

RECOMMENDATIONS

Considering the exploration work that is presently complated as the first phase, it is recommended that two additional phases be initiated, the second phase to consist of sinking the shaft to 440 feet in depth and driving drifts along the shear zone a minimum of 150 feet northeastward and 150 feet southwestward from a point on the shear immediately south of the bottom of the shaft. A crosscut should be driven from the lower drift northward a distance of 900 feet for the purpose of intersecting a number of east-west and northeast-southwest mineralized shears that are present in the north-south V.C.A. cross-cut from the Prospector to the Freedom No. 1, and which may extend underneath the Paramount properties.

It is recommended that the third phase consist of approximately 5000 feet of diamond drilling to explore favorable zones and structures outside the immediate area of underground workings. Specific

recommendations for this drilling should be made after phase two is completed and additional information is obtained. During the second and third phases of the exploration program, it may become necessary to at any time re-evaluate the program in light of new geologic conditions that may be revealed as the work progresses.

Submitted by,

GEOPROFESSIONAL SERVICES, Inc.

F. W. Christiansen

Warren L. Anderson

Warren L. Anderson

WLA:cj

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JUN 20 1955

A. J. EARDLEY
PRESIDENT 8-9448
F. W. CHRISTIANSEN
VICE-PRESIDENT 7-4980
N. C. WILLIAMS
VICE-PRESIDENT 87-1812
W. L. STOKES
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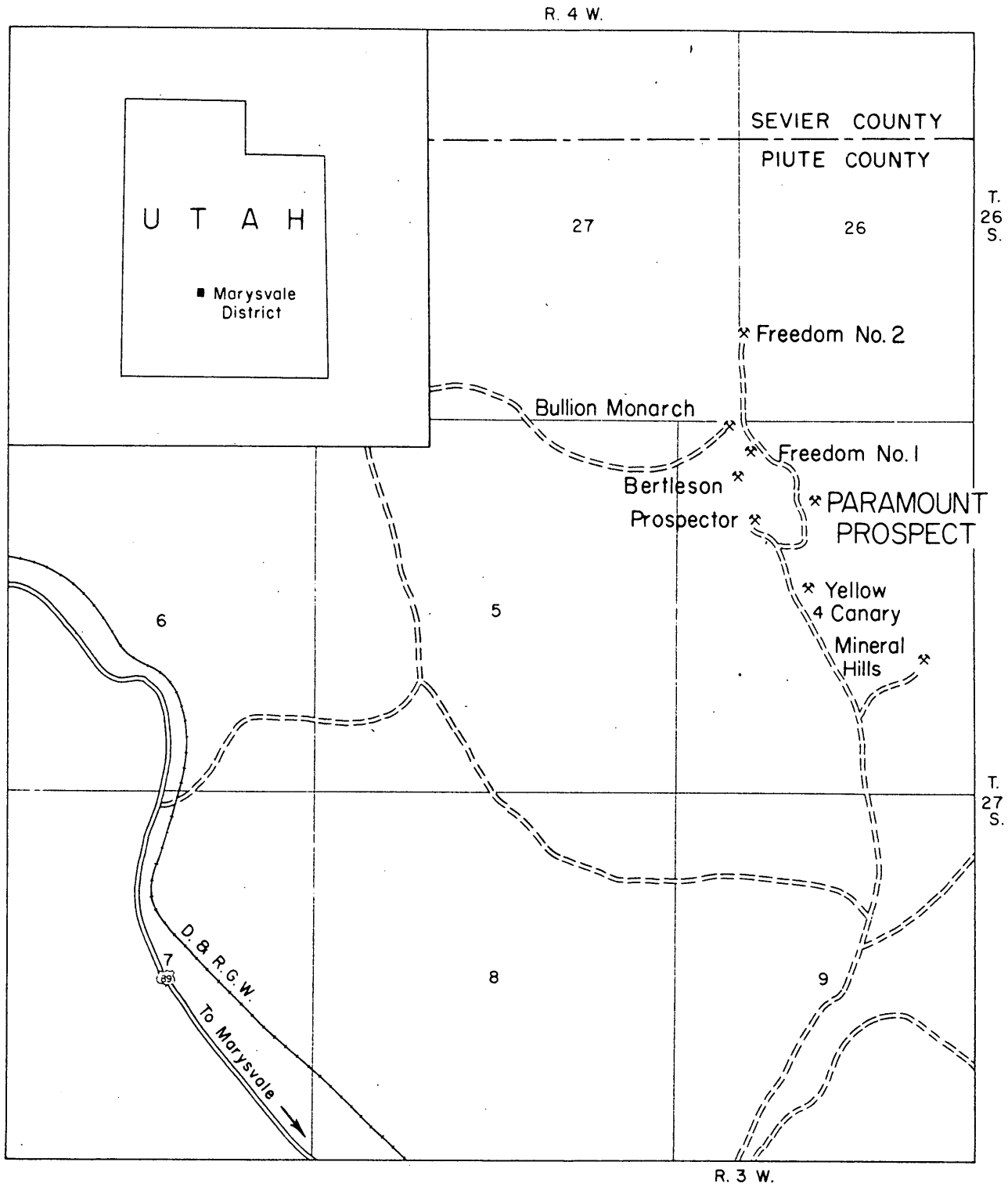
The major stratigraphic units established in the district, from oldest to youngest, are as follows:

1. Sedimentary formations of Pre-Tertiary ages, mainly sandstones, limestones, and shales of the Permian, Triassic and Jurassic periods. (Not apparently significant in the uranium district).
2. Early Tertiary (?) andesites and latites, largely tuffs and tuff-breccias.
3. Tertiary quartz monzonite, quartz monzonite porphyry, and associated fine-grained granite.
4. Late Tertiary flows, tuffs and tuff-breccias, mainly rhyolite.
5. Quaternary alluvium, river deposits, and terrace deposits.

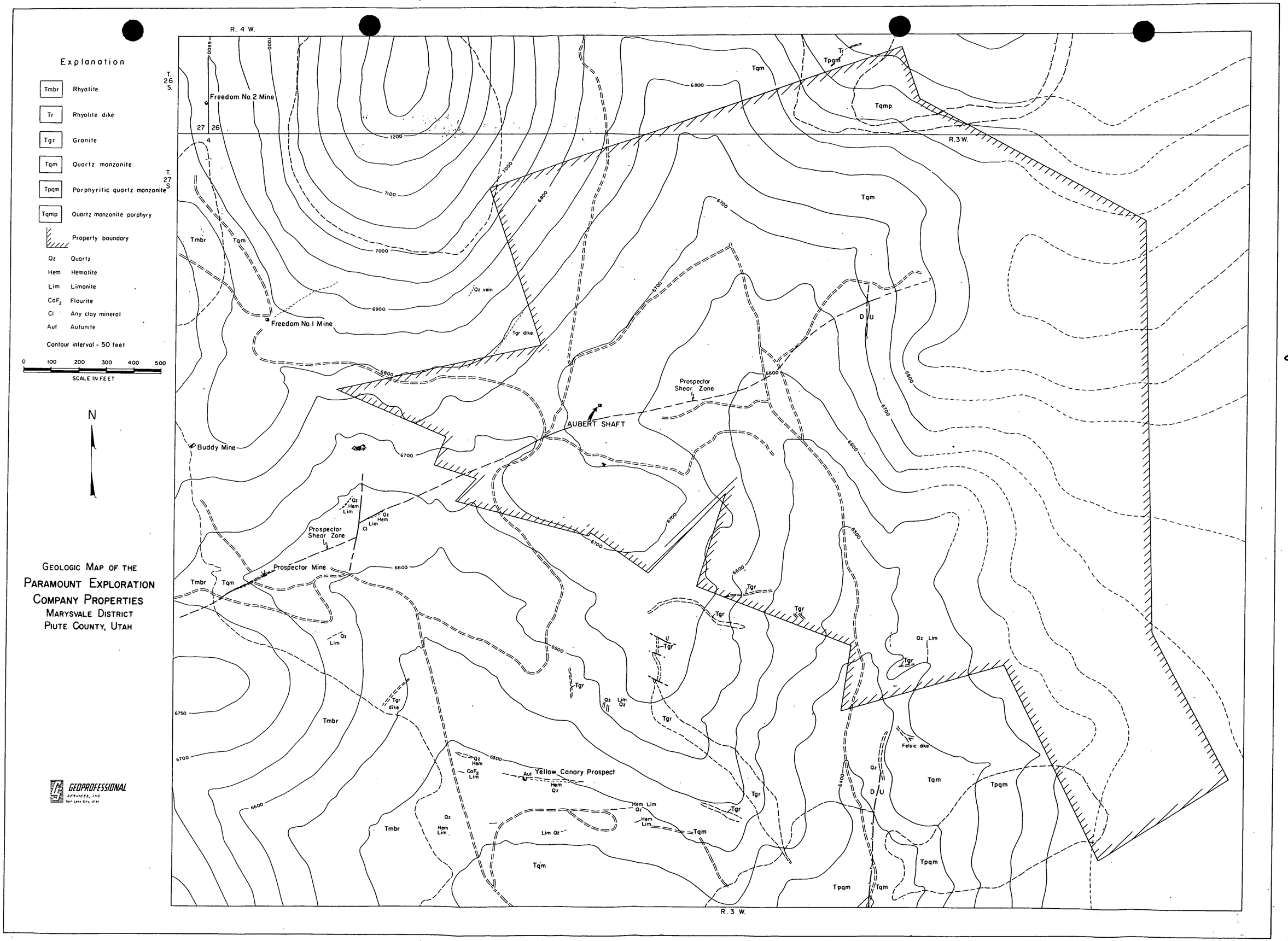


INDEX MAP OF

THE CENTRAL AREA OF THE MARYSVALE DISTRICT

PIUTE COUNTY, UTAH

GEOPROFESSIONAL SERVICES, INC
Salt Lake City, Utah



GEOLOGIC MAP OF THE
PARAMOUNT EXPLORATION
COMPANY PROPERTIES
MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

GEOPROFESSIONAL
SERVICES, INC
Salt Lake City, Utah

RECEIVED
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The rocks on the Paramount proportion include rhyolite, granite, quartz monzonite, and quartz monzonite porphyry. The distribution and areal extent of these units, and their relationship to the uranium-producing district, are shown on the accompanying geologic map.

