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Surname/ 700
A.G. Keating
Ellis
Martin
Trace
Volin

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

MAY - 4 1955

Mr. Leo Seltzer, et al.
c/o Mr. Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

Re: Docket No. DMEA-3446 (Uranium)
C.T.C. Mining Claims
Socorro County, New Mexico

Dear Mr. Seltzer:

Your application for aid for an exploration project and other information available to us in Washington, relating to the subject property, have been reviewed.

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

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

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

Sincerely yours,

Frank E. Johnson

ACTING Administrator

AGKeating:am
5-2-55
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J.E.Crawford, Rm.3641
T.M.Kiilsgaard, Rm.5224
J.O.Hosted, Rm.3210,GSA
Code 700
Mr. Keating
DMEA Field Team, Region III(2)

R.C.G.

A. G. Keating

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

April 29, 1955

Summary of Proposed Project

Subject: Denial of application for an exploration project.

Docket No.: DMEA-3446

Commodity: Uranium

Applicant: Leo Seltzer, et al. (joint venture partnership)
c/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

Property: Purchase Contract - CTC Mining Claims Nos. 1 through 51.
Situated in Sections 5, 6, 7, and 8 T. 2 S., R. 1 W.,
Socorro, New Mexico

Date of Application: August 10, 1954. - Field examination December 1954.
Report received in Washington April 11, 1955.

Amount of Application: $9,050.00

Work Proposed: 1,000 feet surface drilling to be completed within 3 months.

Estimated Cost:

Drilling by contract, total estimated cost to include supervision, engineering, analyses, all other such items connected with the work.

Field Team Final Report: Dated March 15, 1955.

"While the commodity uranium is of extreme importance at the present time, the grade of ore to be discovered by this project is so low (0.016% U_3O_8) and the quantity of ore to be discovered is so small that the project is not justified. It is recommended that the application be denied."

Commodity Committee Members' Comments:

Geological Survey - R. D. Trace

"I concur with the Field Team and recommend that subject application be denied. The grade of the uranium is far

too low and there is no indication or suggestion of increase in grade with depth."

Bureau of Mines - John E. Crawford

"I have discussed the Field Team report of examination with Joseph O. Hosted, Washington representative of AEC.

We concur with the Field Team recommendation that application for assistance be denied."

Rare and Miscellaneous Metals Division - A. G. Keating

The project property is underlain by complex folded and faulted igneous, metamorphic rocks of pre-Cambrian age. These formations are cut by two systems of dikes in width from 12 inches to 18 inches, strike northerly and dip westerly. The work done prior to application was in the nature of location work consisting of small open cuts and several bulldozer trenches. Subsequent to the application three drill holes were put down to cut the mineralized dikes below the surface.

The applicant's engineer reported taking 20 sample cuts across the dikes averaging a width of 1.0 to 1.9 feet containing an average value of 0.0164 percent U_3O_8. In the same locations the Government examining engineer took 5 samples in width cut from 8 inches to 14 inches, resulting in a chemical average of 0.016 percent U_3O_8. All the three drill holes mentioned above cut narrow segments of mineralized dikes but did not show any increase in radio-activity over the dike material at the surface. This indicated that uranium mineralization does not increase with depth. The Field Team reports that there are no measured or indicated ore reserves, and that in view of the extremely low average uranium content of the samples and the very narrow character of the dikes, no ore is inferred.

Information relative to the project was obtained from the Denver office of the AEC and from the AEC Albuquerque sub-office. It is the opinion of the Field Team, the Washington commodity members of the USGS and USBM, and the Washington representative of the AEC that the grade of uranium mineralization of the project is sub-marginal and the quantity so small that the proposed project

exploration cannot be justified, and therefore, denial is recommended, to which the Rare and Miscellaneous Metals Division concurs.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

4/20/55 gh

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1955

April 20, 1955

Re: DMEA-3446
Seltzer et al.
C.T.C. Group
Socorro Co., N. Mex.
$9,050.00 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of Field Team report

I concur with the Field Team and recommend that subject application be denied. The grade of the uranium is far too low and there is no indication or suggestion of increase in grade with depth.

Bob Trace
R. D. Trace

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1955

April 20, 1955

Re: DMEA-3446
Seltzer et al.
C.T.C. Group
Socorro Co., N. Mex.
$9,050.00 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of Field Team report

I concur with the Field Team and recommend that subject application be denied. The grade of the uranium is far too low and there is no indication or suggestion of increase in grade with depth.

R. D. Trace

RDTrace:hlm
G-4/20/55

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

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1955

April 20, 1955

Re: DMEA-3446
Saltzer et al.
C.T.C. Group
Socorro Co., N. Mex.
$9,050.00 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of Field Team report

I concur with the Field Team and recommend that subject application be denied. The grade of the uranium is far too low and there is no indication or suggestion of increase in grade with depth.

R. D. Trace

RDTrace:hlm
G-4/20/55

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

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1955

April 20, 1955

Re: DMEA-3646
Seltzer et al.
C.T.C. Group
Socorro Co., N. Mex.
$9,050.00 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of Field Team report

I concur with the Field Team and recommend that subject application be denied. The grade of the uranium is far too low and there is no indication or suggestion of increase in grade with depth.

R. D. Trace

RDTrace:hlm
G-4/20/55

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

4/21/55 gla

Defense Minerals Administration
RECEIVED
APR 21 1955

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

April 20, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: Field Team report of examination, DMEA Docket 3446, Seltzer, Seltzer, Holland and Mages, C.T.C. claims, Socorro County, New Mexico.

I have reviewed the Field Team report of examination, DMEA Docket 3446, C.T.C. claims, Socorro County, New Mexico; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the Field Team's recommendation that the application for assistance be denied.

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

April 20, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: Field Team report of examination, DMEA Docket 3446, Seltzer, Seltzer, Holland and Magee, C.T.C. claims, Socorro County, New Mexico.

I have reviewed the Field Team report of examination, DMEA Docket 3446, C.T.C. claims, Socorro County, New Mexico; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the Field Team's recommendation that the application for assistance be denied.

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

John E. Crawford

JECrawford:ds
Copy to: Division of Minerals
Branch of Rare and Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)
F I L E S

4/18/55 gla

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

224 New Customhouse
Denver 2, Colorado

April 5, 1955

Memorandum

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

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3446 (Uranium) Seltzer, Seltzer, Holland and Mages, C.T.C. Group of Claims, Socorro County, New Mexico.

Enclosed are the original and three copies of the report pertaining to the above application.

In view of the extremely low uranium content, narrow width of dikes, and poor showing of the three holes drilled by the applicant, it is not considered sufficiently promising to justify Government participation.

We recommend that the application be denied.

W. M. Traver

W. M. Traver

for E. N. Harshman

Encs.

Received by
DMEA Operations Committee
4-15-55
(date)

TRANSMITTED

APR 1955

March 22, 1955

Memorandum

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

From : Superintendent, Southwest Exp. Station, Region III

Subject : Report on Docket DMEA-3446, Seltzer et al, C. T. C. Uranium Group, Socorro County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by John N. Faick, of the Geological Survey and William R. Hardwick of the Bureau of Mines, and the section on Engineering by Hardwick for the above report. I believe the section on Geology already has been submitted.

In August 1954, Lee Seltzer, Oscar Seltzer, Arthur Holland and Irving Mages applied to the Defense Mineral Exploration Administration for Government assistance to explore their uranium-bearing claims in Socorro County, N. Mex. Since the application was made, the applicants have had 3 diamond drill holes drilled to explore the deposit at depth. Samples from surface pits and trenches, and from the drill hole cores gave very low uranium assays. The average grade of all samples was 0.016 percent U_3O_8. Because there seemed little chance of discovering any significant quantity of uranium ore, the DMEA examiners recommended denial of Government aid. I concur with their recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. N. Faick
DMEA-3446
DF

WRStorms:frj

DMEA
Date Rec'd.
MAR 25 1955
BUREAU OF MINES
Denver, Colorado

Reviewed by
DMEA OPERATIONS COMMITTEE
4-15-55

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-3446, Seltzer, Seltzer, Holland and Mages

C. T. C. Uranium Group

Socorro County, New Mexico

John N. Faick, Geologist
U. S. Geological Survey

William R. Hardwick, Mining Engineer
U. S. Bureau of Mines

March 1955

Reviewed by
DMEA OPERATING COMMITTEE
4-15-55
(date)

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By John N. Faick[1] and William R. Hardwick[2]

On August 13, 1954, Leo Seltzer, Oscar Seltzer, Arthur M. Holland, and Irving Mages applied for assistance from the Defense Minerals Exploration Administration to explore the C. T. C. group of mining claims for uranium. This claims are located in T. 2 S., R. 11 W., Socorro County, N. Mex., and are near Polvadera Mountain about 12 miles northwest of the town of Socorro.

The application was docketed as DMEA-3446 (Uranium) and was reviewed by John E. Crawford, Bureau of Mines member, and Arthur P. Butler, Jr., Geological Survey member of the Uranium Commodity Committee. This committee referred the application to the Field Team for additional information.

The C. T. C. claims were examined on December 13 and 14, 1954 by John N. Faick, geologist, Geological Survey, and William R. Hardwick, mining engineer, Bureau of Mines. The Albuquerque Sub-Office and the Denver office of the Atomic Energy Commission were contacted and these offices furnished some information. There has been no production from the C. T. C. claims.

The C. T. C. group of claims is underlain principally by complexly folded and faulted igneous and metamorphic rocks of pre-Cambrian age. These older rocks were cut by two systems of dikes.

1/ Geologist, Geological Survey
2/ Mining Engineer, Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
4-15-55
(date)

All uranium mineralization is confined to very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average 12 inches to 18 inches in width.

There is no ore, either measured, indicated or inferred. The numerical average of 20 samples by the applicants was 0.0164 percent U_3O_8. The numerical average of 5 samples by the examining engineer was 0.0164 percent U_3O_8. For "off Plateau" contracts, the minimum average ore grade usually is set at 0.20 percent U_3O_8, with no pay for ore running less than 0.15 percent U_3O_8.

The applicants completed location work by digging location pits or scraping trenches with a bulldozer, and prepared an excellent geological map of a part of the claims before submitting an application for Government assistance. After the application had been submitted the applicants drilled three diamond drill holes to cut the mineralized dike below the surface. The results of these holes does not indicate an increase of U_3O_8 with depth.

The applicants proposed to explore the mineralized dike to a depth of 50 feet by drilling AX size diamond drill holes at several locations. A total of 1,000 feet of drilling was proposed, which the applicants estimate would cost $9,050.00. This is a modification of the initial proposal which was for 20,000 feet of drill hole at an estimated cost of $112,000.00.

The applicants proposed to finance 25 percent of the costs and requested that the Government finance the remaining 75 percent of the costs of this project through DMEA exploration assistance. The applicants are not experienced mining men, but they have employed Clay T. Smith, a competent geologist, to supervise this proposed exploration.

While the commodity, uranium, is of extreme importance at the present time, the grade of ore to be discovered by this project is so low (0.016% U_3O_8) and the quantity of ore to be discovered is so small that the project is not justified.

It is recommended that the applicant's request (DMEA Docket 3446) for Government assistance to explore the C.T.C. mining claims for uranium be denied.

DMEA-3446, SELTZER, SELTZER, HOLLAND AND MAGES
C. T. C. URANIUM GROUP
SOCORRO COUNTY, NEW MEXICO

Engineering Report

By William R. Hardwick
Mining Engineer
U. S. Bureau of Mines

March 1955

Reviewed by
DMEA OPERATING COMMITTEE
4-15-55
(date)

DMEA-3446, SELTZER, SELTZER, HOLLAND AND MAGES
C. T. C. URANIUM GROUP
SOCORRO COUNTY, NEW MEXICO

CONTENTS

Engineering report	Page
Introduction	1
Acknowledgments	3
Location, topography and climate	3
History and production	5
Ownership and extent	5
Description of the deposit	5
Ore reserves	8
Present status	11
Proposed exploration	13
Estimated cost	14
Proposed financing	14
Conclusions	15
Recommendations	15

ILLUSTRATIONS

Figure		To follow page
1	Location map	3
2	Plan of proposed work	13

Reviewed by
DMEA OPERATING COMMITTEE
4-15-55
(date)

INTRODUCTION

On August 13, 1954, Leo Seltzer, Oscar Seltzer, Arthur M. Holland, and Irving Mages applied for assistance from the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, to explore the C. T. C. mining claims near Socorro, N. Mex., for uranium. This application was docketed as DMEA-3446 (Uranium) and referred to the Field Office for an examination and report.

The applicants proposed to explore narrow dikes for uranium ore by drilling holes to intercept these dikes below the outcrops. The initial application proposed to drill a total of 20,000 feet of drill hole at a cost which the applicants estimated at $112,000. In a letter dated January 15, 1955, addressed to John N. Faick of the Geological Survey and signed by Clay T. Smith, consulting geologist for the applicant, the project was modified to propose 1,000 feet of diamond drill hole at a total cost of $9,050.00.

The C. T. C. mining claims were examined on December 13 and 14, 1954 by John N. Faick, geologist, Geological Survey and William R. Hardwick, mining engineer, Bureau of Mines. Samples were taken at various points along the most prominent dike, where the applicants proposed to locate sample drill holes, and the favorable area was probed with a Geiger counter.

The Polvadera Mountain area has been examined by representatives of the Atomic Energy Commission's Division of Raw Materials. The Albuquerque sub-office of that organization was consulted to obtain advice and such information as was available relative to the proposed program. A brief description of the deposits and a list of sample analyses pertinent to the area was supplied by Raymond B. Stroud, geologist. A letter dated December 13, 1954, written by Harold D. Wolfe, chief, Albuquerque sub-office of the Atomic Energy Commission to John N. Faick, geologist, Geological Survey, stated in part:

"Maps of many of the uranium bearing dikes on the property are currently being drafted in Denver and will be received here within a few days. These will be forwarded to you as soon as received. The maps show locations of the dikes and the assay results of samples taken. An amenability test on similar material adjacent to the C. T. C. claims is currently being made through the Grand Junction Office. These may prove of value to you so you will be advised of the results when received."

The data mentioned in the above letter has not been received, but it is believed that it would not change the conclusions reached as a result of the field examination.

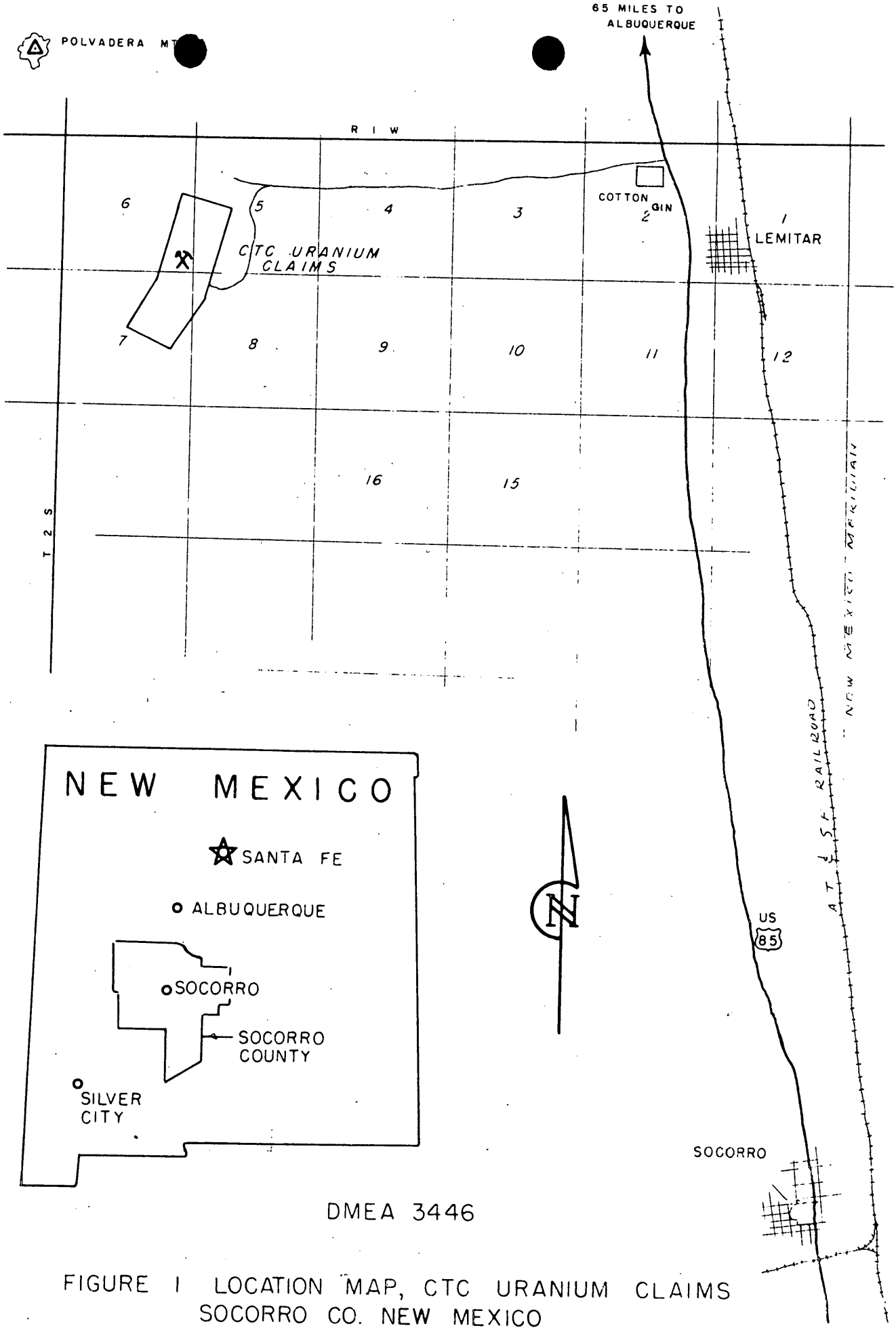
The Denver office of A.E.C. was consulted for information relative to the policy of that organization with respect to the purchase of uranium ore from new districts. This policy was outlined in a letter written to John N. Faick on November 4, 1954 signed by J. F. Foran, Acting Chief, Denver Exploration Branch, Atomic Energy Commission.

ACKNOWLEDGMENTS

Acknowledgments are due Clay T. Smith, consulting geologist for the applicants, and to Arthur M. Holland and Irving Mages, applicants, for their courtesy to the examining team and for furnishing information pertinent to the application for Government assistance. Acknowledgment also is made to the Denver Exploration Branch, Atomic Energy Commission, and to the Albuquerque Sub-Office of the same organization for helpful advice and information relative to the proposed program.

LOCATION, TOPOGRAPHY AND CLIMATE

The C. T. C. mining claims are situated in sections 5, 6, 7, and 8, T. 2 S., R. 1 W. (figure 1). They are on the eastern slope of the Lemitar Hills about 10 air miles northwest of Socorro, N. Mex., the nearest town and supply center, and may be reached from that city by driving north on U. S. Highway 85 for 7.6 miles, thence turning west and passing through a gate 0.1 mile north of a cotton gin, and following an unimproved ranch road 4 miles to the claims.



DMEA 3446

FIGURE 1 LOCATION MAP, CTC URANIUM CLAIMS
SOCORRO CO. NEW MEXICO

The nearest railroad station is Lemitar on the Atchison, Topeka and Santa Fe Railroad, 4.5 miles east of the C. T. C. mining claims. The nearest Atomic Energy Commission purchasing depot for uranium ore is at Grants, N. Mex., a distance of 140 miles from the property. Labor is available in Socorro, and materials and supplies are available in Albuquerque 65 miles north of the C. T. C. mining claims.

The area has low to moderate relief with steep-sided canyons exposing older igneous rocks in the western part, and a valley fill of Recent to early Tertiary gravel covering the eastern part of the claims. The altitude of the lower eastern part of the claims is approximately 5,000 feet above sea level, while that of the higher western part is nearly 6,000 feet.

The vegetation is typical of the southwestern desert. Representative plants are creosote bush, mesquite, several species of cacti, and a few scrub cedar. There is no timber suitable for mine use on the claims.

The mean annual temperature[1/] is 60° F. The summer climate is warm but not uncomfortably so, and the winter climate is mild with only an occasional snow storm. The mean annual precipitation is approximately 10 inches, most of which occurs as violent thunder showers of short duration in the months of July and August. Working conditions usually are favorable throughout the year.

1/ U. S. Dept. of Agriculture, Weather Bureau, Climatic Summary of United States, Sec. 29, Southern New Mexico.

HISTORY AND PRODUCTION

All of the C. T. C. mining claims were located in a short period prior to the submission of the applicationfor Government assistance. There has been no ore produced from the claims.

OWNERSHIP AND EXTENT

The 51 C. T. C. mining claims all are recent locations. Arthur M. Holland, one of the applicants, stated that all of the claims either were purchased from the original locators or were located by one of the applicants. The purchase contract was not available in Socorro when the claims were examined. The applications state with respect to the C. T. C. claims, "all recorded with the County Clerk, County of Bernallillo, State of New Mexico". When the claims were examined it was pointed out that the claims were in Socorro County and not Bernalillo County. Clay T. Smith said that the statement in the application was in error and that all of the claims were recorded in Socorro County. The records were not examined.

DESCRIPTION OF THE DEPOSIT

The Lemitar Mountains lie approximately 12 miles northwest of the city of Socorro. The mountains cover an area nearly 7 miles long and 3 miles wide. The C. T. C. uranium claims are situated about 2 miles southeast of Polvadera Mountain, the highest peak in the range.

Near the C. T. C. claims, the most prominent rock is a pre-Cambrian medium-grained, dark-colored diorite. Residual bodies of Magdalena limestone indicate that the area once was covered with that rock. The limestone has been completely eroded from the surface of the claims.

In the immediate vicinity of the claims the pre-Cambrian diorite is cut by several different types of dikes and veins. The geology has been described by Clay T. Smith and is further described by John N. Faick, geologist, Geological Survey, in the separate geological report on this project. Of the several types of dikes and veins mentioned only one type appears to contain a recognizable amount of radioactivity. This dike is described by Ramon B. Stroud as follows:

"The basic dikes resemble andesite and are very limey in nature. They may vary from less than one inch to more than two feet in width and may reach as much as 200 feet in length in continuous exposure. They outcrop in an area 6 miles long and nearly one mile wide. These dikes are dark, dense, fine-grained and occasionally contain pink feldspar (?) crystals up to two millimeters in diameter. Locally these dikes appear to be brecciated and then may contain both quartz fragments and quartz-mica schist fragments imbedded in a dark, fine-grained ground mass. In sections 5 (?) T. 2 S., R. 1 W., one basic dike contains microscopic amounts of galena, chalcopyrite, pyrite and possibly uranophane or carnotite. With a background radioactivity of 0.03 milliroentgens, surface readings

up to 0.5 milliroentgens were obtained from these dikes in section 5 (?), T. 2 S., R. 1 W., and section 7 (?), T. 2 S., R. 1 W. Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens, locally, however, the dikes were not abnormally radioactive."

These dikes further are described by Clay T. Smith as follows:

"Mineralization on the C. T. C. mining claims is almost entirely confined to the very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 2, 3, 4, 8, 11 and 12 with the most favorable spot for the development of minable widths on the southern end of claim 12.

"... no uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblend, since the radioactivity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals identifiable."

Discontinuous segments of the most persistent lamprophyre dike can be traced north from the southeast corner of C. T. C. claim No. 12 for the full length of that claim and part of claim

No. 4. This makes a total length of approximately 2,000 feet. However, the longest unbroken segment is probably not over 300 feet and the width probably does not average more than 12 inches. This is the dike that the applicant proposes to explore.

ORE RESERVES

There are no measured or indicated ore reserves, and in view of the extremely low average uranium content of the samples and the very narrow character of the dikes, no ore is inferred.

Samples have been taken from this area by the Atomic Energy Commission, the applicant, and the examining team. In reply to a request for information on the sampling results, Clay T. Smith states as follows:

"In regard to the sample information which you seek, I can furnish the information on the samples which I cut, but I can tell you very little regarding the AEC sampling which was mostly grab samples of a few "hot spots". I am enclosing a listing of the samples 1 through 21 giving both the electrometric and chemical values for U_3O_8 as determined by Chapman and Wood of Albuquerque, New Mexico. The samples were all cut on thin lamprophyre dikes - - -."

"The A.E.C. samples which I show were provided me on a sheet of tracing paper which had a brunton survey of the dikes and the samples plotted as I have indicated them. I have no information as to the thickness, width or material cut. The sample no. F16501

was marked cU which I took to be a chemical analyses and with the value given. The sample no. F15835 was marked eU as I have indicated which I presume means an electrometric value. In addition I have another tracing of a similar survey of some of the dikes on the south end of the claims which do not appear on my map and on which are listed the following samples collected by the AEC. As above I have no information regarding width, thickness, nor material samples, except as it is indicated as dikes which were sampled:

"F16249 - cU 0.047
F16250 - eU 0.025
F15847 - GU 0.032
F15848 - GU 0.046
F15849 - GU 0.018
F16246 - cU 0.043
F16247 - cU 0.248
F16248 - cU 0.045"

The analysis of the samples that were cut by Clay T. Smith are shown in the following table:

Analysis of Samples from C. T. C.
Uranium Claims, Socorro County, N. Mex.
Analysis by Chapman & Woods
Albuquerque, N. Mex.

Sample No.	Thickness	Percent U_3O_8, Electrometric	Percent U_3O_8, Chemical
1	1.9'	0.005	0.011
2	1.8'	0.005	0.013
4	1.8'	0.005	0.012
5	1.9'	0.005	0.008
6	1.7'	0.010	0.010
7	1.3'	0.005	0.020
8	1.2'	0.005	0.022
9	0.9'	0.030	0.039
10	1.7'	0.005	0.007
11	1.0'	0.005	0.013
12	1.2'	0.005	0.009
13	1.2'	0.010	0.014
14	1.0'	0.010	0.015
15	1.2'	0.010	0.017
16	1.0'	0.015	0.021
17	1.2'	0.020	0.020
18	1.1'	0.040	0.031
19	1.1'	0.015	0.018
20	1.0'	0.020	0.013
21	1.3'	0.020	0.016
Average (numerical)			0.0164

Five samples were taken by the DMEA examining engineer on December 14, 1954. These samples were cut across the dike at approximately the same location as the operators' samples were cut. The results of these samples were as follows with the number of the operators' corresponding sample:

DMEA No.	Width Cut	Applicants No.	Percent U_3O_8 Radiometric	Chemical
13043	11 inches	20	0.01	0.005
13044	14 inches	17	0.01	0.011
13045	12 inches	11	0.02	0.007
13046	8 inches	9	0.05	0.039
13047	10 inches	8	0.02	0.020
Average (numerical)				0.0164

J. F. Foran defines uranium ore as "material containing not less than 0.10 percent U_3O_8 or ore that is minable at a profit. - - - Ores such as those at Polvadera Mountain present special problems with respect to their sale. In general, uraniferous fluorite is not amenable to treatment in any existing plant and is not being purchased unless the uranium content is high."

Three short diamond drill holes have been drilled by the applicant since the application was submitted to the DMEA Field Team. These holes all cut narrow segments of mineralized lamprophyre dikes. The core from these intercepts was tested with a Geiger counter but did not show any increase in radioactivity over dike material at the surface. Therefore, it is believed that the uranium mineralization will not increase with depth.

PRESENT STATUS OF EXPLORATION AND DEVELOPMENT

The C. T. C. Uranium claims are all relatively new locations. No work has been done on them except small open cuts that were dug for location work, several bulldozer trenches, and three diamond drill holes.

The three diamond drill holes were drilled by the applicants in October and November 1954 after the application for DMEA assistance was submitted. The locations of these holes is shown on figure 2. A log of the holes is included with the Geological Report by John N. Faick. The holes were as follows: Hole No. 2, bearing N. 57° E. and dipping 30 degrees, was 282 feet deep. It is described by Clay T. Smith as follows: "- - - Thin stringers of dike material were cut in several places with one very weak 1" zone of mineralization at 232.5'. Apparently the dike does not carry downward strongly at this point or it may be offset eastward in en echelon manner and we did not drill deep enough to cut it. - - -"

Hole 16A, bearing S. 56° W. at minus 40 degrees "- - - cut the dike about 70 feet below the outcrop, It was drilled to a depth of 90 feet and cut the vein at 86' - 88'. Other zones showed stringers of mineralization at about 44 feet and 61.5 feet - - -."

"- - - Hole 16B was drilled from the southwest toward the northeast along the same line as hole 16A and cut the vein about 20 feet higher than hole 16A. The vein showed as stringers of granite and lamprophyre in quartz diorite and again the core did not show appreciable radioactivity, being barely ten times background. - - -"

No other work had been done on the claims when they were examined in December 1954.

PROPOSED EXPLORATION

At first proposing an exploration program involving 20,000 feet of diamond drill hole at an estimated cost of $112,000.00, the applicant has now revised the proposed project to 1,000 feet of diamond drilling at a total estimated cost of $9,050.00. This downward revision was in part the result of the suggestion of the examining engineer and geologist, and in part the result of the poor results obtained from the three holes that were drilled after the original application was submitted.

The applicants have proposed 14 drill holes, AX size, so located that the mineralized lamprophyre dike will be cut in each case at approximately 50 feet below the surface outcrop. The approximate locations of these holes are shown on figure 2 in red.

In addition to the 1,000 feet of drill hole, the applicants have included the cost of 30 surface samples. The location of these samples was not included in the revised application, but it is presumed that they would continue on northward beyond the applicants' sample No. 21 on figure 2. This part of the outcrop was probed with a Geiger counter and did not show more radioactivity than that part which was sampled.

This proposed project would seem reasonable if the mineralization was such as to justify additional work.