Igneous Rocks

The Igneous rocks present in the producing part of the district consist of five units. Their specific relationship to the producing zones is shown on the geologic map. Field descriptions of these igneous units and the Quaternary alluvium, beginning with the oldest and proceeding to the youngest, is given in the following paragraphs.

Bullion Canyon Volcanics. The Bullion Canyon volcanics are the most widely distributed formation exposed in the Marysvale district. They consist mainly of latite, andesite, and biotite porphyry. The great variation of lithology and the lenticular nature of the members of this formation make correlation relatively difficult. Tuffs and local flow breccias are common in the lower member of the formation.

Quartz Monzonite. The main stock-like intrusive body of the central area which forms the "core" of the Marysvale producing area is a medium-grained, gray to greenish-gray, equigranular rock composed of approximately equal amounts of orthoclase and plagioclase and about ten percent quartz. Biotite and pyroxenes are the most common accessory minerals. Near the mineralized zones these accessory

minerals are usually altered to chlorite and magnetite, and the feldspars are altered to various clay minerals.

Quartz Monzonite Porphyry. Closely associated in time and space with the quartz monzonite, are monzonite porphyry and quartz monzonite porphyry igneous bodies. These are interpreted as border facies of the main quartz monzonite body. The porphyry bodies are less acidic in composition than the main quartz monzonite; however, they are considerably different in texture. Approximately equal amounts of orthoclase and plagioclase are present, and the amount of quartz varies from about ten percent to less than five percent. The accessory minerals are mainly biotite and pyroxene. Contacts between the porphyry and the quartz monzonite are generally gradational, but in some localities sharp contacts are present.

Fine-grained granite. Small, irregularly shaped bodies of fine-grained rock which are mapped as granite, are exposed throughout the central area, but are particularly well developed along the borders of the quartz monzonite stock. The rock is gray to brown in color and is composed of orthoclase and quartz. None of the common accessory minerals are present in the granite, but it usually contains some pyrite. The alteration products of the pyrite, mainly limonite, are responsible for the light brown to brown color of the rock on weathered surfaces.

Mt. Bolkmap red facies. The red facies of the Mt. Bolkmap formation form the oldest member of the formation. This member rests unconformably on the weathered surfaces of the Bullion Canyon

volcanics. The bulk of the formation, however, consists of pink to brick red flows and flow breccias with intercalated tuffs. The upper rhyolite flows usually display well-developed flow structure. The lower part of the unit consists of tuff and volcanic glass (obsidian and pitchstone). The red facies of the Mt. Dollmap formation crop out immediately south and west of the producing mines of the central part of the district.

Quaternary alluvium. In most of the gullies and canyons and on the lower slopes and flats adjacent to the larger stream valleys are extensive deposits of unconsolidated stream and river deposits. They consist mainly of angular to rounded particles of rock composed mainly of the rock types listed above.

STRUCTURE

General Statement

Several strong structural elements have been discovered within the central area (see geologic map). The most prominent and productive of these are relatively complex northeast-southwest trending, essentially vertical shears. Along these shears are located several of the largest ore bodies thus far discovered in the district, such as those occurring along the Prospector, Freedom No. 1 and Freedom No. 2 zones.

Producing Structures

The importance of structural control in the localization of uranium ore in the Wayrevale district is clearly shown in all of the producing mines. Ore bodies have been found in three types

of structures, tabular bodies in vertical shears, cylindrical bodies at vertical shear intersections, and rudly tabular bodies on gently inclined contacts between the quartz monzonite and younger (?) volcanics where the contact is intersected by vertical shears.

The vertical shears trending N 65° E in the quartz monzonite contain most of the ore shoots. The richest ore bodies are apparently centered in highly brecciated and relatively open parts of the shears. The main uranium-bearing materials, black fluorite (CaF_2), jordisite (MoS_2), ilsemannite (complex Molybdenum sulphate), pyrite, quartz and calcite fill the interstices of the breccia which is composed mainly of highly altered fragments of quartz monzonite (?). Some of the altered quartz monzonite fragments contain disseminated particles of the uranium-bearing materials, and others of them have been partly replaced. Small amounts of very fine-grained uranium oxide are disseminated through the vein material.

The east-west vertical zone in the Freedom No. 2 mine contains ore shoots essentially identical to the northeast trending structure of the Freedom No. 1 and the Prospector. However, where it intersects the northeast trending vertical shear zone, a comparatively large, cylindrical, low grade ore body developed. The uranium-bearing materials in this body occur as disseminations and fissure fillings in the greatly altered and fractured quartz monzonite of the intersection zone. The tenor of the ore in the fissures themselves is generally higher than the tenor of the ore in larger ore bodies located at their intersection.

The generally "open" nature of the structures such as breccia, open cavities, crustification, breccia filling, and comb structure, in addition to the nature of the primary minerals, indicate that the deposits developed near the surface at relatively low temperatures and pressures and are, therefore, of the epithermal type. Under these conditions, it might be expected that the deposits may extend in depth to about 2500 feet, although there are some indications in the lower levels of the operating mines that their vertical extent may be much less than this. Ore has been developed to a depth of approximately 700 feet.

MINERALIZATION

Pitchblende, fluorite, magnetite, pyrite, quartz, calcite, and jordisite are the chief primary minerals occurring in the producing zones. The primary ore minerals are generally completely altered in the surface zone down to about 150 feet. The common secondary minerals are autunite, $Ca(UO_2)_2(PO_4)_2 \cdot 10\text{-}12\ H_2O$, schroeckingerite, $NaCa_3(UO_2)(CO_3)_3(SO_4)F \cdot 10\ H_2O$, torbernite, $Cu(UO_2)_2(PO_4)_2 \cdot 8\text{-}12\ H_2O$, and several unidentified yellow minerals. No apparent secondary enrichment has occurred in the veins as indicated by the fact that the tenor of the ore does not change in passing from the primary zone into the oxidized zone. The secondary minerals, once formed, remain essentially in their position of development.

ALTERATION

Wide belts and broad patches of altered and highly colored intrusive and extrusive rocks are exposed in and surrounding the central producing part of the district. The Pallisa Canyon volcanics, which were the host rocks for most of the intrusives, are extensively altered. Kaolinization, silicification, and silicification are the chief processes responsible for the large and widely scattered bodies of altered igneous rock occurring within the district.

In and adjacent to the productive zones within the central quartz monzonite intrusive, hydrothermal alteration products are relatively more restricted. The altered zones in the quartz monzonite vary from a few feet to fifty feet in width, and the intensity of alteration varies from completely altered quartz monzonite in the shear zones and adjacent to some of the uranium veins, to fresh, unaltered rock in the walls adjacent to the shear zones.

Although all of the ore-bearing structures have been variably altered, it is not known if one, all, or any of the stages of alteration coincided in time and space with the development of the primary uranium minerals. The products of alteration, both hydrothermal and supergene, nevertheless, are very helpful in field mapping and in the discovery and specific location of potentially productive shear zones. Future alteration studies may relate certain specific types of alteration with the introduction of primary uranium minerals, in which case an additional ore-finding tool can be put to good use in the Thryovale District.

GENERAL INFORMATION

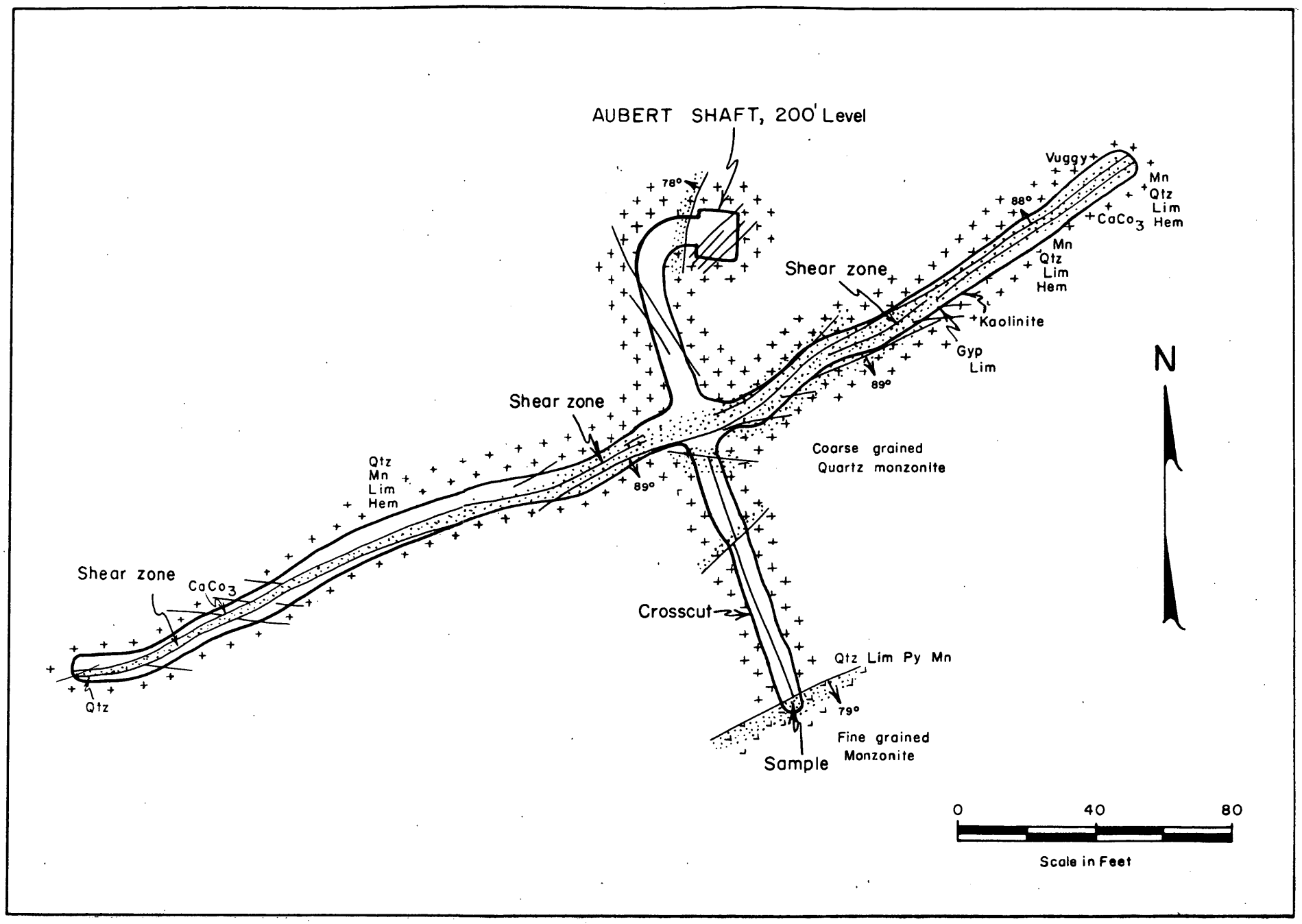
Current exploration work is based largely on the experience gained during the discovery, exploration, and development of the producing mines of the district, all of which are located on well-defined structures as noted above. Several shear zones are being explored in areas adjacent to the producing mines, as exemplified by the work of the Paramount Exploration Company.

The above discussion is intended to give the general geologic setting of the uranium deposits immediately west of the Paramount properties, since the general geologic conditions of the producing area are essentially identical to those existing on the subject property.

PARAMOUNT PROPERTY

The Paramount property includes the eastward extension of the Prospector No. 1 shear zone. This shear zone to the southwest of the Paramount property contains considerable uranium ore. A shaft has been sunk to a depth of 200 feet on the Paramount property immediately to the north of the structure. At the 200 foot level, a cross-cut driven to the south intersected this main shear zone. The same cross-cut was driven beyond to a second shear zone (see map of underground workings).

Further exploration has consisted of drifting northeastward along the main shear zone approximately 225 feet and southwestward a distance of 200 feet.



UNDERGROUND WORKINGS

PARAMOUNT EXPLORATION COMPANY

MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

GEOPROFESSIONAL
SERVICES, INC.
Salt Lake City, Utah

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Although ore has not been encountered in the explored area of the Paramount claims, there are certain conditions and considerations that justify further exploration.

The general nature of the main shear zone being explored on the Paramount claims is essentially identical to the southeast extension of this structure on producing Prospector claims. The mineralization consists of two types: (1) Alteration of the feldspar to various clay minerals and the ferro-magnesian minerals to hydroxides and oxides of iron; and (2) introduction of quartz, pyrite, calcite, and small amounts of uranium oxide as indicated by chemical assays of horizontal strip samples averaging five feet in width and taken from various parts of the exposed shear zone on the 200 foot level. These samples show the percentage of contained U_3O_8 to range from 0.010 to 0.090.

The intensity of alteration is not as high as alteration occurring in parts of the ore-bearing shear zone to the southeast. However, it is believed that intense alteration is not a prerequisite for uranium ore occurrence in the Marysvale District, since it is known that uraninite occurs in fractures in relatively fresh monzonite in the lower levels of the Prospector Mine.

In most respects the prospector shear zone on the Paramount properties is identical to its extension eastward. It retains about the same general attitude and strength for several hundred feet.

At present it is not known what the specific factors are that localize the ore within the shear zones; consequently, a specific evaluation is impossible. However, in view of the close proximity to production, and the essentially identical structural, stratigraphic, and mineralogic conditions on the Paramount properties as compared to the producing properties to the west, it is our opinion that further exploration is warranted.

RECOMMENDATIONS

Considering the exploration work that is presently completed as the first phase, it is recommended that two additional phases be initiated, the second phase to consist of sinking the shaft to 440 feet in depth and driving drifts along the shear zone a minimum of 150 feet northeastward and 150 feet southwestward from a point on the shear immediately south of the bottom of the shaft. A crosscut should be driven from the lower drift northward a distance of 900 feet for the purpose of intersecting a number of east-west and northeast-southwest mineralized shears that are present in the north-south V.C.A. cross-cut from the Prospector to the Freedom No. 1, and which may extend underneath the Paramount properties.

It is recommended that the third phase consist of approximately 5000 feet of diamond drilling to explore favorable zones and structures outside the immediate area of underground workings. Specific

recommendations for this drilling should be made after phase two is completed and additional information is obtained. During the second and third phases of the exploration program, it may become necessary to at any time re-evaluate the program in light of new geologic conditions that may be revealed as the work progresses.

Submitted by,

GEOPROFESSIONAL SERVICES, Inc.

P. W. Christiansen

Warren L. Anderson

Warren L. Anderson

WLA:ej

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
JUN 1955

Application for Aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended.

Docket No.	3862
Metal or Mineral	Uranium
Date Received	6/20/55
Estimated Cost	$84,405.62
Participation (Government $)	

1. Name of Applicant

(a) Paramount Exploration Company, 437 South Hill Street, Los Angeles 13, California.

(b) Nevada Corporation.

(c)

L. L. Aubert	President
Samuel A. Patterson	Vice President
Henry M. Paulsen	Vice President
E. J. Case	Secretary
Martin J. Weil	Treasurer
Lionel T. Barneson	Chairman of the Board

The mailing address for all of the above officers is: 437 South Hill Street, Los Angeles 13, California.

(d) Does not apply.

3. Applicant's Property Rights

(a) The applicant proposes to explore the following claims, which are located about four miles northeast of Marysvale, Utah, and are outlined on the geologic map in the attached geologic report by Geoprofessional Services, Inc.

Yellow Canary No. 2, located April 25, 1949, Recorded April 26, 1949, Book "E", Page 206.

Anita Gae No. 1, located May 30, 1949, Recorded May 31, 1949, Book "E", Page 222.

Grover Gibbs Fraction No. 2, located June 7, 1950, Recorded June 9, 1950, Book "F", Page 115.

3. Applicant's Property Rights (Cont'd.)

Lucky Strike No. 2, located April 29, 1949, Recorded May 2, 1949, Book "E", Page 208.

Fraction, located June 12, 1949, Recorded June 13, 1949, Book "E", Page 229.

Camel No. 1, located May 1, 1949, Recorded June 5, 1949, Book "E", Page 209.

Lost Dutchman No. 1, located March 11, 1948, Recorded March 11, 1948, Book "E", Page 85.

Lucky Strike No. 2 Fraction, located November 20, 1954, Recorded November 23, 1954, Book "G", Page 444.

All in the County of Piute, State of Utah.

(b) Paramount Aubert Shaft.

(c) Owner by assignment. (Assignors reserved 10% overriding royalty only).

(d) Does not apply.

(e) None.

(f) See "A" above.

4. Physical Description

(a) Bulldozer work, together with the use of the nucleometer on the surface, has indicated the presence of several shear zones. These extend northeasterly across our claims from the Vanadium Corporation of America property to the west where they are being mined. The Prospector shear zone shown on the geologic map in the attached Geoprofessional Report is one of the more prominent of these zones.

4. Physical Description (Cont'd.)

A vertical one compartment shaft, with manway, has been sunk to the 200' level to explore the prospector shear zone. The shaft is timbered, shored, and secured by sinking rods. It is electrified and equipped with ventilation tubes, air lines, water lines, and water receiver tanks. From the 200' station, we have approximately 500' of exploratory drifts as shown in detail on the Map of Underground Workings in the Geoprofessional Report. The drifts are complete with rail, electric lights, mine ventilation duct and a Gardner-Denver No. 9 mucking machine and accessories.

The mine head frame is 35' high, all metal bolted construction. There is car and mine cage, cable operated, with a Sullivan Model B-111 mine shaft hoist electrically operated by a 30 hp, 1140 RPM, slip ring motor driven by a GM 60 kw diesel generator and all accessories necessary for hoisting operations. We have a 1955 Gardner-Denver Model WM365D, two stage air compressor, diesel driven, unitized and portable, with accessories. This equipment is housed in two Butler 16' x 20' steel Pan-L buildings. All buildings, machinery and head frame are anchored on cement foundations.

We have 100% interest in these operations.

The mine workings are accessible at any time for examination purposes by contacting Mr. R. R. Kennedy, our Geologist, in Marysvale, Utah.

(b) There is no past or present production and no presently discovered reserves.

(c) See attached geologic report by F. W. Christiansen and Warren L. Anderson, of Geoprofessional Services, Inc.