ESTIMATED COST OF THE PROJECT

The applicant has proposed costs of his revised program as follows:

	Cost per foot
Direct drilling (AX core, 80% recovery minimum)	$5.00
Cementing, casing, etc.	0.50
Water haulage	.50
Moving and set-up cost	.85
Drillsite preparation	.15
Sampling costs	1.05
Geological expense and supervision	1.00
Total estimated costs	$9.05

Total estimated expense for $1,000 foot program - $9,050.00.

These costs seem high. It is believed that the drilling, including sampling and assay costs, should not exceed $7.50 per foot.

PROPOSED FINANCING

The applicants propose to pay 25 percent of the costs and they request that the Government provide the remaining 75 percent through the provision of Defense Minerals Exploration Administration assistance.

Arthur M. Holland stated that the applicants would be able to provide money for their agreed part of the costs.

CONCLUSIONS

1. The C. T. C. uranium claims are traversed by thin lamprophyre or basic dikes that contain an undetermined uranium mineral in minute quantities.

2. The uranium content of dike material is too low to justify exploration.

3. Geological conditions do not indicate an increase in mineralization with depth. This concept is confirmed by the results of three drill holes.

4. Mineralized dikes are very narrow and indications are that a significant quantity of ore could not be developed.

RECOMMENDATIONS

In view of the extremely low uranium content, narrow width of the dikes, and poor showing of the three holes already drilled, it is believed that further exploration will not discover a significant amount of ore. It is recommended that the applicants' request for assistance be denied.

IN REPLY REFER TO:
DMEA
Date Rec'd.
MAR 17 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

March 16, 1955

TRANSMITTED
APR 5 - 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3446 (uranium), Seltzer, Seltzer, Holland, and Magee, C.T.C. group of claims, Socorro County, New Mexico

Enclosed are the original and 9 copies of a geologic report by John H. Faick, U. S. Geological Survey, covering the above subject application for exploration assistance.

On the C.T.C. claims low grade uranium mineralization is associated with a number of lamprophyre dikes in pre-Cambrian basement rocks. The dikes are generally less than 2 feet wide; strike lengths of 200 to 500 feet have been observed on the surface. The dikes contain galena, chalcopyrite, pyrite, fluorite, magnetite, and an unknown uranium mineral (or minerals), presumably finely divided pitchblende.

The average content of 38 samples taken by the applicant, the AEC, and the DMEA examining team is 0.033 percent U_3O_8. Only two of the samples contained over 0.10 percent U_3O_8.

Because of the narrow low-grade character of the mineralized portions of the lamprophyre dikes on the C.T.C. claims, Faick concludes that Government participation in exploration is not warranted and he recommends that the application be denied.

I concur in this recommendation.

One copy of the brochure is enclosed also.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (11)

ENHarshman:arh

Returned by
DMEA Office
4-15-55
(date)

TRANSMITTED

APR 5 - 1955

GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

March 10, 1955

MEMORANDUM

TO: Mr. E. N. Harshman

FROM: J. N. Faick

SUBJECT: DMEA Docket 3446 (Uranium) Seltzer, Seltzer, Holland and Mages C.T.C. group of claims, Socorro County, New Mexico.

Enclosed are the original and 10 copies of the Survey's report of examination of the above subject property.

This report recommends denial of Government participation in the applicant's proposal to explore several uraniferous dikes because of the extremely low uranium content of the dikes. The dikes average 18 inches or less in width and the average uranium content of 38 samples is 0.033 percent.

All of the Atomic Energy Commission's data that is available at present is incorporated in the above report.

The brochure is enclosed.

John N. Faick

John N. Faick

JNF:ms
cc: 10 Harshman
1 Storms

4-15-55

MINERAL DEPOSITS
DMEA
RECEIVED
MAR 15 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

EXAMINATION REPORT

DMEA-3446, C.T.C. Claims

Socorro County, New Mexico

(Uranium)

by
John N. Faick, Geologist
U.S. Geological Survey

March 7, 1955

Reviewed by
DMEA CLAIMANTS (INTERIM)
4-15-55
(date)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM REGION III

EXAMINATION REPORT
DMEA 3446, C.T.C. CLAIMS
SOCORRO COUNTY, NEW MEXICO

CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
MINERALIZATION	3
URANIUM CONTENT OF DIKES	5
EXPLORATION	9
ORE RESERVES	13
CONCLUSIONS AND RECOMMENDATIONS	13

ILLUSTRATIONS

Figure 1	Location Map	See Engineering Report
Figure 2	Claim Map	" " "
Figure 3	Geology and Claim Map	Following page 2

TABLES

		Page
TABLE I	SAMPLES AND ANALYSES BY ATOMIC ENERGY COMMISSION	6
TABLE II	APPLICANT'S ANALYSIS OF SAMPLES FROM C.T.C. CLAIMS	7
TABLE III	DMEA SAMPLES, C.T.C. CLAIMS	8
TABLE IV	DIAMOND DRILL HOLE LOGS	10-12

INTRODUCTION

On October 20th the Tucson, Arizona office of the Defense Minerals Exploration received an application for Government assistance in exploration of the C.T.C. group of 51 mining claims located in T.2 S., R.1 W. Polvadera Mountains, Socorro County, New Mexico. This application was accompanied by several enclosures, including:

1. A letter dated June 22, from Raymond B. Stroud, A.E.C., to Mr. Gordon Tolliver, Socorro, New Mexico, which letter includes a brief description of the geology and analyses of 13 samples.

2. A geologic report and map of the C.T.C. group of mining claims by Clay T. Smith, Geologist, Socorro, New Mexico.

A letter from John E. Crawford, U.S.B.M., to E. Wm. Ellis, DMEA, indicates that Joseph E. Hosted, representative of the Atomic Energy Commission, has discussed this application with Charles Towle, also of the AEC, and indicates that the area may be of interest to the AEC. The data now available at Tucson indicates that the AEC may have done considerable work on the property; therefore, letters were written to the AEC requesting additional information on the property. Additional data of a general nature was received in reply to these requests. However, locations of AEC samples, geologic maps or results of amenability tests of a sample taken by AEC from the Santillanez claims,which lie adjacent to the south end of the C.T.C. group of claims, have not been received.

Our examination, which was made December 14, 1954 verified the data obtained by the applicant's consulting geologist, and it is doubtful if the additional data, if and when it is obtained from the AEC, will modify our conclusions regarding the property. We are recommending that Government participation in the proposed exploration be denied because of the extremely low uranium content of the so-called ore.

General Geology

The C.T.C. group of claims on Polvadera Mountain in the Lemitar Range is underlain principally by complexly folded and faulted igneous and metamorphic rocks of pre-Cambrian age. Resting unconformably upon the pre-Cambrian are a couple of small patches of carboniferous limestone, each about 2 acres in extent, and a short distance west of the claims is a narrow belt of limestone assigned to the Mississippian. The east boundary of the claim is covered by Tertiary and Recent gravels of the Rio Grande River bolsa deposits, possibly corresponding to the Santa Fe formation. Tertiary volcanics, consisting largely of andesite and rhyolite, outcrop on the west flank of the Lemitar Mountains.

The uranium deposits apparently are confined to dikes (see fig. 3) in the pre-Cambrian basement rocks, which have been described by Smith[1] as follows:

> "Five units are distinguished in the pre-Cambrian rocks of which four are of igneous origin and one represents principally metamorphosed sediments. The oldest rocks are northeast-southwest trending belts of chlorite-hornblende

---

[1] Smith, C.T. Private Report prepared for applicant, p.4, September 11, 1954.

schists with some interbedded quartzite and greenstone. The schists are intimately intruded by quartz diorite and the resulting rock, often with a strong gneissic banding, grades indistinguishably from schist through quartz diorite gneiss to massive quartz diorite. The quartz diorite changes facies toward granite by the addition of quartz and reduction in the amount of dark minerals (principally hornblende and biotite) or toward hornblende gabbro by the absence of quartz.

Massive red to gray granite outcropping mostly in the northwest corner of the property intrudes the quartz diorite. Locally, narrow granite dikes cut the quartz diorite and along one of these in the southwest corner of claim 12 mineralization is present. It is often difficult to determine whether small granite areas represent granitic facies of the quartz diorite or later intrusions of the massive red granite whose contacts have been obscured by subsequent metamorphism. The principal granite mass in the northwest part of the claims is nearly barren of mineralized zones except along its margins and appears to be an unfavorable host rock.

Two systems of dikes cut all the earlier rocks, an older set of diabase dikes, and a younger set of lamprophyre dikes. The diabase dikes strike within a few degrees of N 60° E and dip steeply north or are vertical. The lamprophyre dikes strike predominantly N 10°-15° W and dip about 75°-80° west, although marked irregularities and local flat dips are found. Most of the dikes are from a few feet to several tens of feet in width; diabase probably averages 20 feet wide and lamprophyre, except for the large mass exposed on claim 3, probably averages less than 5 feet. The pattern of the diabase dikes indicates that there are no major north-south fault zones within the area mapped. In a few places diabase apparently offsets lamprophyre where the two dike types intersect, but in most spots the lamprophyre dikes cut across the diabase indicating that they are the youngest pre-Cambrian rocks in the area. All of the uranium mineralization is associated with the lamprophyre dikes."

MINERALIZATION

Mineralization on the C.T.C. mining claims is almost entirely confined to very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized

dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike, and in places have an almost continuous exposure ranging from 200 to 500 feet along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 11 and 12 (see fig. 3) with the most favorable spot for the development of minable widths on the southern end of claim 12.

The lamprophyre dikes consist of hornblende-chlorite, epidote, altered feldspar, hematite, and calcite, with sparse galena, chalcopyrite, and pyrite, and occasional fluorite, magnetite, and biotite. Much of the hematite is altered to limonite and on weathered surface the dikes are a rusty brown color and effervesce readily in dilute acid. No uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblende, since the radioactivity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals identifiable.

These dikes also have been described by Raymond B. Stroud[/], who states that "Radioactivity has been found in two dike rock types, both basic and siliceous." The basic dikes, which he says "resemble andesite and are very limey in nature" presumably are the same as those described by Smith as lamprophyre dikes. The siliceous dikes, which, according to Stroud, "are of very limited areal extent and

[/] Geologist, Atomic Energy Commission, in a letter dated June 22, 1954 to Gordon Tolliver.

are not nearly so prominent as the basic dikes," are thought by this writer to be quartz veins, which are more-or-less brecciated and mineralized.

Uranium content of Dikes

The source of the radioactivity in the dikes on the C.T.C. claims is not definitely known to us but Stroud mentions that the dikes possibly may contain uranophane or carnotite and that "it is thought that hydrothermal action is responsible for the uranium mineralization present." Harold D. Wolfe [1/] reports that many of the dikes show a small content of fluorite, and J. F. Foran [2/] reported to this writer that the uranium might be present in both the fluorite and the gangue. Smith reports that the hanging wall (west) side of the dikes is the most radioactive, but that the wall rocks are markedly barren except in a few scattered spots which appear to be weakly mineralized.

Testing of the dike outcrops with a geiger counter indicates that values are extremely variable. Stroud reports that with a background radioactivity of 0.03 milliroentgens, surface readings up to 0.5 milliroentgens were obtained from some of the dikes. He reports that "Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens; locally, however, the dikes were not abnormally radioactive."

1/ Chief, Albuquerque sub-office Atomic Energy Commission - letter dated November 12, 1954 to E. A. Youngburg.

2/ Acting Chief, Denver Exploration Branch, Letter dated November 4, 1954.

The examiners, using a Nuclear instrument, Model 2610, equipped with a 9-inch probe, obtained background readings ranging from .01 to .05 milliroentgens and found that most of the dikes produced radioactivity measurable on the upper part of the first scale. By placing the probe on the outcrop of the dike and allowing a few minutes elapsed time, readings about midway on the middle scale were obtained in many places and these readings in places were reasonably uniform over considerable parts of the dike outcrops. When taken in this manner, readings of 0.1 to 0.15 milliroentgens were obtained in many places on the dikes. As the geiger readings obtained on the dike were substantially greater than the background readings, it appeared as if the dikes might contain appreciable amounts of uranium; however, this is not the case, as is shown by chemical analysis of samples.

Radiometric and chemical analyses of 13 samples of the dikes were supplied by the AEC but the location of these are not known to the examiners. The analyses are given in Table I.

TABLE I

SAMPLES AND ANALYSES BY ATOMIC ENERGY COMMISSION

Serial No.	Field No.	eU%	U %
207466	F-15844	0.033	-
207467	15845	0.049	0.046
207468	15846	0.041	0.030
207469	15847	0.027	-
207470	15848	0.039	-
207471	15849	0.015	-
207475	16246	0.044	0.036
207476	16247	0.20	0.21
207477	16248	0.043	0.038
207478	16249	0.057	0.040
207479	16250	0.021	-
207480	16501	0.084	0.11
207481	16502	0.18	0.21

In addition to the above samples, analyses are available on 21 samples cut from the dikes at locations shown on Fig. 3. These samples were taken by Clay Smith and analyzed by D. H. Reynolds for Chapman and Woods, Albuquerque, N. Mex. Analyses of these 21 samples are given in Table II.

TABLE II

APPLICANT'S ANALYSES OF SAMPLES FROM C.T.C. CLAIMS, SOCORRO COUNTY, NEW MEXICO

Sample No.	Thickness	Electrometric U_3O_8	Chemical U_3O_8
1	1.9'	.005	.011
2	1.8'	.005	.013
4	1.8'	.005	.012
5	1.9'	.005	.008
6	1.7'	.010	.010
7	1.3'	.005	.020
8	1.2'	.005	.022
9	0.9'	.030	.039
10	1.7'	.005	.007
11	1.0'	.005	.013
12	1.2'	.005	.009
13	1.2'	.010	.014
14	1.0'	.010	.015
15	1.2'	.010	.017
16	1.0'	.015	.021
17	1.2'	.020	.020
18	1.1'	.040	.031
19	1.1'	.015	.018
20	1.0'	.020	.013
21	1.3'	.020	.016
D.D.H. 16 B	-	-	.05

While probing diamond drill hole 16B Smith obtained unusually high radioactivity in the mineralized zone at a depth of 69.9 to 75.5 feet. This especially high radioactivity must have been due to mass effect, randon accumulation or defective instrumentation because the core yielded radiometric results that were nearly the same as those obtained in other parts of the mineralized zone, and chemical analyses of the split core showed the presence of 0.05 percent uranium.

Five check samples were taken by W. H. Hardwick, Engineer, U. S. Bureau of Mines, the locations of which are shown on Fig. 3, and the analyses of which are given in Table III.

TABLE III

DMEA SAMPLES, C.T.C. CLAIMS

No.	Width in Inches	Equivalent U_3O_8	Chemical U_3O_8
13043	11	0.01	0.005
13044	14	0.01	0.011
13045	12	0.02	0.007
13046	8	0.05	0.039
13047	10	0.02	0.020

Inspection of Tables I, II and III reveals that of the 38 samples of which analyses are available only 2 samples contained uranium measurable in tenths of one percent. The numerical average of all the 38 samples is 0.033 percent uranium or about one-tenth as much uranium as an off-plateau deposit should have to become a successful producer.

As the uranium occurs in dikes averaging not over 18 inches wide, and averaging only 11 inches wide where sampled by DMEA, it does not appear that the deposit is significant in either size or grade. Stroud reports that the dikes are not unusually radioactive, a fact that is amply supported by the assays, including those submitted by the applicant's consulting geologist.

EXPLORATION

The applicants, through the efforts of their consulting geologist, have made a careful study of the property by geological mapping (see fig. 3), sampling and diamond drilling. The DMEA examiners reviewed all of the findings of the applicants' geologist and found the data was accurate, reliable and very much as represented. The drill cores were inspected and checked with a Geiger counter, and 5 samples taken from the dikes verified the sample data provided by the applicants' geologist and the AEC.

Smith's logs of the 3 holes drilled by the applicants are given in Table IV, and the locations of the holes are shown on Fig. 3.

TABLE IV

DIAMOND DRILL HOLE LOGS

Hole No. 2: Bearing N 57° E @ -30°.

0'-78'		Hole collared in soil and decomposed quartz diorite; casing to 30'; no core from this interval.
78'-84'	1.7'	core-28% recovery; coarse grained quartz diorite, mafic facies, with $\frac{1}{4}$" lamprophyre dikes nearly parallel to the hole replaced by calcite.
84'-94'	6.9'	core-69% recovery; quartz diorite as above; from 92'-94' granitic facies with 1" lamprophyre veinlet @ 94'.
94'-104'	1.8'	core-18% recovery; mafic facies quartz diorite as above.
104'-110'	0.9'	core-15% recovery; quartz diorite as above.
110'-132'	5.3'	core-24% recovery; quartz diorite as above with calcite and lamprophyre veinlets; calcite is leached yielding shattered and broken ground when cored.
132'-135'	0.8'	core-27% recovery; quartz diorite as above with small fragment of granite recovered @ 133.5'; dike???
135'-142'	4.9'	core-70% recovery; quartz diorite as above; lamprophyre dikelets 1" thick @ 138' and 142'.
142'-220'	35.7'	core-46% recovery; quartz diorite as above; lamprophyre and diabase veinlets less than $\frac{1}{2}$" thick more abundant near 200'; lost water at 169'; much of the core badly broken.
220'-229'	7.9'	core-88% recovery; diabase dike to 225' with quartz diorite stringers at 221' and 222'; granitic facies quartz diorite 225'-229'.
229'-232'	2.5'	core-81% recovery; quartz vein from 229'-230' then normal quartz diorite.
232'-235'	2.6'	core-87% recovery; quartz diorite as above; at 232.5' 1" mineralized lamprophyre dike; $\frac{1}{4}$" quartz veinlets between 234' and 235'.
235'-243'	8.0'	core-100% recovery; quartz diorite as above; $\frac{1}{4}$" diabase stringer @ 239.5'.
243'-251'	7.7'	core-96% recovery; quartz diorite as above; $\frac{1}{4}$" calcite stringer @ 247.5'.
251'-256'	4.9'	core-98% recovery; quartz diorite as above; from 253.3'-254.2' very fine-grained quartz diorite.
256'-282' (Bottom)	23.5'	core-90% recovery; quartz diorite as above; 258.5' 1" granite dike; between 261' and 263', $\frac{1}{4}$"-$\frac{1}{2}$" carbonate stringers nearly parallel the hole; from 266'-267' lamprophyre stringers; calcite veinlet at 281'.

TABLE IV

DIAMOND DRILL HOLE LOGS
(Continued)

Hole No. 16A: Bearing S 56° W @ -40°.

0'-17'		Hole collared in decomposed quartz diorite; casing to 17', no core; probe in hole indicated mineralization from 10.1'-11.9'.
17'-44'	19.7'	core-73% recovery; coarse grained quartz diorite; 1" granite dike @ 26'; other thin granite stringers from 17'-27' and @ 43.2'; very weak mineralization (?) @ 18.5'.
44'-57'	12.5'	core-96% recovery; quartz diorite as above, badly shattered @ 56'; granite dikes; 2" @ 44.7', ¼" @ 45.6', ½" @ 46.1', 4" @ 47', 1/16" @ 48.4', ½" @ 50'; 3" diabase dike @ 51.5'.
57'-62'	4.5'	core-90% recovery; quartz diorite as above; from 59.7'-60.7' diabase with ¼" granite stringers; @ 61.5' 1/8" limonite stained schistose quartz lamprophyre stringer.
62'-75'	11.4'	core-88% recovery; quartz diorite as above; diabasic inclusions or replacements from 71'-75'; ¼" granite stringer @ 71.5'.
75'-85'	9.1'	core-91% recovery; quartz diorite as above; granite dikes; ¼" @ 76', ¼" @ 80', 3/4" weakly mineralized @ 80.5', ¼" @ 82'; @ 84.5' ½" diabase dike.
85'-90' (Bottom)	4.1'	core-82% recovery; quartz diorite as above; weakly mineralized granite and lamprophyre dikes: ¼" @ 85', ½" @ 86', 1" @ 87'.

Mineralization in Hole 16A

10.1'-11.9'	Weak (0.01-0.05%)
43.4'-44.2'	Very weak
61.3'-61.7'	Very weak
85.5'-87'	Weak

TABLE IV

DIAMOND DRILL HOLE LOGS

(Continued)

Hole No. 16B: Bearing N 56° E @ -50°.

0'-12'		Hole collared in soil and decomposed quartz diorite, granitic facies; casing to 12', no core.
12'-37'	7.7' core-	31% recovery; alternating fine-grained and coarse grained granitic facies of the quartz diorite; from 31'-33' granite dike.
37'-50'	10.6' core-	81% recovery; normal facies coarse grained quartz diorite with thin hematite and limonite partings nearly parallel to the core; $\frac{1}{4}$" granite lens @ 38'.
50'-54'	2.3' core-	57.5% recovery; quartz diorite as above; $\frac{1}{4}$" diabase stringer @ 50'; $\frac{1}{2}$" schistose quartz lamprophyre @ 50.5'.
54'-67'	8.3' core-	64% recovery; quartz diorite as above; 1/8" hematite stained quartz lamprophyre dike @ 54.5'.
67'-71'	3.3' core-	82.5% recovery; quartz diorite as above; hematite stained lamprophyric veinlets @ 67.5' and 68'; from 69.5'-70' mineralized lamprophyre dike injected with granite stringers.
71'-75'	2.8' core-	70% recovery; quartz diorite as above; mineralized granite stringers less than $\frac{1}{2}$" thick @ 71.5', 71.8', 71.9', and 72'; mineralization dies out in core by 75'.
75'-85' (Bottom)	8.0' core-	80% recovery; quartz diorite as above; a few thin schistose quartz lamprophyre partings between 75' and 78'; very weak mineralization @ 82.3'.

Mineralization in Hole 16B

69.9'-75.5'	Good (Commercial?)
79.5'	Weak stringer
82.2'-83.1'	Weak stringer

The applicants' original proposal to DMEA was to drill 20,000 feet of diamond drill holes at a cost of $112,000 but this later was revised downward to about $25,000. At the time of the examination it was apparent that the property did not justify expenditures of this amount, and when this was brought to the attention

of the applicants they agreed that a basic program of about 1,000 feet of drilling would determine if the property was of sufficient merit to be of further interest to them. Accordingly, Smith submitted new proposals for the applicant. The new revised program was to consist of drilling 14 short holes (shown on Fig. 2 and 3) to intersect the dikes 50 feet below the outcrop, the total amount of drilling to be 1,000 feet, at a cost of $9,050.

None of the proposed exploration appears to be justified because of the extremely low uranium content of the dikes.

ORE RESERVES

No effort was made to estimate reserves because the mineralized dikes contain insufficient uranium to be ore under any known or foreseeable conditions.

CONCLUSIONS AND RECOMMENDATIONS

The uraniferous dikes on the C.T.C. claims in Palvodera Mountains, New Mexico have an average width of 18 inches or less, and are a few hundred feet in strike length. The uranium content of the dikes is about 0.033 percent as indicated by the numerical average of 38 analyses. The uranium is thought to be present as pitchblende or uraniferous fluorite and, therefore, is believed to be of hydrothermal origin.

It is recommended that Government participation in exploration of the deposits be denied because of the exceedingly low uranium content of the dikes.

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

New Customhouse
Denver 2, Colorado

October 14, 1954

Memorandum

To: W. R. Storms
J. N. Faick

From: DMEA Field Team, Region IV

Subject: DMEA Docket 3446 (Uranium), Seltzer, Seltzer, Holland and Magee C. T. C. group of claims, Socorro County, New Mexico

We herewith transmit a complete copy of the application, DMEA Docket 3446, to J. N. Faick and W. R. Storms. Also a copy of a geologic report prepared by Mr. Clay T. Smith, geologist for the applicants, is transmitted to J. N. Faick.

The property involved in the application consists of the C.T.C. group of 51 claims located in T-2-S, R-1-W, New Mexico Base Meridian, Socorro County, New Mexico.

Your attention is called to the fact that some of the proposed drill holes lie outside of claim boundaries as shown on the map. The numbering on claim corners indicates that the applicant controls this additional ground but this fact should be verified at the time of the field examination.

We have been advised that the applicant intends to revise his proposed program downward in total cost. In the event that you consider some exploration work on this property to be warranted, the applicant's geologist, Mr. Clay T. Smith, should be consulted and a program acceptable to both the applicant and the Government can be determined.

As part of the field examination, please contact A.E.C. to obtain their advice relative to the proposed program.

A suitable report covering the examination is requested.

W H King
W. H. King

for E. N. Hartman
A. H. Koschmann
DMEA Field Team

RDB:mm
cc: Docket 3446
A.P.Butler
A.J.Martin
Sec. to the Oper. Comm. ✓
A.H.Koschmann
Chron.

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

OCT 18 1954

224 New Customhouse
Denver 2, Colorado

October 14, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region lV

Subject: DMEA Docket 3446 (Uranium),
Seltzer, Seltzer, Holland, and Mages
C. T. C. group of claims
Socorro County, New Mexico

Please ignore our memorandum dated October 12, 1954, in which we requested a copy of a map showing the proposed drill hole locations in relation to the applicant's property lines.

The required map has been supplied to this office by the applicant.

W. H. King

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

Received
OCT 18 1954

224 New Customhouse
Denver 2, Colorado

October 14, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3446 (Uranium),
Seltzer, Seltzer, Holland, and Mages
C. T. C. group of claims
Socorro County, New Mexico

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The required map has been supplied to this office by the applicant.

W. H. King

RDB:mn

cc: DMEA Docket 3446
A. P. Butler
Chron.

10/18/54 gla

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

224 New Customhouse
Denver 2, Colorado

October 12, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region 1V

Subject: DMEA Docket 3446, (Uranium)
Seltzer, Seltzer, Holland and Mages, C T C group of claims
Socorro County, New Mexico

Reference is made to a letter dated August 20, 1954, from the Washington Office to the subject applicant requesting four copies of a map drawn to scale which shows the location of the proposed drill sample data in relation to the claim boundaries.

A copy of this map was not transmitted to this office when a field examination was requested. As this information is needed for our engineer's use in conjunction with this proposed examination, please forward a copy of this map if it has been received from the applicant.

W. H. King

224 New Customhouse
Denver 2, Colorado

October 12, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3446, (Uranium)
Seltzer, Seltzer, Holland and Mages, C T C group of claims
Socorro County, New Mexico

Reference is made to a letter dated August 20, 1954, from the Washington Office to the subject applicant requesting four copies of a map drawn to scale which shows the location of the proposed drill sample data in relation to the claim boundaries.

A copy of this map was not transmitted to this office when a field examination was requested. As this information is needed for our engineer's use in conjunction with this proposed examination, please forward a copy of this map if it has been received from the applicant.

W. H. KING
W. H. King

RDB:mn

cc: DMEA Docket 3446
A. P. Butler
Chron.

Surname 700

FLKnouse

Ellis
Hedges
Kilsgaard
Selfridge
Jefferson

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

Mr. Leo Seltzer, et al
c/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

OCT 8 1954

Re: Docket No. DMEA-3446 (Uranium)
C. T. C. Mining claims
Socorro County, New Mexico

Dear Mr. Seltzer:

The application for assistance in exploring your property in Socorro County, New Mexico, under the above-captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to the Executive Officer of Region IV at the following address:

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

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

Sincerely yours,

SIGNED
Administrator

FLKnouse:am
10-6-54
cc to: Admr. Reading File
Docket
Code 700
Mr. Knouse
DMEA Field Team, Region IV (2)

R.C.S.

Surname 700

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

FLKnouse

OCT 8 1954

DMEA - Department of the Interior

COLLECT TELEGRAM

MR. [illegible], ET AL
C/O ROBERT E. LERNER
333 SOUTH BEVERLY DRIVE, SUITE 205
BEVERLY HILLS, CALIFORNIA

PROJECT APPLICATION DOCKET NO. DMEA-3446 [illegible] W. H. KING, DMEA EXECUTIVE OFFICER, REGION IV, 224 NEW CUSTOMHOUSE BUILDING, DENVER, COLORADO FOR FIELD EXAMINATION.

C. O. Mittendorf

C. O. Mittendorf, Administrator

FLKnouse:am
10-6-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
A. P. Butler, Jr. Rm. 5227
J. C. Hosted, Rm. 3210, GSA
DMEA Field Team, Region IV(2)
Mr. Knouse
Code 700

Surname 700

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

F. L. Knouse
Ellis
Selfridge
Reynolds

OCT 8 1954

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

Re: Docket No. DMEA-3446 (Uranium)
Leo Seltzer, et al
C. T. C. Mining claims
Socorro County, New Mexico

Dear Mr. King:

The captioned application is referred to your office for a field examination and report on the proposed project.

Copies of memoranda are enclosed from Mr. Arthur P. Butler, Jr., dated August 25 and September 30, and from Mr. James E. Crawford dated September 22, 1954. All recommendations and questions contained in these memoranda are to be covered by the Field Team report. There is also enclosed a copy of a report by Dr. Clay T. Smith dated September 11, 1954, covering the proposed project.

If your office recommends either the program as submitted or an alternate one approved by the Applicant, please furnish us the detailed information required to draft a contract.

A copy of the application with related data was transmitted to your office on August 16, 1954.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

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

Thor H. Kiilsgaard
Member, Geological Survey (GCS)

FLKnouse:am
10-6-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
A. P. Butler, Jr. Rm. 5227
J. O. Hosted, Rm. 3210, GSA
Mr. Knouse
Code 700
Mr Kiilsgaard

R.C.S.

NEW MEXICO SCHOOL OF MINES
SOCORRO, NEW MEXICO

DEPARTMENT OF GEOLOGY

Dear Mr. Knowse,

You ought to take a little time off and do this examination yourself. Socorro has greatly changed since you were here and the school has been ahead of the town in that respect. Martin Speare is still with us as librarian and instructor in Spanish. I guess he and W. W. Long would be the only persons on campus that might be familiar to you.