(d) County graded road and AEC Vanadium Corporation road offers access from Marysvale to the property, located four miles to the northeast. Marysvale is the supply and residential point and also has a Denver & Rio Grande Freight Depot and an AEC buying depot.

4. Physical Description (Cont'd.)

(e) Manpower, Water, and many supplies are readily available in the local Marysvale area. Certain materials and equipment come from Salt Lake City, Utah (190 miles distant). Electric power is generated at the mine by a diesel powered generator.

5. The Exploration Project

(a) Uranium.

(b) Please refer to the attached geologic report for maps and discussion relating to the proposed work. On Pages 14 and 15 are found the recommendation for additional exploratory work. This application relates only to the "second phase" set out therein, consisting of further sinking and drifting. Aid to cover the so-called "third phase" consisting of diamond drilling of areas farther to the east is not being applied for.

(c) Work will start within 10 days and be completed within approximately 12 months from date of an exploration project contract.

(d) Paramount Exploration Company is a Corporation formed on September 16, 1954, for the specific purpose of exploring the properties covered by this application, on which the sinking and drifting operations described in the attached report have been carried on for the last six months. Paramount Exploration Company is owned by Bankline Oil Company and its employees. Bankline was incorporated in 1912 and has been exploring for and producing crude oil and natural gas in California and Texas continuously since that time in addition to refining and marketing petroleum products.

The mine is under the supervision of a graduate geologist with approximately three years mining experience, including work with the AEC. The over-all operation is directed by the officers of the corporation who have had from 15 to 35 years of petroleum, mining, producing, refining and management experience.

6. Estimate of Costs for the proposed work of sinking the shaft from 200' to 440', and exploring at the 440' level with 1200' of drifts.

Sinking

(a) Independent Contracts - None.

(b) Labor, Supervision, Consultants - 2 Shifts.

No.	Class	Hr. Rate	Monthly Total (Incl. Overtime for 48 Hour Week)	
	Consultants	$ -	$150.00	
1	Geologist & Superintendent	-	575.00	
1	Foreman & Timberman	-	560.00	
2	Hoist Oper.	1.83	835.99	
4	Miners	1.83	1,671.98	$3,792.97

(c) Materials & Supplies

Item	Cost Per Month	
Timber	$1,208.38	
Rods, Plates, Nails, Nuts	201.31	
Bits	65.94	
Fuel Oil & Lubricants	152.61	
Fuel & Lubricants for Vehicles	75.00	
Dynamite, Caps, Fuse & Elec. Det.	282.66	
2" Air Line & 3/8" Water Line	44.82	
10" Vent Pipe	90.00	
Wiring - Elec. & Phone	18.75	
Misc. Materials, Supplies & Items of Equip. Under $50 Ea. as evidenced by Attached List, Exhibit "B"	79.57	2,219.04

6. Estimate of Costs (Cont'd) — Brt. Fwd..... $6,012.01

(d) Operating Equipment

Owned (See Exhibit "A") - $28,537.93 Figure Depreciation at 3%/Mo.	$856.14	
Rented (Rental applied against Purchase) Compressor/Mo.	561.00	1,417.14

(e) Rehabilitation & Repair - None

(f) New Buildings, Improvements, Installations - None

(g) Miscellaneous

Item	Cost Per Month	
Telephone	$ 100.00	
Field Office	30.00	
Workmen's Comp. Insurance	135.51	
S.U.I. Insurance	60.00	
Group Insurance	63.96	
F.O.A.B.	56.00	
Maintenance of Operating Equipment - Average	750.00	1,195.47
		$8,624.62

(h) Contingencies

Estimate at 10% of Other Costs - Per Mo.	862.25
GRAND TOTAL - PER MO.	$9,486.87

Experience in sinking to the 200' level indicates we can expect to make about 75' of hole per month with two shifts on a 48-hour week. This results in a cost per foot of hole = $9,486.87 ÷ 75 = $126.49, making a total cost of sinking 240' to the 440' level = $30,357.60.

6. **Estimate of Costs** (Cont'd.)

Drifting

(a) Independent Contracts - None

(b) Labor, Supervision, Consultants
Same as for Sinking $3,792.97

(c) Materials & Supplies

Item	Cost Per Month	
Bits	$201.31	
Fuel Oil & Lubricants	152.61	
Fuel for Vehicles	75.00	
Dynamite, Caps, Fuses & Elec. Det.	375.40	
2" Air Line & 3/8" Water Line	119.50	
10" Vent Pipe	240.00	
Wiring - Elec. & Phone	50.00	
Misc. Materials & Supplies & Items of Equip. under $50 Ea. as Evidenced by Attached List, Ex. "B"	79.57	1,293.39

(d) Operating Equipment

Owned
Same as for Sinking = $28,573.93
+ 945'-20# Mine Rail 657.19
$29,231.12

Figure Depreciation at 3%/Mo. $876.93

Rented (Rent Applied against Purchase)
Compressor/Mo. $561.00
Mucker/Mo. 410.00 971.00 1,847.93

(e) Rehabilitation & Repairs - None

(f) New Buildings, Improvements, Installation - None

(g) Miscellaneous

	Cost/Mo.	
Same as for Sinking	$1,195.47	
+ Assays (20/Mo. at $3 Ea.)	60.00	1,255.47
		$8,189.76

6. Estimate of Costs (Cont'd.) Brt. Fwd..... $8,189.76

(h) Contingencies
Estimate at 10% of Other Costs 818.98

GRAND TOTAL - PER MO. $9,008.74

Experience in drifting at the 200' level indicates we can expect to make about 200' of hole per month with two shifts on a 48-hour week. This results in a cost per foot of drift = $9,008.74 ÷ 200 = $45.04, making a total cost of 1200' of exploratory drift = $54,048.00.

Total Cost of Proposed Program:

Sinking	$30,357.60
Drifting	54,048.00
Total	$84,405.60

7. (a) We are prepared to furnish our share of the cost in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1).

(b) We propose to furnish our share of the costs in money.

CERTIFICATION

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

DATED June 16, 1955.

PARAMOUNT EXPLORATION COMPANY

By L. L. Lukat
President

Lucille Foyle
Assistant Secretary

EXHIBIT "A"

EQUIPMENT OWNED BY PARAMOUNT EXPLORATION COMPANY

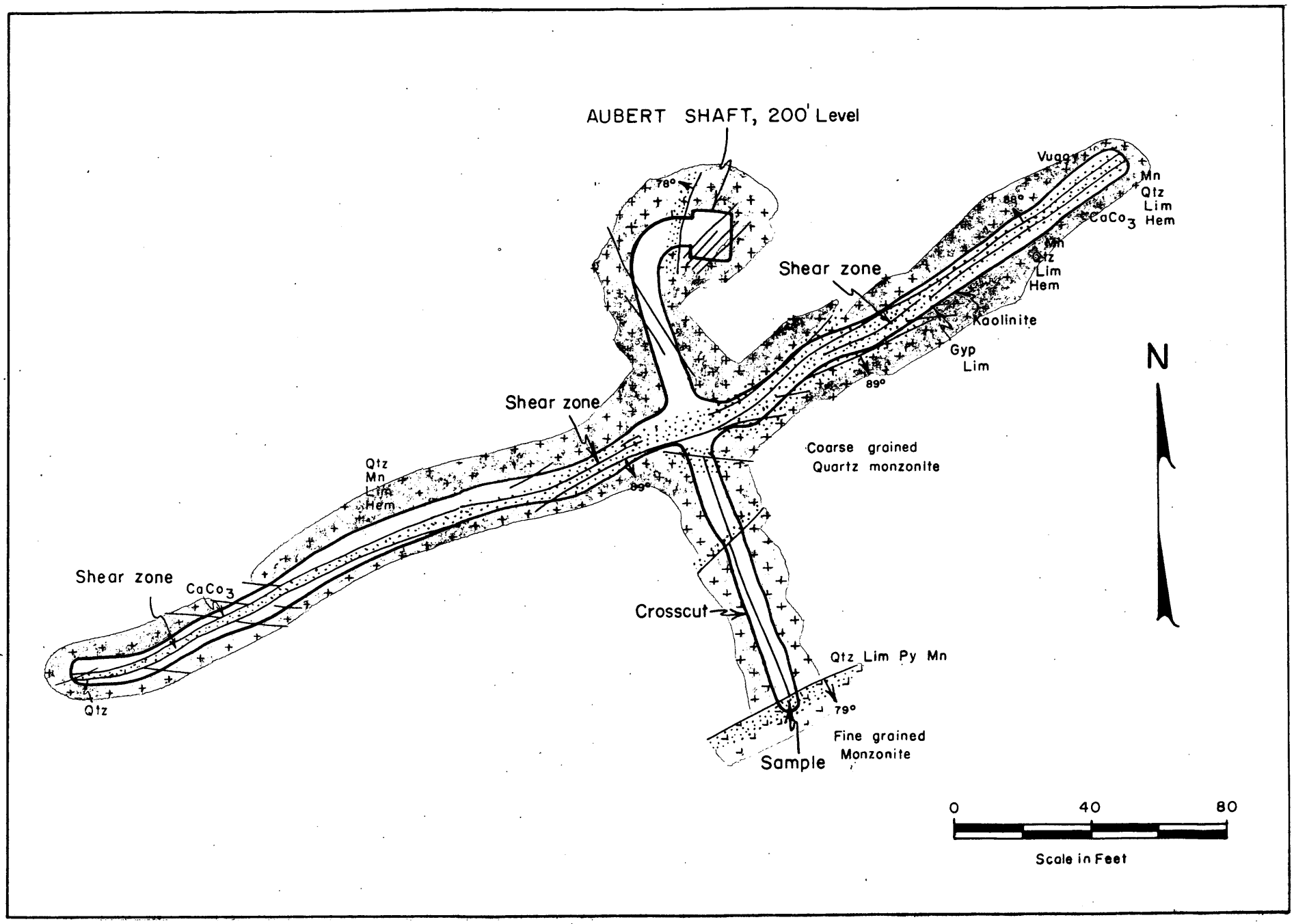
Quantity	Description	Amount
1	GMC 60 KW Diesel Driven Generator Set	$6,500.00
1	B-111 Sullivan Hoist W/30 HP Electric Motor	2,050.00
1	TM6 5 HP Coppus Mine Blower W/5 HP Motor	450.00
350'	5/8" Dia. Wire Cable, Non-Rotating	131.30
2	16' x 20' Steel Butler "Pan-L Frame" Buildings	1,731.28
1	35' All Steel Bolted Headframe W/28" Dia. Sheave	1,750.00
1	Dump Chute (Attached to Headframe)	213.45
1	Single Car Mine Shaft Cage, Complete, All Steel	750.00
1	Shaft Guide Crosshead	339.60
1	SW58 Gardner-Denver Sinking Drill, Pneu.	400.00
1	Gardner-Denver Comb. Sinking Drill & Feedleg	668.00
1	18 Gal. Steel Water Receiver Tank	87.00
1	1954 Dodge V8 3/4 Ton Pickup	1,984.54
1	1954 Willys Jeep and Cab	2,043.50
1	DR 299 Detectron Nuseiometer	680.00
1	Detectron Geiger Counter	139.50
1	2-Unit West. Elec. Mine Telephone & Signal System	130.35
1	5KVA General Electric Dry Transformer	96.67
1	Elec. Detonator & Galvanometer Comb.	53.75
2	20# CO_2 Fire Extinguishers	92.00
700'	2" Gal. T&C Air Line Pipe	343.63
700'	3/8" Gal. T&C Water Line Pipe	77.00
300'	3/4" Rubber Air & Water Hose, Coupled	167.92
6	Edison Miners Lamps, Rack, Rectifier Charg. Set	449.56
1	16 Cu. Ft. Mine Car, End & Side Dump Comb.	241.60
100'	10" Flex Ventube	100.00
204'	10" Metal Vent Pipe	244.80
108'	12" Metal Vent Pipe	156.60
4	Vent Pipe Connectors	82.97
1	B&D Electric 10" Saw	85.41
1	B&D 1/2" Electric Drill	60.00
1	Air Tugger H.B. & 200' 5/16" Wire Line	737.50
1	Compressor (Invest. for 10 Months Toward Purchase)	5,500.00
	Total	$28,537.93