With kindest regards,

Clay T Smith
Head, Dept of Geol.

Library
RECEIVED
OCT 4 1954

RECEIVED
SEP 20 1954

Received
SEP 20 1954

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by

CLAY T. SMITH
GEOLOGIST

GEOLOGICAL SURVEY
TEPCO
RECEIVED
SEP 27 1954
Denver

Attest: Clay T. Smith
Clay T. Smith
September 11, 1954
Socorro, New Mexico

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by
Clay T. Smith
Geologist

SUMMARY AND CONCLUSIONS

The CTC mining claims comprise a block of 51 claims nearly 2 miles in length and 3/4 of a mile wide. They occupy part of sections 5, 6, 7, and 8, T 2 S, R 1 W, New Mexico Base and Meridian. The claims are under option to Oscar Seltzer and associates and all the adjacent land is covered by additional mining locations. Scant desert vegetation covers the moderately steep slopes and broad bajada surfaces of the Lemitar Hills on which the claims are located.

The principal rock outcrops are pre-Cambrian igneous and metamorphic rocks. The mineralization is confined to lamprophyre dikes which cut all the earlier pre-Cambrian rocks and are in turn overlain by Carboniferous limestone or undifferentiated Tertiary-Quaternary gravel deposits. The mineralization favors the hanging wall side of the thinner lamprophyre dikes which strike a few degrees west of north dipping steeply west; such dikes are best developed in quartz diorite country rock.

The principal minerals in the lamprophyre dikes are very fine-grained chlorite, epidote, calcite, and completely altered feldspar; the calcite content and the fine-grained texture sharply distinguish the dikes from the enclosing wall rocks. No uranium minerals have been

identified although grab samples have assayed as high as 0.248% U_3O_8 chemically. The surface exposures of the dikes are thin and often discontinuous and the only hope for commercial exploitation lies in the development of higher grade zones within the dikes or in the discovery of wider zones of mineralization. The continuity of mineralization which has been established by a small amount of surface sampling suggests that higher grade zones may be concealed beneath the surface or in areas of poor outcrops. In a few places dikes intersect or develop en echelon patterns and such areas show promise of developing minable thicknesses.

The mineralization is of sufficient continuity to warrant additional work to prove or disprove the presence of commercial ore. Diamond drilling offers the most feasible method of testing the area until more information concenning the distribution of the values can be gained. Approximately 10,000 feet of diamond drilling supplemented by additional detailed mapping and surface sampling should permit conclusive evaluation of the property. A minimum expenditure of $75,000 is indicated by the showings already exposed and if exploration is favorable three to four times this amount should be budgeted for development work.

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by
Clay T. Smith
Geologist

INTRODUCTION

The CTC mining claims are located in sections 5, 6, 7, and 8, T 2 S, R 1 W, New Mexico Base and Meridian. The claims cover the eastern slopes of the Lemitar Hills about one mile west of U. S. Highway 85 and are easily accessible by ranch road. The nearest town and supply center is Socorro ten miles to the south.

Fifty-one claims are included in the block which is under option to Oscar Seltzer and associated of Chicago and Los Angeles. Adjoining areas have been located by several individuals and there are three claims in the center of the block which are not held by Seltzer.

The area has low to moderate relief with steep-sided, deep canyons in the western part exposing the older rocks and a broad sloping bajada surface masking the geology to the east. On the bajada surface the drainage is braided, but in the steeper canyons the major drainage has been superposed from an earlier meandering pattern. Vegetation is scant; typical plants are creosote bush, several species of cacti, mesquite, scrub cedar or juniper, and sparse grasses.

GEOLOGY

Rocks exposed on the CTC mining claims range in age from pre-Cambrian to Recent. The principal outcrops are complexly folded and faulted metamorphic and igneous rocks usually assigned to the pre-Cambrian in this part of New Mexico. The eastern margin of the claims is covered with gravels which may range in age from early Tertiary to Recent and are commonly referred to the late Tertiary Santa Fe formation. These materials are considerably younger than any of the mineralized bodies and so were not differentiated on the geologic map except to indicate where they mask possible mineralized zones.

Five units are distinguished in the pre-Cambrian rocks of which four are of igneous origin and one represents principally metamorphosed sediments. The oldest rocks are northeast-southwest trending belts of chlorite-hornblende schists with some interbedded quartzite and greenstone. The schists are intimately intruded by quartz diorite and the resulting rock, often with a strong gneissic banding, grades indistinguishably from schist through quartz diorite gneiss to massive quartz diorite. The quartz diorite changes facies toward granite by the addition of quartz and reduction in the amount of dark minerals (principally hornblende and biotite) or toward hornblende gabbro by the absence of quartz. Time did not allow detailed mapping of the quartz diorite facies changes and in some areas (particularly on claims 41, 1, and 2) contacts

between metasediments and quartz diorite are arbitrarily drawn. There is some suggestion that mineralization favors the more granitic facies of the quartz diorite as a host rock, but there is too little sampling as yet to determine the quantitative value of such an observation.

Massive red to gray granite outcropping mostly in the northwest corner of the property intrudes the quartz diorite. Locally, narrow granite dikes cut the quartz diorite and along one of these in the southwest corner of claim 12 mineralization is present. It is often difficult to determine whether small granite areas represent granitic facies of the quartz diorite or later intrusions of the massive red granite whose contacts have been obscured by subsequent metamorphism. The principal granite mass in the northwest part of the claims is nearly barren of mineralized zones except along its margins and appears to be an unfavorable host rock.

Two systems of dikes cut all the earlier rocks, an older set of diabase dikes, and a younger set of lamprophyre dikes. The diabase dikes strike within a few degrees of N 60° E and dip steeply north or are vertical. The lamprophyre dikes strike predominantly N 10°-15° W and dip about 75°-80° west, although marked irregularities and local flat dips are found. Most of the dikes are from a few feet to several tens of feet in width; diabase probably averages 20 feet wide and lamprophyre, except for the large mass exposed on claim 3, probably averages less than 5 feet. The pattern of the diabase dikes indicates

that there are no major north-south fault zones within the area mapped. In a few places diabase apparently offsets lamprophyre where the two dike types intersect, but in most spots the lamprophyre dikes cut across the diabase indicating that they are the youngest pre-Cambrian rocks in the area. All of the uranium mineralization is associated with the lamprophyre dikes.

Resting on the pre-Cambrian rocks with profound unconformity are a few small patches of limestone of probable Carboniferous age. The limestone beds have been extremely brecciated, strongly silicified, and locally, are the host rocks for narrow quartz veins containing minor amounts of barite, galena, chalcopyrite, and calcite. A few fossils are present and these badly altered outcrops may be related to a narrow belt of Mississippian limestone outcropping west of the CTC claims. No uranium has been detected in the many prospect pits sunk on the quartz veins.

The gravels which mask outcrops along the eastern margin of the area are composed primarily of boulders of the older rocks. There is a large amount of volcanic debris derived from the middle Tertiary volcanic rocks which are extensively exposed to the north, south, and west of the Lemitar Hills. Included in the area mapped as gravel are a few outcrops of andesite tuff and breccia which probably represent remnants of the thick volcanic sequence.

MINERALIZATION

Mineralization on the CTC mining claims is almost entirely confined to the very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 2, 3, 4, 8, 11, and 12 with the most favorable spot for the development of minable widths on the southern end of claim 12.

The lamprophyre dikes consist of hornblende-chlorite, epidote, completely altered feldspar, hematite, and calcite, with sparse galena, chalcopyrite, and pyrite, and occasional fluorite, magnetite, and biotite. Much of the hematite is altered to limonite and on weathered surface the dikes are a rusty brown color and effervesce readily in dilute acid. No uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblende, since the radio-activity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals identifiable. Rough determinations with a geiger counter suggest that the western or hanging wall side of the dikes is somewhat more mineralized than the remainder of the dike; the wall

rocks are markedly barren except in a few scattered spots where the granitic facies of the quartz diorite seems to be weakly mineralized along the dikes.

Surface testing by geiger counter indicates that values are extremely variable and the few samples taken by the Atomic Energy Commission representatives seem to bear this out. However, 20 samples cut at 50 to 100 foot intervals over 800 feet of mineralized dike in the southern part of claim 12 clearly indicate an uniformity of mineralization which warrants further investigation.

shown on map? analyses?

PROPOSED EXPLORATION PROGRAM

The aims of any further exploration on the CTC mining claims would be to attempt to develop areas containing higher grade mineralization as well as delineating those zones along the dikes which would be wide enough to mine. It is encouraging to note that of the samples cut, the better grades of material are associated with the areas of thickening or intersection of the dikes. Parts of the area north of the bulldozer trench between samples 7 and 9 show geiger counter values which are two or three times as high as those shown in the areas where the samples were cut. It should be noted that in cutting samples 1 through 21 no attempt was made to sample the "hot spots". These samples were taken to determine continuity of mineralization which is established without doubt.

Further exploration should be divided into two parts which can be carried on concurrently if desired. First,

the program of surface sampling and mapping should be extended to the southern half of the claims where grab samples on "hot spots" have indicated commercial ore showings. Likewise, the surface sampling should be extended to the north and all dikes with 200 to 300 feet of surface continuity such as those exposed on claims 2 and 7 and on claims 3 and 8 should be trenched and tested at regular intervals. Additional spot samples are probably not worth the expense, although a few samples might be taken from the large lamprophyre dike exposed over much of the length of claim 41; this dike is similar in structure, attitude, and composition to the narrower mineralized dikes and although it shows little anomaly on a geiger counter a few samples tested chemically might be warranted.

Second, drilling to explore the area below the surface exposures should be undertaken in those areas where overlap or intersection of dikes gives promise of minable thicknesses. Seventeen diamond drill hole profiles are shown on the accompanying map to indicate where test holes might reasonably be located to investigate the showings on claims 4, 11, and 12. Table I gives a summary of the proposed diamond drilling program. More than half of the holes are expected to encounter more than one mineralized dike and in some cases explore a mineralized zone of considerable potential width. The order of numbering the profiles does not necessarily indicate the order of drilling the profiles and the results obtained from the first few profiles drilled might force revision of

TABLE I

SUMMARY OF PROPOSED DIAMOND DRILLING

Drill hole	Bearing	Angle of hole below horizontal	Depth to first mineralization	Depth to main vein	Total Depth
1	N 53° E	45°	120'	150'	210'
2	N 53° E	30°	100'	250'	315'
3	N 53° E	25°	65' or 190'	380'	415'
4	N 53° E	45°	100'	150'	200'
5	N 53° E	45°	---	120'	165'
6	N 53° E	45°	80'	110'	160'
7	N 53° E	45°	---	110'	160'
8	S 59° W	20°	130'	170'	200'
9	S 59° W	20°	145'	180'	210'
10	S 59° W	20°	130'	155'	185'
11	S 59° W	20°	---	120'	170'
12	S 59° W	45°	---	110'	190'
13	N 59° E	45°	60'	130'	150'
14	N 59° E	30°	75'	190'	225'
15	N 56° E	45°	---	185'	240'
16	S 56° W	45°	---	110'	190'
17	S 56° W	45°	---	115'	200'
			Total estimated footage		3985'

the entire proposal. The profiles are spaced at 150 foot intervals along the strike of the dikes and the holes are selected to explore a zone about 100 feet below the outcrop on each profile. If the results from the first hole drilled on any profile are encouraging, additional holes may be drilled from the same set-up for further information.

Profile 2 is recommended for first exploration since this profile explores two mineralized zones as well as a higher grade and thicker portion of the principal mineralized dike. Profiles 1 and 3 should then be drilled and evaluation of the results would determine additional exploration. Assuming that the indications are favorable, they may point to the drilling of profiles 15, 16, and 17 next, or 4, 5, and6. If the results were unfavorable, it might be desirable to move to the other end of the mineralized zone and drill holes 14, 13, 12, and 11 in that order and then evaluate the results. Profiles 7, 8, 9, and 10 should be drilled last unless the surface sampling suggests that these should be given earlier attention. If all 17 profiles are drilled approximately 4000 feet of drilling should be contracted for, although 2000 feet with option for the additional 2000 feet could be negotiated, if desired. On the latter basis profiles 1, 2, 3, 4, 14, 13, 12, and 11 could be drilled with the initial 2000 foot contract and the remainder utilized if favorable results are obtained.

A reconnaissance examination of the southern part of the claims did not suggest as much continuity of dikes as is indicated on the accompanying map, although detailed mapping would be necessary to establish the relations. An additional 2000 to 4000 feet of drilling should provide sufficient information to evaluate the southern part of the claims and perhaps as much additional drilling might be necessary should some of the shorter dike exposures merit further investigation. Approximately 10,000 feet of drilling coupled with an extensive surface sampling and mapping program should provide adequate data regarding the potentialities of the property. The minimum cost for such exploration should not exceed $75,000 to $100,000 although these figures would vary considerably depending upon the results of the exploration as it progressed. If favorable indications warrant additional drilling or underground exploration, a budget of not less than $250,000 should be provided.

10/4/54 gla

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: September 30, 1954

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: DMEA Docket 3346 (Uranium), Leo Seltzer, et al, CTC Mining claims, Socorro County, New Mexico

Reference is made to your memorandum of September 22, and the transmitted report entitled "CTC Mining claims, Socorro County, New Mexico," by Clay T. Smith.

Mr. Smith's report, apparently prepared at the request of the applicant, has been reviewed. The report, as I received it, does not contain:

1) The analyses of samples mentioned on page 8.

2) The locations of the proposed drill holes, mentioned on page 9.

Although the report makes the geologic setting of the deposits much more clear than the original application, the lack of these essential items still leaves an inadequate basis for appraising the worth of the occurrence for exploration. The results of the analyses of 13 samples made by the Atomic Energy Commission make it questionable that exploration would find significant amounts of uranium ore. Nevertheless even if the applicant furnishes the still missing data, I believe that an adequate determination of the desirability of exploring the property can be obtained only by field inspection. They at least have a fairly adequate geologic map, and data that would be useful to the Field Team.

I recommend, therefore:

1) That the application be referred to the Field Team for review and recommendation concerning its merit,

and 2) that the applicant be asked to furnish the missing data to the Field Team.

I suggest that the Field Team consult with the staff of the Denver Exploration Branch, U. S. Atomic Energy Commission to obtain the benefit of such information as that staff may have.

Mr. Smith's report is enclosed.

Arthur P. Butler, Jr.

Enclosure

Copy to: E. Wm. Ellis (2)

October 1, 1954

Memorandum

To: File

From: F. L. Knouse, Mining Engineer
Rare and Misc. Metals Division

Subject: Telephone Conversation
Docket DMEA-3446 (Uranium)
Leo Seltzer, et al
C.T.C. Mining claims
Socorro County, New Mexico

Mr. Leo Seltzer telephoned from San Francisco, Calif., concerning status of application. He was advised we were awaiting information from our Denver Commodity Engineer (Butler) which was sent to him September 22, 1954, and that we were expecting to hear from them any day.

He requested to send him a telegram collect when it was referred to Field Team if it was sent to Field Team for an examination.

F. L. Knouse

FLKnouse:am

cc to: Docket (original)
Mr. Knouse
Code 700
Chrom

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

October 1, 1954

Memorandum

To: File

From: F. L. Knouse, Mining Engineer
Rare and Misc. Metals Division

Subject: Telephone Conversation
Docket DMEA-3446 (Uranium)
Leo Seltzer, et al
C.T.C. Mining claims
Socorro County, New Mexico

Mr. Leo Seltzer telephoned from San Francisco, Calif., concerning status of application. He was advised we were awaiting information from our Denver Commodity Engineer (Butler) which was sent to him September 22, 1954, and that we were expecting to hear from them any day.

He requested to send him a telegram collect when it was referred to Field Team if it was sent to Field Team for an examination.

F. L. Knouse

F. L. Knouse

Surname copy 700

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

FLKnouse
Ellis

September 22, 1954

Memorandum

To: Mr. A. P. Butler, Jr., Uranium Commodity Member, USGS

Through: Mr. Thor H. Kiilsgaard, USGS

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3446 (Uranium)
Leo Seltzer, et al
C.T.C. Mining claims
Socorro County, New Mexico

Reference is made to the above-docketed application, dated August 10, 1954, and your memorandum of August 25.

Forwarded herewith is a report by Clay T. Smith, Geologist, recently received from the Applicant, as a result of our letter to Mr. Seltzer on August 20 requesting additional information.

We would appreciate receiving any additional comments you may desire to submit in connection with the subject application after you have reviewed Mr. Smith's report. Since this is the only copy of the report available, please return it with your memorandum.

Ernest Wm. Ellis

Ernest Wm. Ellis

Attachment

FLKnouse/gla
cc to: Admr. Reading File
Docket
DMEA Field Team, Region IV (2)
Code 700
Mr. Knouse

R.C.G.

9/22/54 gla

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

September 22, 1954

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

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

Subject: DMEA Docket 3446, (Uranium) C.T.C. Mining Claims, Socorro County, New Mexico

I have reviewed the August 10th application of the subject document and have discussed the application with Joseph E. Hosted, representative of the Atomic Energy Commission. I have also studied the additional information supplied by the applicant on September 11, a report by Clay T. Smith, geologist.

The report on the C.T.C. claims by Mr. Clay T. Smith, geologist, indicates that the uranium mineralization is present in only the lenticular lamprophyre dikes which average less than 18 inches in width. No uranium minerals have been identified visually or microscopically in the dike material, although chemical analyses have shown as much as 0.2 percent uranium in unidentified grab samples obtained from the claims.

The AEC representative has discussed the application with Charles Towle of the Commission's Denver office. The Commission is apparently quite interested in the area, feels that it may be the seat of favorable uranium mineralization, and would like to see some exploration work done such as proposed by the applicant.

It is my suggestion that (1) a field team examination of the claims be made, owing principally to the AEC's interest in the area, and (2) a modified drilling program be allowed, should the field team examination verify the findings of the applicant and indicate that some further exploration is desirable.

John E. Crawford

John E. Crawford

Attachment

HAROLD A. FENDLER
ROBERT W. LERNER
MIRIAM O. FENDLER
ROBERT HAYES

LAW OFFICES
FENDLER AND LERNER
333 SOUTH BEVERLY DRIVE
BEVERLY HILLS, CALIFORNIA

TELEPHONES:
BRadshaw 2-2161
CRestview 1-2156
CABLE ADDRESS "FENWEB"

Defense Minerals Administration
RECEIVED
SEP 20 1954

September 17, 1954

United States Department of Interior
Defense Minerals Exploration Administration
Washington 25, D.C.

Attention: F.L. Knouse
Rare & Misc. Metals Division.

In re: Docket No. DMEA-3446 (Uranium)
C.T.C. Mining Claims
Socorro County, New Mexico

Gentlemen:

In response to your letter under date of August 20th, 1954 re the above entitled matter, I enclose herewith four copies of a map drawn to scale, together with accompanying report from Dr. Clay T. Smith, Geologist, which answers the questions raised in point 2 of your said letter.

With reference to point 1 of your letter, please be advised that preliminarily my clients plan to operate as a partnership, but will very shortly transfer all assets into a corporation to be formed.

Thanking you for your courtesy in this matter, I remain,

Sincerely yours,

Robert W. Lerner

ROBERT W. LERNER

RWL:c
Encls.

8-31-54
A.W.

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: August 25, 1954

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Application, DMEA Docket 3446 (uranium), Seltzer, Seltzer, Holland, and Mages, c/o R. W. Lerner, 333 S. Beverly Drive, Suite 205, Beverly Hills, California, applicants; C. T. C. claims, Secs. 5, 6, 7, and 8, T. 2 S., R. 1 W., Socorro County, New Mexico

The applicants request $112,000 for 20,000 feet of diamond drilling to explore for uranium associated with mafic and felsic dikes.

A copy of a letter from R. B. Stroud, U. S. Atomic Energy Commission, to Gordon Tolliver, Socorro, New Mexico, accompanied the application, and contains a generalized description of the geology. Results of analyses made on 13 samples, are also included in the letter, but no sample locations or descriptions are given. Only three samples contained more than 0.1 percent U_3O_8.

The area is underlain by pre-Cambrian diorite containing masses of quartz-mica schist and quartz veins. The diorite is locally covered by Pennsylvania limestone. Calcereous andesite dikes which vary from less than one inch to more than two feet wide cut the diorite in an area 6 miles long and one mile wide. The dikes are locally abnormally radioactive, and one in Sec. 5 contains visible galena, chalcopyrite, pyrite and a yellow secondary uranium mineral. Radioactive siliceous dikes are found in Sec. 6. No further information is available in the files of the Geological Survey.

Recommendation

The proposed exploration cannot be related to the geology on the information contained in the application. A map showing general location of the dikes, the proposed drill sites, and the locations of samples should be submitted before the application is further considered.

Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis (2)

(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. 3446
Metal or Mineral Uranium
Date Received
Estimated Cost $101,200
Participation (Government %)

INSTRUCTIONS

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

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract C.T.C. Mining claims numbers 1 through 51, situated in Sections 5, 6, 7 and 8, Township 2 South, Range 1 West, all in the County of Socorro, State of New Mexico.

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it None

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

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

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

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

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

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

NOTED
AUG 1 1951
TEPCO
Butler

16—66551-1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[XX] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 10, 1954, 195__

ARTHUR M. HOLLAND, IRVING MAGES
OSCAR SELTZER and LEO SELTZER
(Applicant)

By Leo Seltzer
C/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, Calif.

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

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

MF-103

APPLICATION OF:
LEO SELTZER, OSCAR SELTZER, ARTHUR M. HOLLAND and IRVING MAGES
C/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

1. Joint venture composed of:

Leo Seltzer
4755 Encino Avenue
Encino, California

Oscar Seltzer
4755 Encino Avenue
Encino, California

Arthur M. Holland
203 North Wabash Avenue
Chicago, Illinois

Irving Mages
203 North Wabash Avenue
Chicago, Illinois

3 (f). Fourteen locations Volume 169, pp. 44 through 50; fourteen locations Volume 169, pp. 177-184; eight locations volume 169, pp. 55-59; seventeen locations volume 169, pp. 27-35; one location, volume 169, pp. 298; all recorded with the County Clerk, County of Bernallillo, State of New Mexico.

4 (a) Physical description: Bulldozer surface trenches have been employed for exploration; mine workings will be readily accessible.

(b) None.

(c) Copy of geological report of Raymond B. Stroud attached hereto.

(d) Good roads are accessible to the property. Grant's Mill is 140 miles from the project, and there is a railroad spur 4 miles from the project.

(e) The City of Socorro has a large number of persons unemployed at the present time. Since this is essentially a mining area, practically all of these unemployed men are qualified to do the necessary work contemplated hereunder. Materials and supplies are available from Albuquerque which is only 75 miles from Socorro. There is a power line one mile from the property, and sufficient water can be pumped from wells on the property.

APPLICATION OF:
LEO SELTZER, OSCAR SELTZER, ARTHUR M. HOLLAND and IRVING MAGEE
C/o Robert M. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

5 (b). Coring of approximately 20,000 feet. Location of proposed exploration work currently under examination. Map will be furnished within ten days.

(c) Dr. Clay Smith, uranium geologist, University of Mexico, who will supervise the operations, is a recognized expert in the field, and is the author of several books on this subject.

6 (a). A contract is contemplated with the Joy Manufacturing Co., of El Paso, Texas, to core approximately 20,000 feet at $5.00 per foot, aggregating $100,000.00.

(b) All labor is included in the Joy Manufacturing Co. contract except engineering at $100.00 per day and the services of a geologist at $100.00 per day, both for an aggregate of sixty days.

(c) and (d) Furnished by contractor.

(e), (f), (g) and (h). All none.

7. (a) Yes.

C O P Y

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS

In reply refer to:
ASO:RBS

June 22, 1954

Mr. Gordon Tolliver
P. O. Box 392
Socorro, New Mexico

Dear Mr. Tolliver:

The following is a brief description of the geology in the Polvadera Mountain area.

Location

Polvadera Mountain is the highest peak in the Lemitar Mountains. These mountains trend north-south and lie approximately 12 miles northwest of the town of Socorro. The mountains cover an area nearly 7 miles long and about 3 miles wide.

Geology

Rock outcrops are well exposed throughout the Lemitar Mountains. Tertiary volcanics consisting largely of andesite and rhyolite, outcrop on the west flank of the mountains. The rhyolite is light grey in color and apparently overlies the dark purple andesite. Progressing eastward approximately 200 feet of Pennsylvanian Magdalena limestone trends north-south and dips 5 to 30 degrees to the west. PreCambrian granite, medium-grained and orange-brown in color, underlies the limestone to the east. The last exposure to the east is a medium-grained, dark-colored diorite also of Pre-Cambrian age.

Magdalena limestone overlies the Pre-Cambrian diorite in at least two locations. In section 5 (?), T. 2 S., R. 1 W., limestone covers an area of approximately 2 acres and also in section 31 (?), T. 1 S., R. 1 W., the area covered by limestone is approximately 2 acres. It is thought that the entire area may have been covered by the Magdalena formation and has since been removed by erosion. In sections 18 (?) and 19 (?), T. 1 S., R. 1 W., pegmatite dikes cut both the granite and diorite.

Quartz veins and quartz mica schist are found locally throughout the diorite exposure. Radioactivity has been found in two dike rock types, both basic and siliceous.

The basic dikes resemble andesite and are very limey in nature. They may vary from less than one inch to more than two feet in width and may reach as much as 200 feet in length in continuous exposure. They outcrop in an area some 6 miles long and

nearly one mile wide. These dikes are dark, dense, fine-grained and occasionally contain pink feldspar (?) crystals up to 2 millimeters in diameter. Locally these dikes appear to be brecciated and then may contain both quartz fragments and quartz-mica schist fragments imbedded in a dark, fine-grained ground mass. In section 5 (?), T. 2 S., R. 1 W., one basic dike contains macroscopic amounts of galena, chalcopyrite, pyrite and possibly uranophane or carnotite. With a background radioactivity of 0.03 milliroentgens, surface readings up to 0.5 milliroentgens were obtained from these dikes in section 5 (?), T. 2 S., R. 1 W., and section 7 (?), T. 2 S., R. 1 W. Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens, locally, however, the dikes were not abnormally radioactive.

The basic dikes strike generally north-south and appear to dip west. The marked linear nature of the dikes may indicate that the intruding material followed older shear zones and fractures patterns. At this date no uranium mineralization has been found in the limestone area.

Radioactive siliceous dikes have been found in section 6 (?), T. 2 S., R. 1 W. These dikes are of limited areal extent and are not nearly so prominent as the basic dikes. The rock resembles a fine-grained quartz and is stained red-brown in color. It is thought that hydrothermal action is responsible for the uranium mineralization present.

The following list of sample analyses indicate the uranium content of surface material obtained from the area.

Serial No.	Field No.	eU%	U %	V_2O_5%	$CaCO_3$%
207466	F-15844	0.033	-	-	-
207467	15845	0.049	0.046	<1	-
207468	15846	0.041	0.030	<1	-
207469	15847	0.027	-	-	-
207470	15848	0.039	-	-	-
207471	15849	0.015	-	-	-
207475	16246	0.044	0.036	<1	-
207476	16247	0.20	0.21	<1	-
207477	16248	0.043	0.038	<1	-
207478	16249	0.057	0.040	<1	-
207479	16250	0.021	-	-	-
207480	16501	0.084	0.11	<1	-
207481	16502	0.18	0.21	<1	21.5

If we can be of further service, please feel free to contact us.

Sincerely yours,

/s/ RAYMOND B. STROUD
Raymond B. Stroud, Geologist

Docket
surname copy

700

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

F L Knouse
Mattendorf

Mr. Leo Seltzer, et al
c/o Mr. Robert Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

Re: Docket No. DMEA-3446 (Uranium)
C.T.C. Mining Claims
Socorro County, New Mexico

Gentlemen:

This is with reference to your application for Government aid, now being processed by this office, to explore the subject property.

To enable us to continue with the processing of this application we will require the following additional information:

1. Advise under what basis you plan to operate this project, i.e., partnership, limited partnership, company, etc.

2. We note that the property that you propose to explore consists of 51 mining claims, that some surface bulldozer trenching has been employed for exploration and the mine workings will be readily accessible. We also note Mr. Stroud's attached report lists 13 samples from surface material from the general area; however, no specific locations were described or shown on a map.

Please, therefore, supply four copies of a map or sketch, drawn to scale, which shows the locations of each mining claim with exposures of uranium mineralization. If the location could be shown on the above map, where each sample listed in Mr. Stroud's report was taken, or any other sample data, and a description of the mineralized exposure, mineralization, width of exposure, etc., it would be helpful. On the above map please also show the core drilling that you propose to do to explore this property.

Upon receipt of this information we will be able to continue with the processing of your application.

Sincerely yours,

F. L. Knouse
For: Ernest Wm. Ellis, Chief
Rare & Misc. Metals Division

FLKnouse/gla 8-19-54
cc to: Admr. Reading File
Docket
Messrs. A. P. Butler, Jr.
Rm. 3212, GSA
J. O. Hosted,
Rm. 3210, GSA
John E. Crawford, Rm. 3641
Code 700 Mr. Knouse

DMEA Field Team, Region IV (2)

8.20

August 16, 1954

Mr. Leo Seltzer, et al.
c/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

Subject: DMEA-3446
Re: Exploration Assistance
C.T.C. Mining Claims

Gentlemen:

The receipt of your application dated August 10, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3446 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to in any future correspondence relating to your application.