EXHIBIT "B"

MISCELLANEOUS MATERIALS, SUPPLIES AND ITEMS OF EQUIPMENT COSTING LESS THAN $50.00 EACH

Quantity	Description	Amount
1	Delta Bench Grinder, Electric	$36.00
1	1/2" Socket Set	23.00
1	Box end Wrench Set	48.00
1	Brace & Bit (5) Set	15.00
3	Hand Saws at $6.64 Ea.	19.92
1	Plane, H.D.	9.60
10	Shovels at $3.85 Ea.	38.50
2	Plomb Bobs at $2.85 Ea.	5.70
2	1" Chisels at $1.94 Ea.	3.88
2	2" Chisels at $2.85 Ea.	5.70
2	Expansion Bits	2.00
1	Electric Drill Set	17.00
1	Pipe Threading Set	39.00
1	Pipe Cutter	9.85
1	Screw Plate Complete	44.10
1	Tap and Die Set	39.00
1	Vise	10.53
2	Pr. Tin Snips at $4.15 Pr.	8.30
2	Plastic Head Hammers at $4.80 Ea.	4.80
8	Hammers at $2.26 Ea.	18.08
2	12" Crescent Wrenches at 2.37 Ea.	4.74
2	Line (Air) Oilers at $21.20 Ea.	42.40
1	18" Crescent Wrench	7.18
1	Wheelbarrow (6 Cu. Ft.)	29.50
2	18" Pipe Wrenches at $5.50 Ea.	11.00
1	24" Pipe Wrench	9.50
4	Picks at $2.10 Ea.	8.40
3	Axes at $3.50 Ea.	10.50
	Misc. hack saws, blades, screwdrivers, & Small Tools	100.00
2	Oil Heaters at $40.00 Ea.	80.00
1	First Aid Kit	15.00
	Total	$716.18

NOTE:- The above items cover 9 months' operations, making the average monthly cost $716.18 ÷ 9 = $79.57.



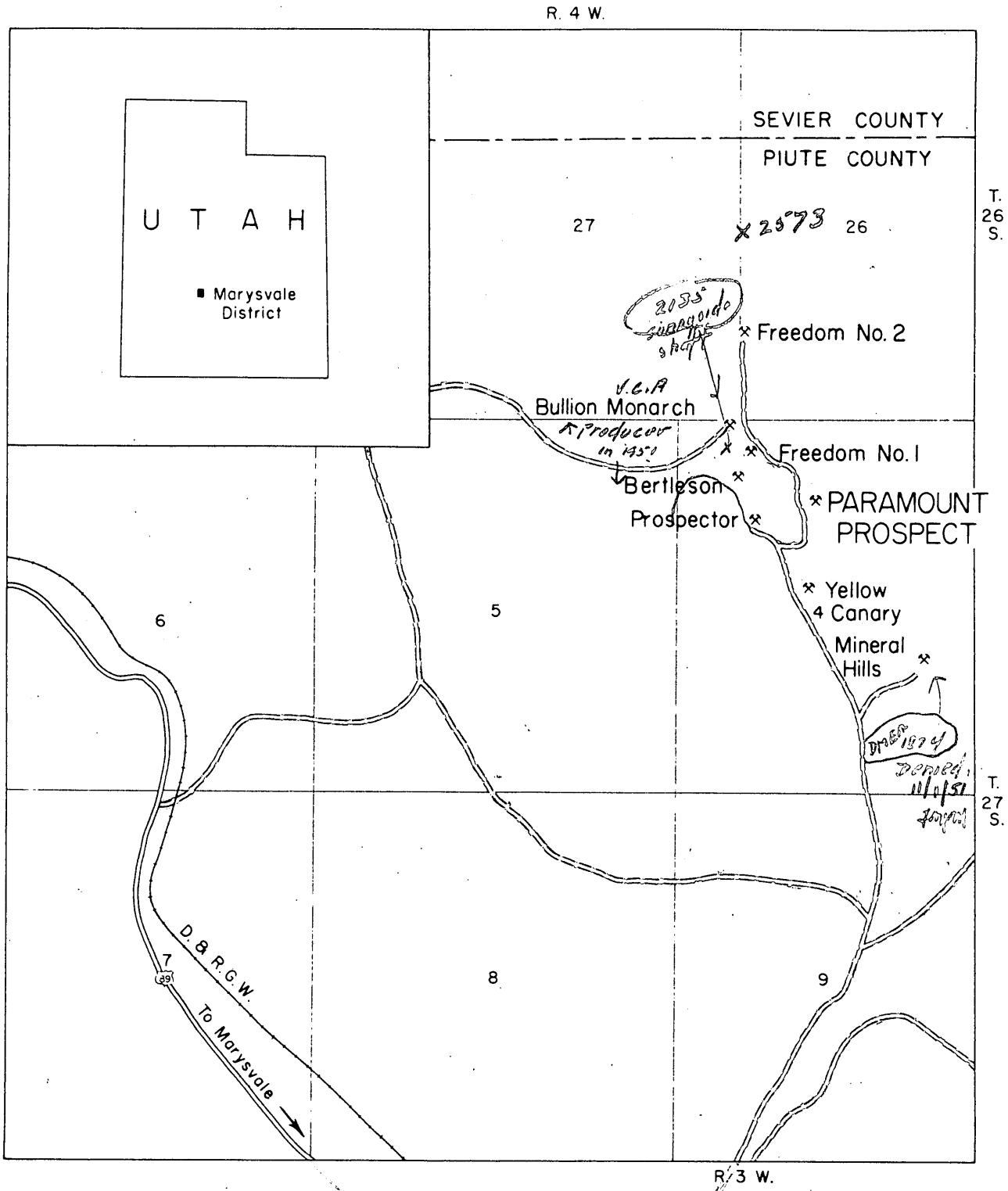
UNDERGROUND WORKINGS

PARAMOUNT EXPLORATION COMPANY

MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

GEOPROFESSIONAL
SERVICES, INC.
Salt Lake City, Utah

RECEIVED
JUN 20 1955



INDEX MAP OF
THE CENTRAL AREA OF THE MARYSVALE DISTRICT
PIUTE COUNTY, UTAH

17 16

GEOPROFESSIONAL SERVICES, INC
Salt Lake City, Utah

2135' sunnyside "Buddy Mine"

Explanation

- Tmbr — Rhyolite
- Tr — Rhyolite dike
- Tgr — Granite
- Tqm — Quartz monzonite
- Tpqm — Porphyritic quartz monzonite
- Tqmp — Quartz monzonite porphyry
- Property boundary

Qz	Quartz
Hem	Hematite
Lim	Limonite
CaF_2	Flourite
Cl	Any clay mineral
Aut	Autunite

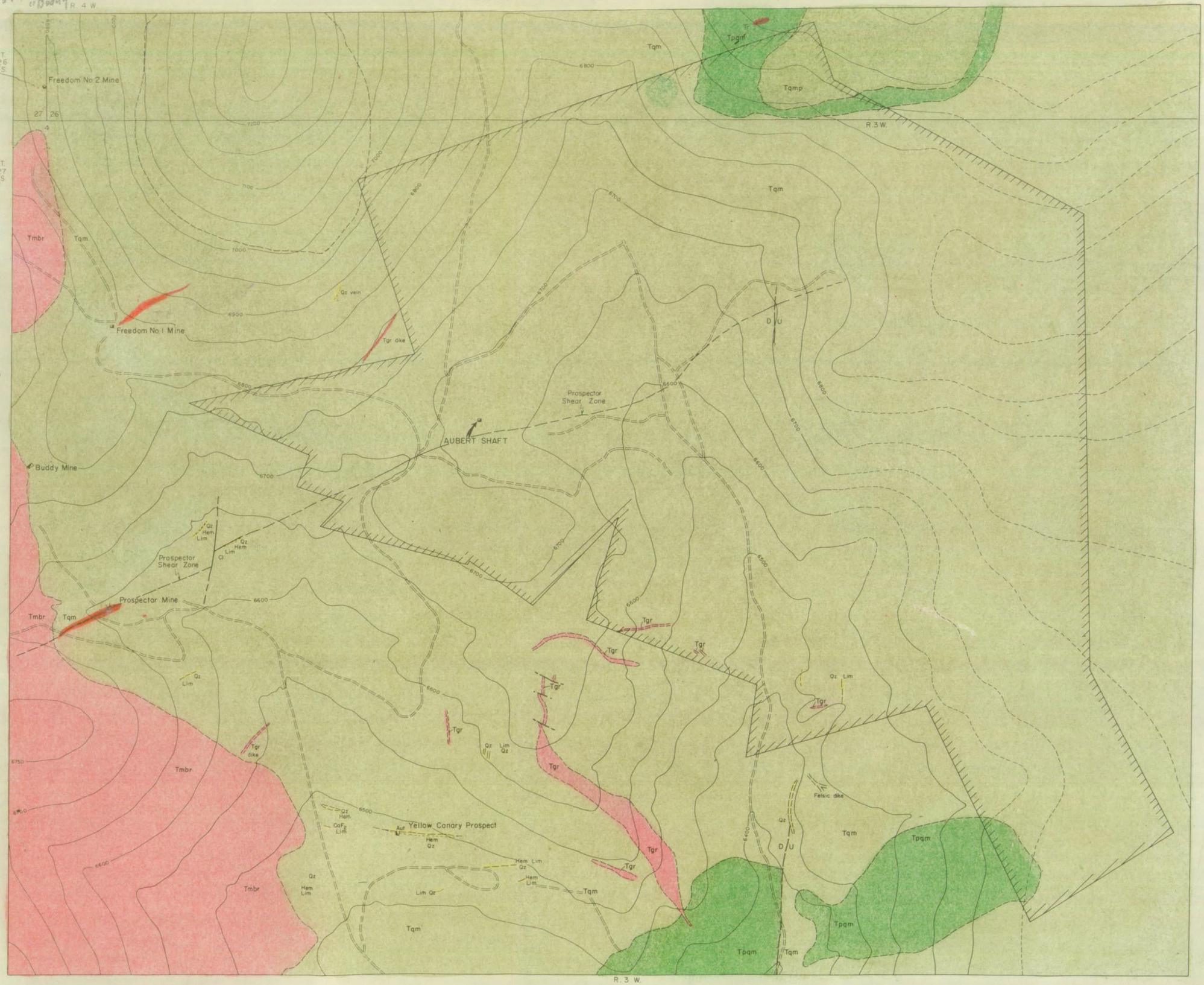
Contour interval - 50 feet

0 100 200 300 400 500
SCALE IN FEET

N

Geologic Map of the Paramount Exploration Company Properties
Marysvale District
Piute County, Utah

GEOPROFESSIONAL SERVICES, INC.
Salt Lake City, Utah



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JUN 20 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 NORTH DIVISION ST
SPOKANE 2, WASHINGTON

OFFICIAL BUSINESS

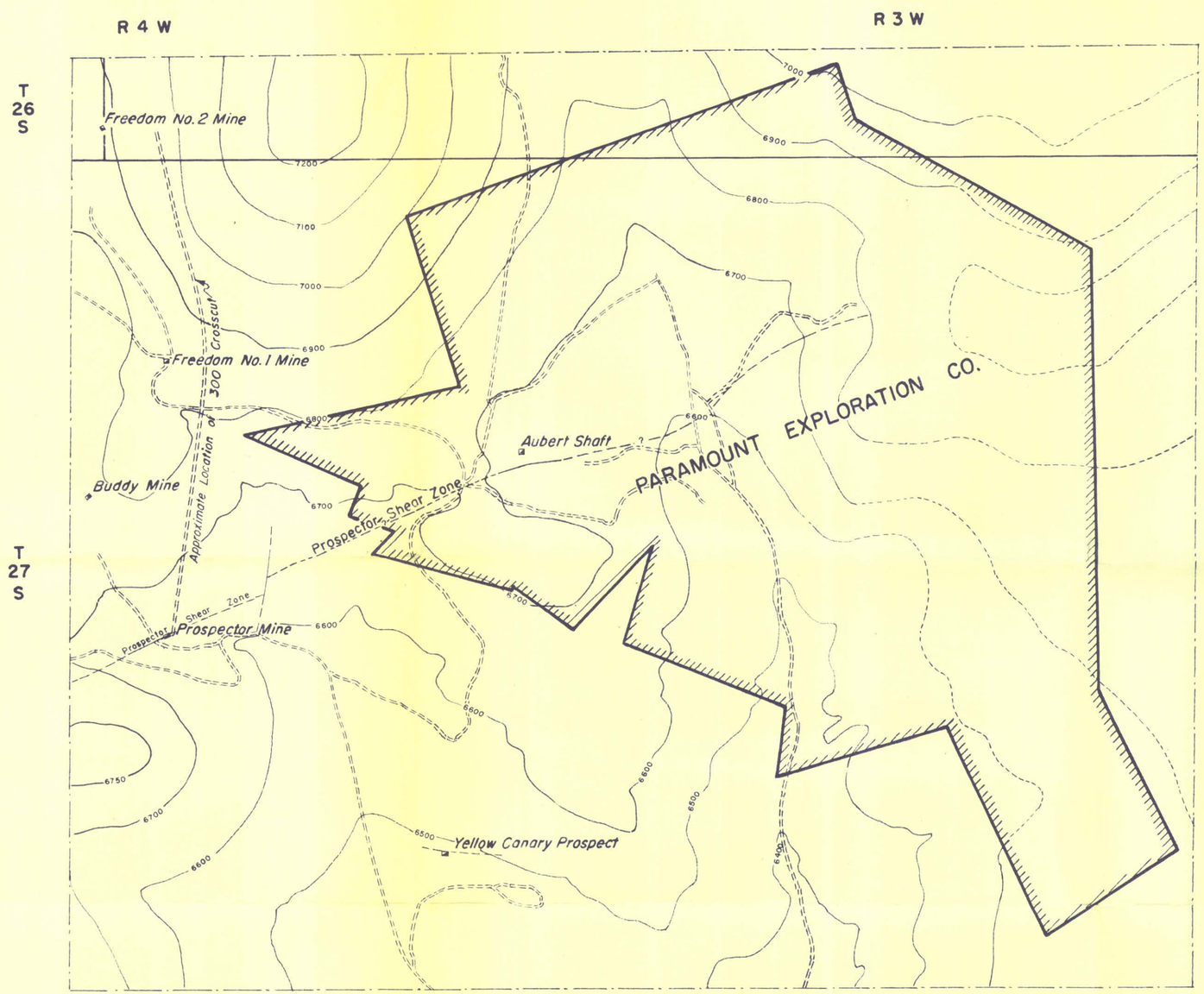
VIA AIR MAIL

PENALTY FOR PRIVATE USE, $300
PAYMENT OF POSTAGE
(PMG)