Sincerely yours,

LAW OFFICES
FENDLER AND LERNER
333 SOUTH BEVERLY DRIVE
BEVERLY HILLS, CALIFORNIA

HAROLD A. FENDLER
ROBERT W. LERNER
MIRIAM O. FENDLER
ROBERT HAYES

TELEPHONES:
BRadshaw 2-2161
CRestview 1-2156
CABLE ADDRESS "FENWEB"

August 12, 1954

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

Gentlemen:

Enclosed herewith please find application for aid in exploration project in quadruplicate, which is being filed on behalf of Messrs. Leo Seltzer, Oscar Seltzer, Arthur M. Holland and Irving Mages.

Your early attention to this application will be greatly appreciated.

Thanking you in advance for your courtesy and cooperation in this matter, we remain,

Sincerely yours,

Robert W. Lerner

ROBERT W. LERNER

RWL:c
Encls.
Via Air Mail

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. 3446
Metal or Mineral Uranium
Date Received
Estimated Cost $101,200
Participation (Government %)

INSTRUCTIONS

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

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract C.T.C. Mining claims numbers 1 through 51, situated in Sections 5, 6, 7 and 8, Township 2 South, Range 1 West, all in the County of Socorro, State of New Mexico.

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it None

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[XX] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 10, 1954, 195__

ARTHUR M. HOLLAND, IRVING MAGES
OSCAR SELTZER and LEO SELTZER
(Applicant)

By Leo Seltzer

Leo Seltzer
C/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, Calif.

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

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

MF-103

APPLICATION OF:
LEO SELTZER, OSCAR SELTZER, ARTHUR M. HOLLAND and IRVING MAGES
C/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

1. Joint venture composed of:

Leo Seltzer
4755 Encino Avenue
Encino, California

Oscar Seltzer
4755 Encino Avenue
Encino, California

Arthur M. Holland
203 North Wabash Avenue
Chicago, Illinois

Irving Mages
203 North Wabash Avenue
Chicago, Illinois

3 (f). Fourteen locations Volume 169, pp. 44 through 50; fourteen locations Volume 169, pp. 177-184; eight locations volume 169, pp. 55-59; seventeen locations volume 169, pp. 27-35; one location, volume 169, pp. 298; all recorded with the County Clerk, County of Bernallillo, State of New Mexico.

4 (a) Physical description: Bulldozer surface trenches have been employed for exploration; mine workings will be readily accessible.

(b) None.

(c) Copy of geological report of Raymond B. Stroud attached hereto.

(d) Good roads are accessible to the property. Grant's Mill is 140 miles from the project, and there is a railroad spur 4 miles from the project.

(e) The City of Socorro has a large number of persons unemployed at the present time. Since this is essentially a mining area, practically all of these unemployed men are qualified to do the necessary work contemplated hereunder. Materials and supplies are available from Albuquerque which is only 75 miles from Socorro. There is a power line one mile from the property, and sufficient water can be pumped from wells on the property.

APPLICATION OF:
LEO SELTZER, OSCAR SELTZER, ARTHUR M. HOLLAND and IRVING MAGES
C/o Robert W. Lerner
333 South Beverly Drive, Suite 205
Beverly Hills, California

5 (b). Coring of approximately 20,000 feet. Location of proposed exploration work currently under examination. Map will be furnished within ten days.

(c) Dr. Clay Smith, uranium geologist, University of Mexico, who will supervise the operations, is a recognized expert in the field, and is the author of several books on this subject.

6 (a). A contract is contemplated with the Joy Manufacturing Co., of El Paso, Texas, to core approximately 20,000 feet at $5.00 per foot, aggregating $100,000.00.

(b) All labor is included in the Joy Manufacturing Co. contract except engineering at $100.00 per day and the services of a geologist at $100.00 per day, both for an aggregate of sixty days.

(c) and (d) Furnished by contractor.

(e), (f), (g) and (h). All none.

7. (a) Yes.

COPY

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS

In reply refer to:
ASO:RBS

June 22, 1954

Mr. Gordon Tolliver
P. O. Box 392
Socorro, New Mexico

Dear Mr. Tolliver:

The following is a brief description of the geology in the Polvadera Mountain area.

Location

Polvadera Mountain is the highest peak in the Lemitar Mountains. These mountains trend north-south and lie approximately 12 miles northwest of the town of Socorro. The mountains cover an area nearly 7 miles long and about 3 miles wide.

Geology

Rock outcrops are well exposed throughout the Lemitar Mountains. Tertiary volcanics consisting largely of andesite and rhyolite, outcrop on the west flank of the mountains. The rhyolite is light gray in color and apparently overlies the dark purple andesite. Progressing eastward approximately 200 feet of Pennsylvanian Magdalena limestone trends north-south and dips 5 to 30 degrees to the west. PreCambrian granite, medium-grained and orange-brown in color, underlies the limestone to the east. The last exposure to the east is a medium-grained, dark-colored diorite also of Pre-Cambrian age.

Magdalena limestone overlies the Pre-Cambrian diorite in at least two locations. In section 5 (?), T. 2 S., R. 1 W., limestone covers an area of approximately 2 acres and also in section 31 (?), T. 1 S., R. 1 W., the area covered by limestone is approximately 2 acres. It is thought that the entire area may have been covered by the Magdalena formation and has since been removed by erosion. In sections 18 (?) and 19 (?), T. 1 S., R. 1 W., pegmatite dikes cut both the granite and diorite.

Quartz veins and quartz mica schist are found locally throughout the diorite exposure. Radioactivity has been found in two dike rock types, both basic and siliceous.

The basic dikes resemble andesite and are very limey in nature. They may vary from less than one inch to more than two feet in width and may reach as much as 200 feet in length in continuous exposure. They outcrop in an area some 6 miles long and

nearly one mile wide. These dikes are dark, dense, fine-grained and occasionally contain pink feldspar (?) crystals up to 2 millimeters in diameter. Locally these dikes appear to be brecciated and then may contain both quartz fragments and quartz-mica schist fragments imbedded in a dark, fine-grained ground mass. In section 5 (?), T. 2 S., R. 1 W., one basic dike contains macroscopic amounts of galena, chalcopyrite, pyrite and possibly uranophane or carnotite. With a background radioactivity of 0.03 milliroentgens, surface readings up to 0.5 milliroentgens were obtained from these dikes in section 5 (?), T. 2 S., R. 1 W., and section 7 (?), T. 2 S., R. 1 W. Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens, locally, however, the dikes were not abnormally radioactive.

The basic dikes strike generally north-south and appear to dip west. The marked linear nature of the dikes may indicate that the intruding material followed older shear zones and fractures patterns. At this date no uranium mineralization has been found in the limestone area.

Radioactive siliceous dikes have been found in section 6 (?), T. 2 S., R. 1 W. These dikes are of limited areal extent and are not nearly so prominent as the basic dikes. The rock resembles a fine-grained quartz and is stained red-brown in color. It is thought that hydrothermal action is responsible for the uranium mineralization present.

The following list of sample analyses indicate the uranium content of surface material obtained from the area.

Serial No.	Field No.	eU%	U %	V205%	CaCo3%
207466	F-15844	0.033	-	-	-
207467	15845	0.049	0.046	<1	-
207468	15846	0.041	0.030	<1	-
207469	15847	0.027	-	-	-
207470	15848	0.039	-	-	-
207471	15849	0.015	-	-	-
207475	16246	0.044	0.036	<1	-
207476	16247	0.20	0.21	<1	-
207477	16248	0.043	0.038	<1	-
207478	16249	0.057	0.040	<1	-
207479	16250	0.021	-	-	-
207480	16501	0.084	0.11	<1	-
207481	16502	0.18	0.21	<1	21.5

If we can be of further service, please feel free to contact us.

Sincerely yours,

/s/ RAYMOND B. STROUD
Raymond B. Stroud, Geologist

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

224 New Customhouse
Denver 2, Colorado

April 5, 1955

Memorandum

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

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3446 (Uranium) Seltzer, Seltzer, Holland and Mages, C.T.C. Group of Claims, Socorro County, New Mexico.

Enclosed are the original and three copies of the report pertaining to the above application.

In view of the extremely low uranium content, narrow width of dikes, and poor showing of the three holes drilled by the applicant, it is not considered sufficiently promising to justify Government participation.

We recommend that the application be denied.

W. M. Traver

W. M. Traver

for E. N. Harshman

Encs.

TRANSMITTED

APR 1955

March 22, 1955

Memorandum

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

From : Superintendent, Southwest Exp. Station, Region III

Subject : Report on Docket DMEA-3446, Seltzer et al, C. T. C. Uranium Group, Socorro County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by John N. Faick, of the Geological Survey and William R. Hardwick of the Bureau of Mines, and the section on Engineering by Hardwick for the above report. I believe the section on Geology already has been submitted.

In August 1954, Lee Seltzer, Oscar Seltzer, Arthur Holland and Irving Hages applied to the Defense Mineral Exploration Administration for Government assistance to explore their uranium-bearing claims in Socorro County, N. Mex. Since the application was made, the applicants have had 3 diamond drill holes drilled to explore the deposit at depth. Samples from surface pits and trenches, and from the drill hole cores gave very low uranium assays. The average grade of all samples was 0.016 percent U_3O_8. Because there seemed little chance of discovering any significant quantity of uranium ore, the DMEA examiners recommended denial of Government aid. I concur with their recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. N. Faick
DMEA-3446
DF

WRStorms:frj

DMEA
DOCKETS
MAR 25 1955
DOCKET SECTION
DENVER OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-3446, Saltzer, Saltzer, Holland and Meade

U. T. C. Uranium Group

Socorro County, New Mexico

John N. Faick, Geologist
U. S. Geological Survey

William R. Hardwick, Mining Engineer
U. S. Bureau of Mines

March 1955

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By John N. Faick[1] and William R. Hendrick[2]

On August 13, 1954, Leo Seltzer, Oscar Seltzer, Arthur H. Holland, and Irving Magna applied for assistance from the Defense Minerals Exploration Administration to explore the C. T. C. group of mining claims for uranium. This claims are located in T. 2 S., R. 1 W., Socorro County, N. Mex., and are near Polvadera Mountain about 12 miles northwest of the town of Socorro.

The application was docketed as DMEA-1445 (Uranium) and was reviewed by John E. Crawford, Bureau of Mines member, and Arthur F. Buckler, Jr., Geological Survey member of the Uranium Commodity Committee. This committee referred the application to the Field Team for additional information.

The C. T. C. claims were examined on December 13 and 14, 1954 by John N. Faick, geologist, Geological Survey, and William R. Hendrick, mining engineer, Bureau of Mines. The Albuquerque Sub-Office and the Denver office of the Atomic Energy Commission were contacted and these offices furnished some information. There has been no production from the C. T. C. claims.

The C. T. C. group of claims is underlain principally by complexly folded and faulted igneous and metamorphic rocks of pre-Cambrian age. These older rocks were cut by two systems of dikes.

1/ Geologist, Geological Survey
2/ Mining Engineer, Bureau of Mines

All uranium mineralization is confined to very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average 12 inches to 18 inches in width.

There is no ore, either measured, indicated or inferred. The numerical average of 20 samples by the applicants was 0.0164 percent U_3O_8. The numerical average of 5 samples by the examining engineer was 0.0164 percent U_3O_8. For "off Plateau" contracts, the minimum average ore grade usually is set at 0.20 percent U_3O_8, with no pay for ore running less than 0.15 percent U_3O_8.

The applicants completed location work by digging location pits or scraping trenches with a bulldozer, and prepared an excellent geological map of a part of the claims before submitting an application for Government assistance. After the application had been submitted the applicants drilled three diamond drill holes to cut the mineralized dike below the surface. The results of these holes does not indicate an increase of U_3O_8 with depth.

The applicants proposed to explore the mineralized dike to a depth of 50 feet by drilling AX size diamond drill holes at several locations. A total of 1,000 feet of drilling was proposed, which the applicants estimate would cost $9,050.00. This is a modification of the initial proposal which was for 20,000 feet of drill hole at an estimated cost of $112,000.00.

The applicants proposed to finance 25 percent of the costs and requested that the Government finance the remaining 75 percent of the costs of this project through DMEA exploration assistance. The applicants are not experienced mining men, but they have employed Clay T. Smith, a competent geologist, to supervise this proposed exploration.

While the commodity, uranium, is of extreme importance at the present time, the grade of ore to be discovered by this project is so low (0.0165 U_3O_8) and the quantity of ore to be discovered is so small that the project is not justified.

It is recommended that the applicant's request (DMEA Docket 3146) for Government assistance to explore the U.T.C. mining claims for uranium be denied.

[illegible]-3446, [illegible], [illegible], [illegible] AND [illegible]
U. T. G. URANIUM GROUP
SOCORRO COUNTY, NEW MEXICO

Engineering Report

By William R. [illegible]
Mining Engineer
U. S. Bureau of Mines

March 1955

DMA-3446, SELTZER, SELTZER, [illegible] AND [illegible]
G. T. C. URANIUM GROUP
SOCORRO COUNTY, NEW MEXICO

CONTENTS

Engineering report	Page
Introduction	1
Acknowledgments	3
Location, topography and climate	3
History and production	5
Ownership and extent	5
Description of the deposit	5
Ore reserves	8
Present status	11
Proposed exploration	13
Estimated cost	14
Proposed financing	14
Conclusions	15
Recommendations	15

ILLUSTRATIONS

Figure		To follow page
1	Location map	3
2	Plan of proposed work	13

INTRODUCTION

On August 13, 1954, Leo Saltzer, Oscar Saltzer, Arthur M. Holland, and Irving Magee applied for assistance from the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, to explore the C. T. C. mining claims near Socorro, N. Mex., for uranium. This application was docketed as DMEA-3446 (Uranium) and referred to the Field Office for an examination and report.

The applicants proposed to explore narrow dikes for uranium ore by drilling holes to intercept these dikes below the surface. The initial application proposed to drill a total of 20,000 feet of drill hole at a cost which the applicants estimated at $112,000. In a letter dated January 13, 1956, addressed to John N. Faick of the Geological Survey and signed by Clay T. Smith, consulting geologist for the applicant, the project was modified to propose 1,000 feet of diamond drill hole at a total cost of $9,085.00.

The C. T. C. mining claims were examined on December 13 and 14, 1954 by John N. Faick, geologist, Geological Survey and William H. Hendrick, mining engineer, Bureau of Mines. Samples were taken at various points along the most prominent dike, where the applicants proposed to locate sample drill holes, and the favorable area was probed with a Geiger counter.

The Pelvadera Mountain area has been examined by representatives of the Atomic Energy Commission's Division of Raw Materials. The Albuquerque sub-office of that organization was consulted to obtain advice and such information as was available relative to the proposed program. A brief description of the deposits and a list of sample analyses pertinent to the area was supplied by Raymond H. Stroud, geologist. A letter dated December 13, 1954, written by Harold D. Wolfe, chief, Albuquerque sub-office of the Atomic Energy Commission to John H. Faick, geologist, Geological Survey, stated in part:

"Maps of many of the uranium bearing dikes on the property are currently being drafted in Denver and will be received here within a few days. These will be forwarded to you as soon as received. The maps show locations of the dikes and the assay results of samples taken. An amenability test on similar material adjacent to the C. T. C. claims is currently being made through the Grand Junction Office. These may prove of value to you so you will be advised of the results when received."