9 8PM 1955

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

VIA AIR MAIL



Surface Map

0 500 1000
SCALE OF FEET

N

NOTES

1 DATA TRACED FROM COMPANY MAP.

2 CONTOUR INTERVAL: 100 FEET.

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

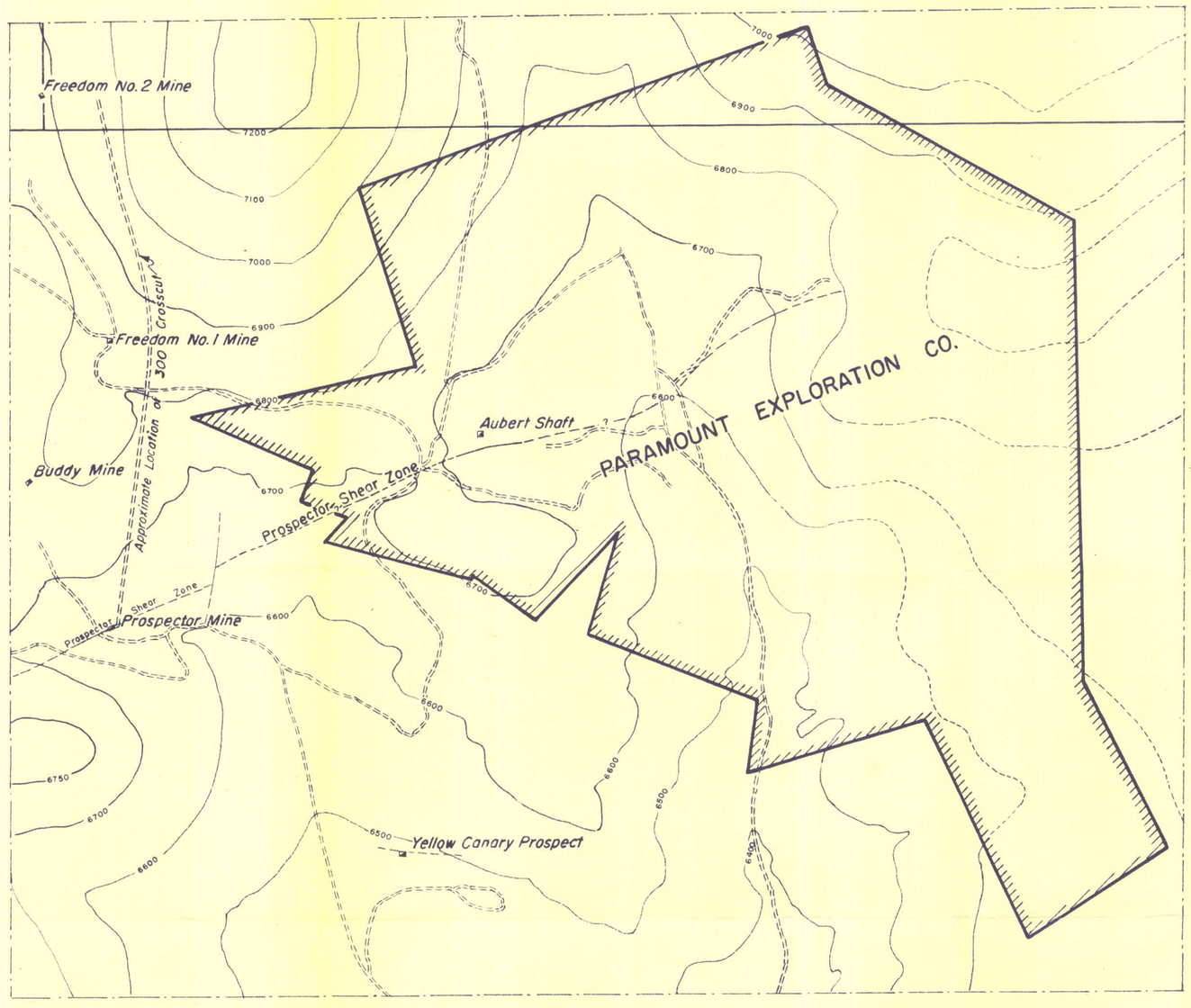
Fig. 2 DMEA Docket No. 3862

Surface Map

PARAMOUNT EXPLORATION CO.
AND VICINITY

MARYSVALE DISTRICT, PIUTE COUNTY, UTAH

ENGINEER: *Millard M. GILKEY*	DATE: OCT. 7, 1955
TRACED: OCT., 1955; BY: A. P. T. S.	1900 - 554 - D
CHECKED:	



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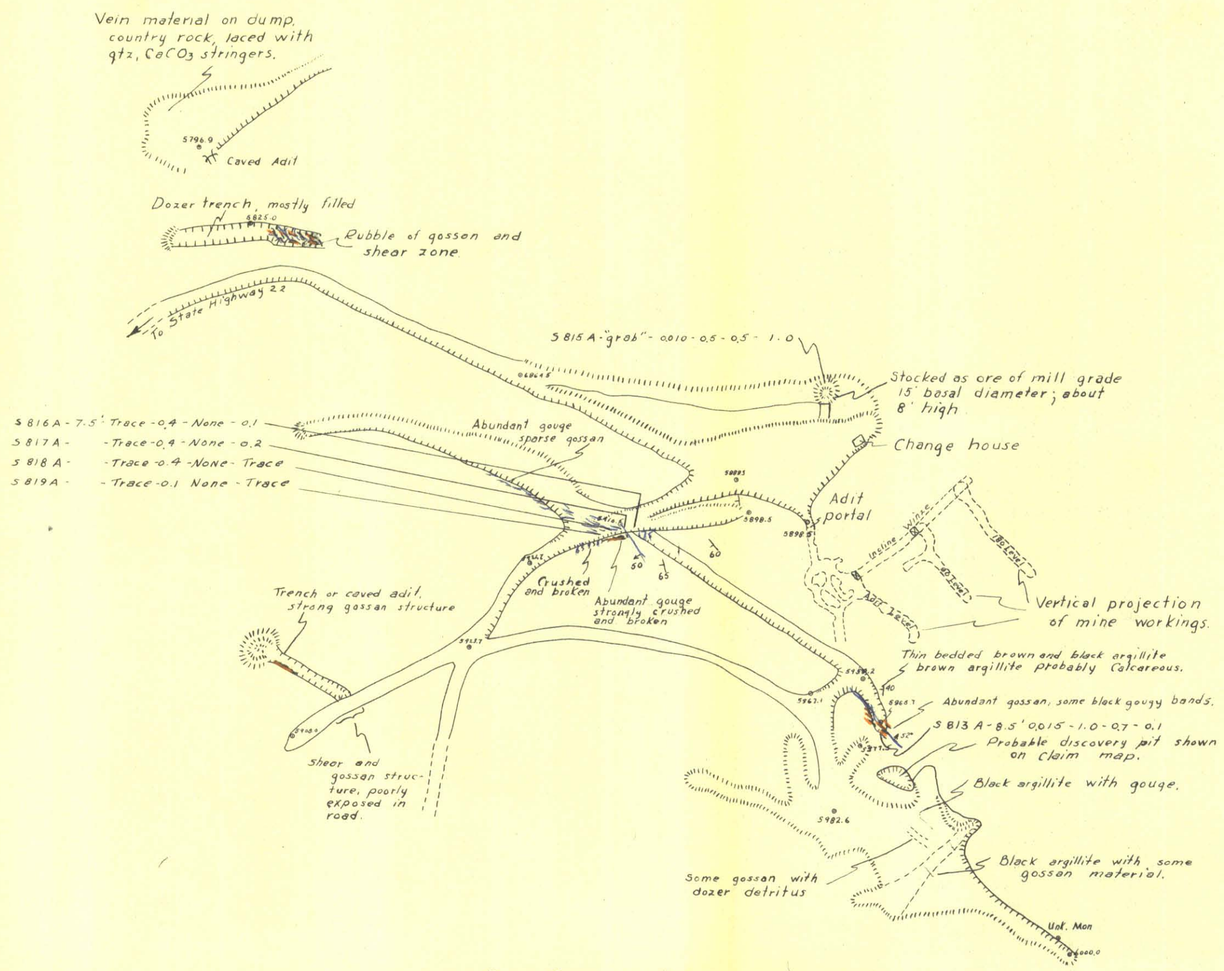
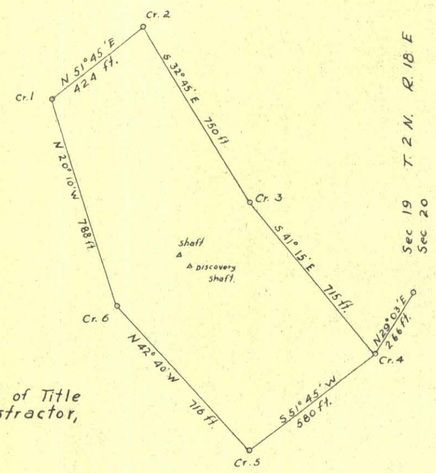
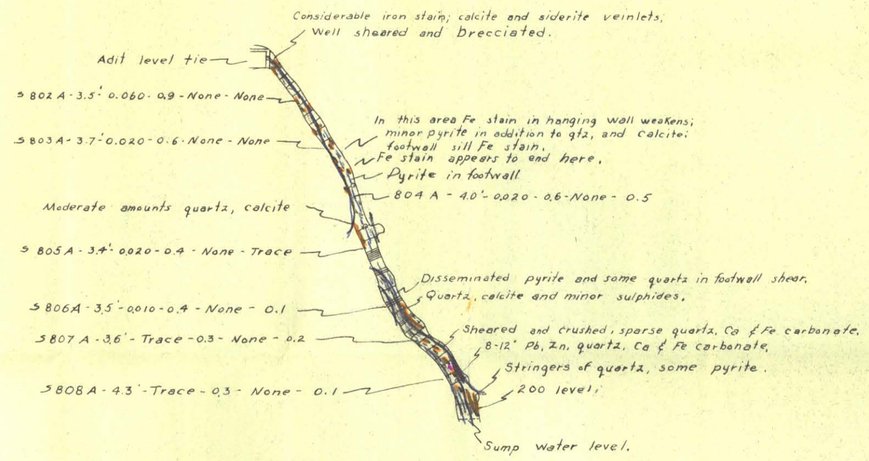


Surface Map
1" = 80' Datum assumed

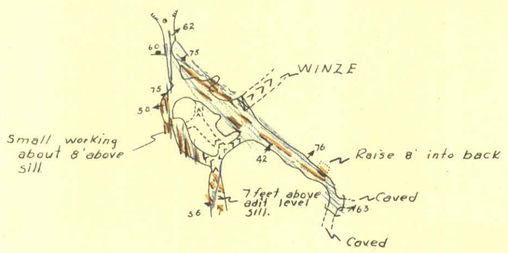


Copy from map accompanying Abstract of Title by R.H. McCoy Agency, bonded Abstractor, Blain County, Idaho

Claim Map
1" = 400'



Winze Section Looking Northwest
1" = 50 feet



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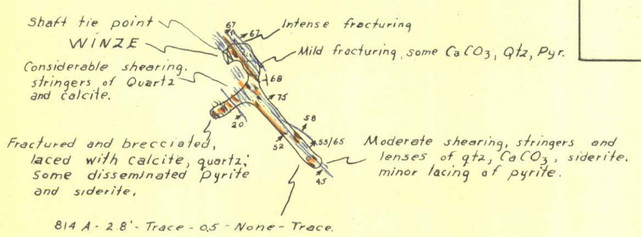
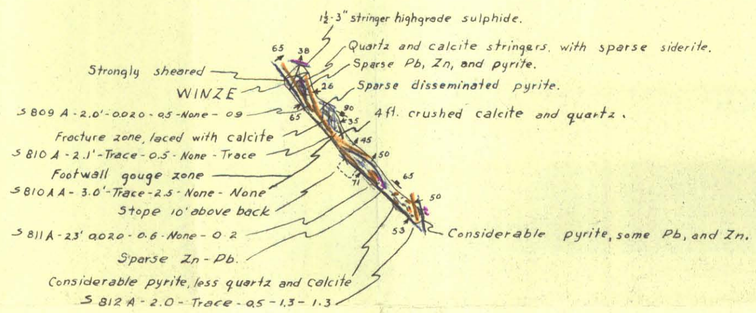


90 Level
1" = 50 feet



180 Level
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EXPLANATION

Shear zone, or fault showing dip

Vein, quartz

Base metal minerals

Strike and dip of bedding

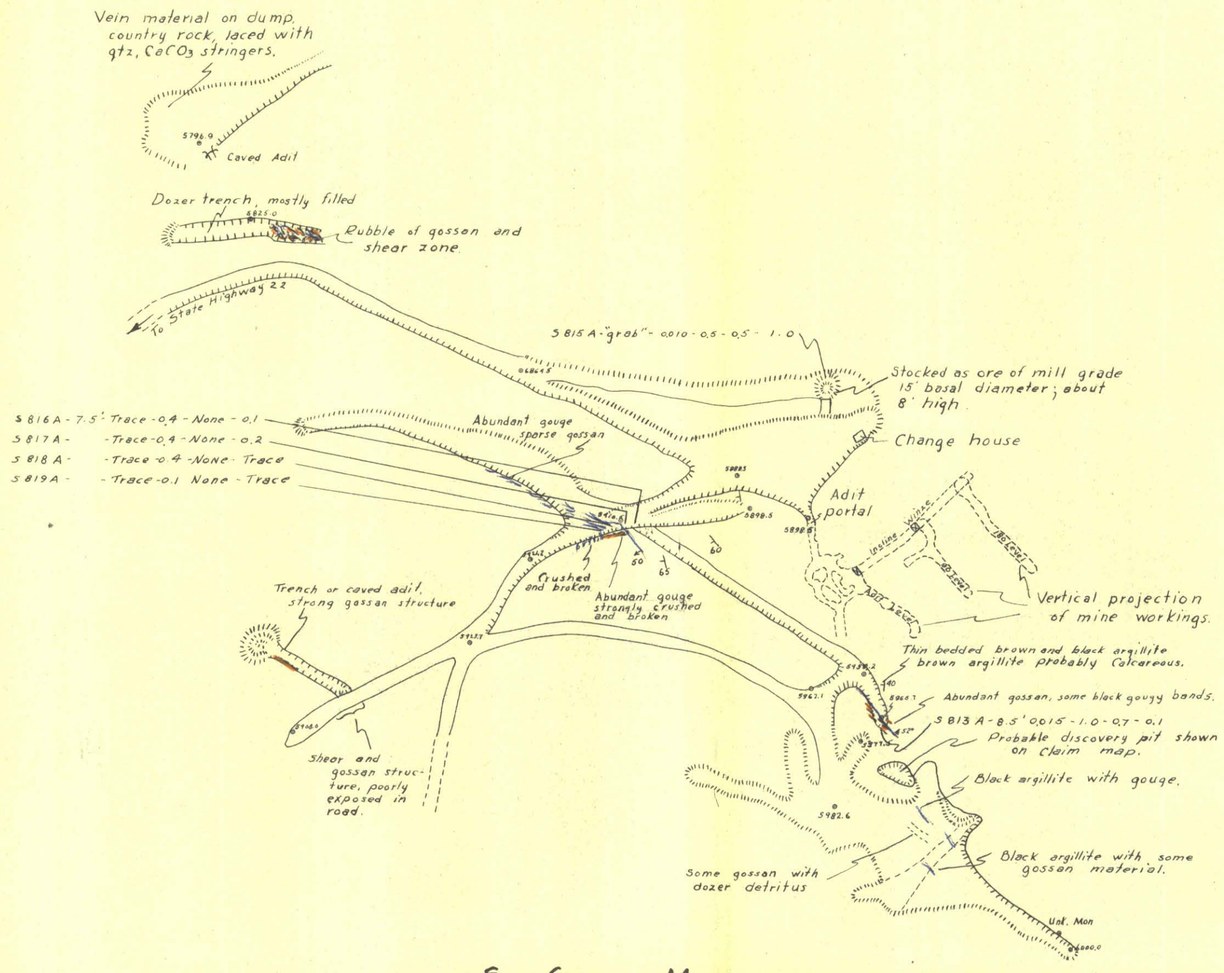
Strike and dip of joint

Sample No.	Width Feet	Au oz.	Ag oz.	Pb %	Zn %
S 812 A	2.0	Tr.	0.5	1.3	1.3

19½°

COMMODORE PROPERTY
Blaine County, Idaho

Geology by
J.J. Quinlan & D.C. Alvord



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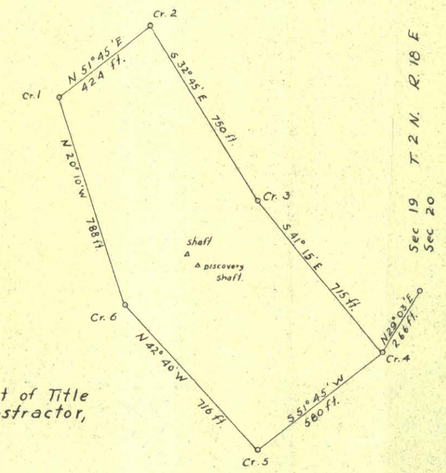

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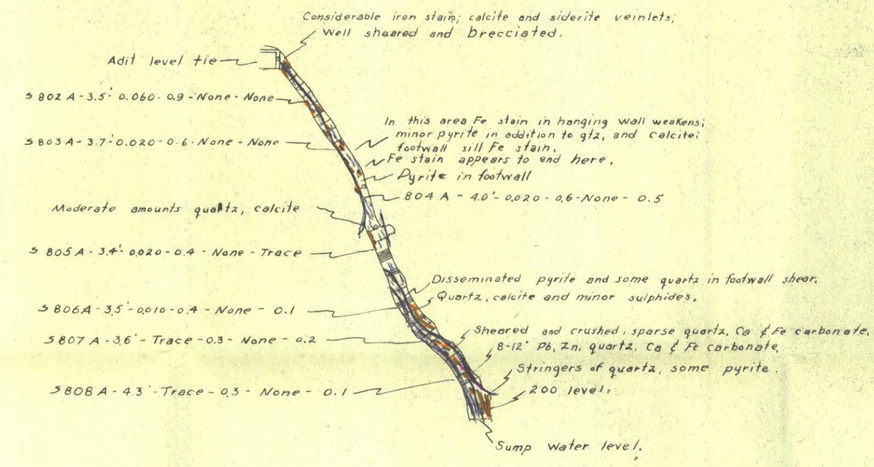

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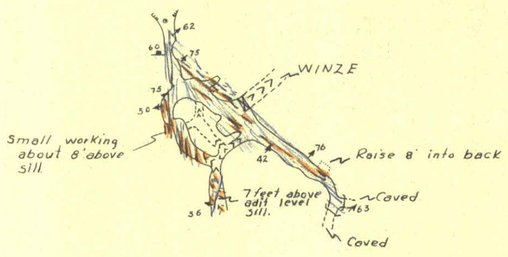

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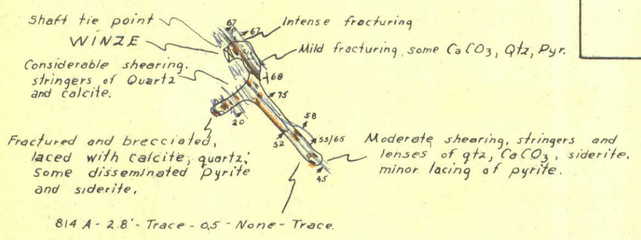

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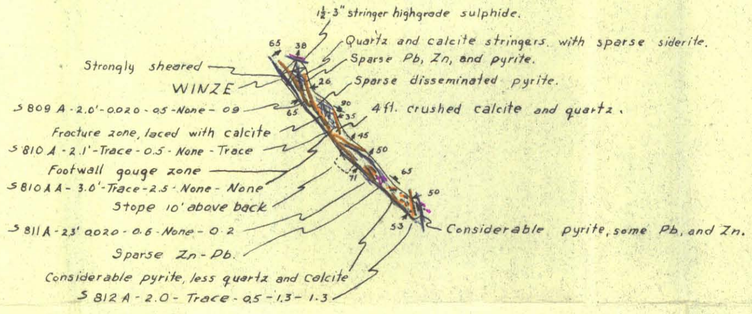

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