The data mentioned in the above letter has not been received, but it is believed that it would not change the conclusions reached as a result of the field examination.

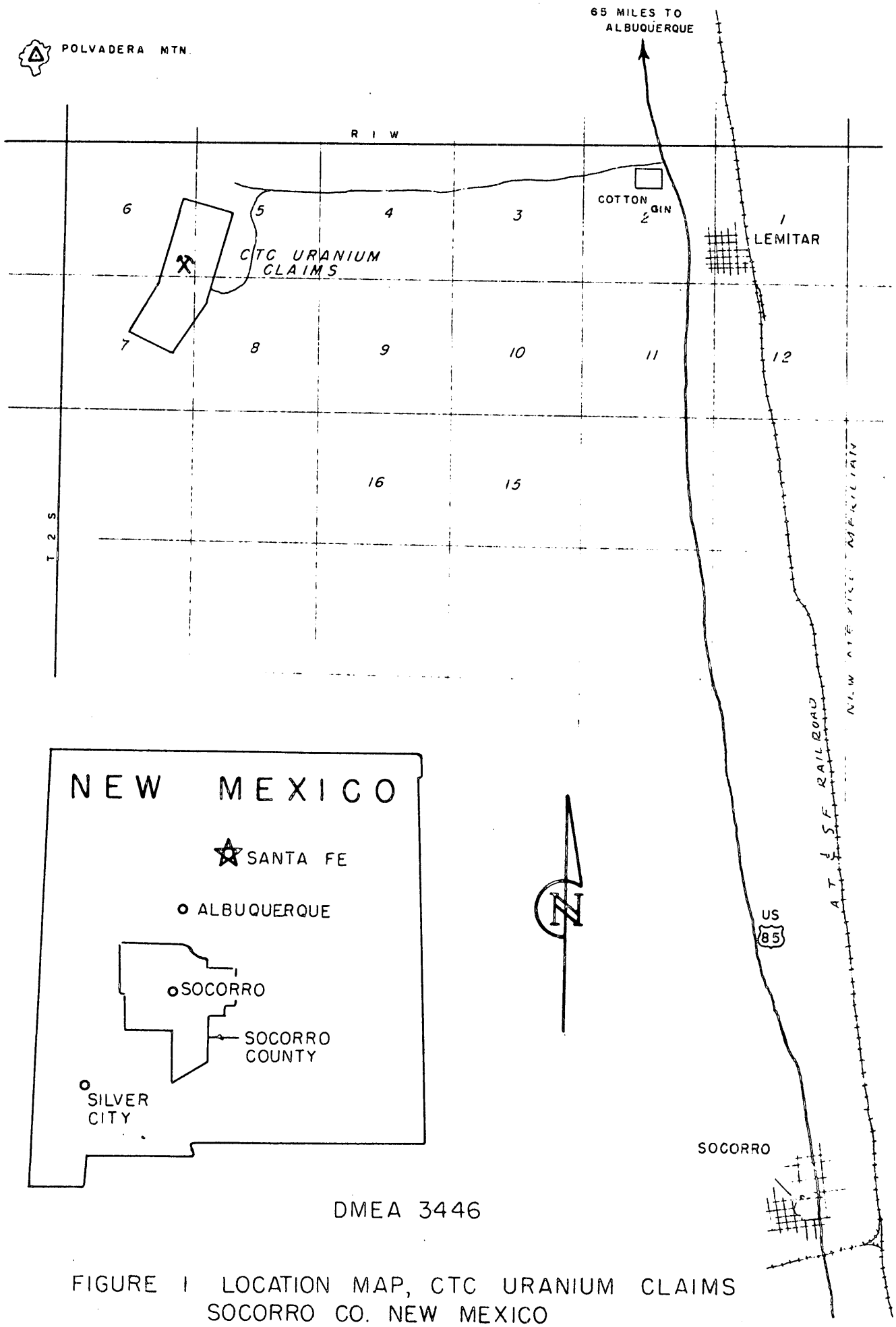
The Denver office of A.E.C. was consulted for information relative to the policy of that organization with respect to the purchase of uranium ore from new districts. This policy was outlined in a letter written to John E. Fadek on November 4, 1954 signed by J. F. Foran, Acting Chief, Denver Exploration Branch, Atomic Energy Commission.

ACKNOWLEDGMENTS

Acknowledgments are due Clay T. Smith, consulting geologist for the applicants, and to Arthur M. Holland and Irving Hagen, applicants, for their courtesy to the examining team and for furnishing information pertinent to the application for Government assistance. Acknowledgment also is made to the Denver Exploration Branch, Atomic Energy Commission, and to the Albuquerque Sub-Office of the same organization for helpful advice and information relative to the proposed program.

LOCATION, TOPOGRAPHY AND CLIMATE

The O. T. C. mining claims are situated in sections 5, 6, 7, and 8, T. 2 S., R. 1 W. (figure 1). They are on the eastern slope of the Lemitar Hills about 18 air miles northwest of Socorro, N. Mex., the nearest town and supply center, and may be reached from that city by driving north on U. S. Highway 85 for 7.6 miles, thence turning west and passing through a gate 0.1 mile north of a cotton gin, and following an unimproved ranch road 4 miles to the claims.



DMEA 3446

FIGURE 1 LOCATION MAP, CTC URANIUM CLAIMS
SOCORRO CO. NEW MEXICO

The nearest railroad station is Lemitar on the Atchison, Topeka and Santa Fe Railroad, 4.5 miles east of the C. T. C. mining claims. The nearest Atomic Energy Commission purchasing depot for uranium ore is at Grants, N. Mex., a distance of 140 miles from the property. Labor is available in Socorro, and materials and supplies are available in Albuquerque 65 miles north of the C. T. C. mining claims.

The area has low to moderate relief with steep-sided canyons exposing older igneous rocks in the western part, and a valley fill of Recent to early Tertiary gravel covering the eastern part of the claims. The altitude of the lower eastern part of the claims is approximately 5,000 feet above sea level, while that of the higher western part is nearly 6,000 feet.

The vegetation is typical of the southwestern desert. Representative plants are creosote bush, mesquite, several species of cacti, and a few scrub cedar. There is no timber suitable for mine use on the claims.

The mean annual temperature[1/] is 60° F. The summer climate is warm but not uncomfortably so, and the winter climate is mild with only an occasional snow storm. The mean annual precipitation is approximately 10 inches, most of which occurs as violent thunder showers of short duration in the months of July and August. Working conditions usually are favorable throughout the year.

1/ U. S. Dept. of Agriculture, Weather Bureau, Climatic Summary of United States, Sec. 29, Southern New Mexico.

HISTORY AND PRODUCTION

All of the C. T. C. mining claims were located in a short period prior to the submission of the application for Government assistance. There has been no ore produced from the claims.

OWNERSHIP AND EXTENT

The 52 C. T. C. mining claims all are recent locations. Arthur M. Halland, one of the applicants, stated that all of the claims either were purchased from the original locators or were located by one of the applicants. The purchase contract was not available in Socorro when the claims were examined. The applications state with respect to the C. T. C. claims, "all recorded with the County Clerk, County of Bernalillo, State of New Mexico". When the claims were examined it was pointed out that the claims were in Socorro County and not Bernalillo County. Clay T. Smith said that the statement in the application was in error and that all of the claims were recorded in Socorro County. The records were not examined.

DESCRIPTION OF THE DEPOSIT

The Lemitar Mountains lie approximately 12 miles northwest of the city of Socorro. The mountains cover an area nearly 7 miles long and 3 miles wide. The C. T. C. uranium claims are situated about 2 miles southeast of Polvadera Mountain, the highest peak in the range.

Near the C. T. C. claims, the most prominent rock is a pre-Cambrian medium-grained, dark-colored diorite. Residual bodies of Magdalena limestone indicate that the area once was covered with that rock. The limestone has been completely eroded from the surface of the claims.

In the immediate vicinity of the claims the pre-Cambrian diorite is cut by several different types of dikes and veins. The geology has been described by Clay T. Smith and is further described by John M. Faick, geologist, Geological Survey, in the separate geological report on this project. Of the several types of dikes and veins mentioned only one type appears to contain a recognizable amount of radioactivity. This dike is described by Hamen N. Stroud as follows:

"The basic dikes resemble andesite and are very limey in nature. They may vary from less than one inch to more than two feet in width and may reach as much as 300 feet in length in continuous exposure. They outcrop in an area 6 miles long and nearly one mile wide. These dikes are dark, dense, fine-grained and occasionally contain pink feldspar (?) crystals up to two millimeters in diameter. Locally these dikes appear to be brecciated and then may contain both quartz fragments and quartz-mica schist fragments imbedded in a dark, fine-grained ground mass. In sections 5 (?) T. 2 S., R. 1 W., one basic dike contains microscopic amounts of galena, chalcopyrite, pyrite and possibly uranophane or carnotite. With a background radioactivity of 0.03 milliroentgens, surface readings

up to 0.5 milliroentgens were obtained from these dikes in section 5 (?), T. 2 S., R. 1 W., and section 7 (?), T. 2 S., R. 1 W. Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens, locally, however, the dikes were not abnormally radioactive."

These dikes further are described by Clay T. Smith as follows:

"Mineralization on the C. T. C. mining claims is almost entirely confined to the very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 2, 3, 4, 8, 11 and 12 with the most favorable spot for the development of minable widths on the southern end of claim 12.

"- - - no uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblend, since the radioactivity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals identifiable."

Discontinuous segments of the most persistent lamprophyre dike can be traced north from the southeast corner of C. T. C. claim No. 12 for the full length of that claim and part of claim

No. 4. This makes a total length of approximately 2,000 feet. However, the longest unbroken segment is probably not over 300 feet and the width probably does not average more than 12 inches. This is the dike that the applicant proposes to explore.

ORE RESERVES

There are no measured or indicated ore reserves, and in view of the extremely low average uranium content of the samples and the very narrow character of the dikes, no ore is inferred.

Samples have been taken from this area by the Atomic Energy Commission, the applicant, and the examining team. In reply to a request for information on the sampling results, Clay T. Smith states as follows:

"In regard to the sample information which you seek, I can furnish the information on the samples which I cut, but I can tell you very little regarding the AEC sampling which was mostly grab samples of a few "hot spots". I am enclosing a listing of the samples 1 through 21 giving both the electrometric and chemical values for U_3O_8 as determined by Chapman and Wood of Albuquerque, New Mexico. The samples were all cut on thin lamprophyre dikes - - -."

"The A.E.C. samples which I show were provided me on a sheet of tracing paper which had a brunton survey of the dikes and the samples plotted as I have indicated them. I have no information as to the thickness, width or material cut. The sample no. F16801

was marked eU which I took to be a chemical analysis and with the value given. The sample no. F15835 was marked eU as I have indicated which I presume means an eleotequatric value. In addition I have another tracing of a similar survey of some of the dikes on the south end of the claims which do not appear on my map and on which are listed the following samples collected by the AEC. As above I have no information regarding width, thickness, nor material samples, except as it is indicated on dikes which were sampled:

F16240 - eU 0.041
F16239 - eU 0.025
F15847 - eU 0.032
F15848 - eU 0.041
F15849 - eU 0.013
F16246 - eU 0.041
F16247 - eU 0.041
F16248 - eU 0.049

The analysis of the samples that were cut by Clay T. Smith are shown in the following table:

Analysis of Samples from C. T. C.
Uranium Claims, Socorro County, N. Mex.
Analysis by Chapman & Weeks
Albuquerque, N. Mex.

Sample No.	Thickness	Percent U_3O_8, Electrometric	Percent U_3O_8, Chemical
1	1.9'	0.005	0.011
2	1.8'	0.005	0.013
4	1.8'	0.005	0.012
5	1.9'	0.005	0.008
6	1.7'	0.010	0.010
7	1.3'	0.005	0.020
8	1.2'	0.005	0.002
9	0.9'	0.030	0.030
10	1.7'	0.005	0.007
11	1.0'	0.005	0.013
12	1.2'	0.005	0,009
13	1.2'	0.010	0.014
14	1.0'	0.010	0.015
15	1.2'	0.010	0.017
16	1.0'	0.015	0.021
17	1.2'	0.020	0.020
18	1.1'	0.040	0.031
19	1.1'	0.015	0.018
20	1.0'	0.020	0.013
21	1.2'	0.030	0.016
Average (numerical)			0.0154

Five samples were taken by the DMEA examining engineer on December 14, 1954. These samples were cut across the dike at approximately the same location as the operators' samples were cut. The results of these samples were as follows with the number of the operators' corresponding sample:

DMEA No.	Width Cut	Applicants No.	Percent U_3O_8 Radiometric	Percent U_3O_8 Chemical
13043	11 inches	20	0.08	0.006
13044	14 inches	17	0.01	0.011
13045	13 inches	11	0.02	0.007
13046	8 inches	9	0.05	0.039
13047	10 inches	6	0.02	0.050
Average (numerical)				0.0154

J. F. Ferrn defines uranium ore as "material containing not less than 0.10 percent U_3O_8 or ore that is minable at a profit. - - - Ores such as those at Palvadera Mountain present special problems with respect to their sale. In general, uraniferous fluorite is not amenable to treatment in any existing plant and is not being purchased unless the uranium content is high."

Three short diamond drill holes have been drilled by the applicant since the application was submitted to the DMEA Field Team. These holes all cut narrow segments of mineralized lamprophyre dikes. The core from these intercepts was tested with a Geiger counter but did not show any increase in radioactivity over dike material at the surface. Therefore, it is believed that the uranium mineralization will not increase with depth.

PRESENT STATUS OF EXPLORATION AND DEVELOPMENT

The C. T. C. Uranium claims are all relatively new locations. No work has been done on them except small open cuts that were dug for location work, several bulldozer trenches, and three diamond drill holes.

The three diamond drill holes were drilled by the applicants in October and November 1954 after the application for DMEA assistance was submitted. The locations of these holes is shown on figure 2. A log of the holes is included with the Geological Report by John A. Faick. The holes were as follows: Hole No. 2, bearing N. 57° E. and dipping 30 degrees, was 282 feet deep. It is described by Clay T. Smith as follows: "- - - Thin stringers of dike material were cut in several places with one very weak 1" zone of mineralization at 232.5'. Apparently the dike does not carry downward strongly at this point or it may be offset eastward in an echelon manner and we did not drill deep enough to cut it. - - -"

Hole 16A, bearing S. 56° W. at minus 40 degrees "- - - cut the dike about 70 feet below the outcrop. It was drilled to a depth of 90 feet and cut the vein at 85' - 88'. Other zones showed stringers of mineralization at about 44 feet and 61.5 feet - - -."

"- - - Hole 16B was drilled from the southwest toward the northeast along the same line as hole 16A and cut the vein about 20 feet higher than hole 16A. The vein showed as stringers of granite and lamprophyre in quartz diorite and again the core did not show appreciable radioactivity, being barely ten times background. - - -"

No other work had been done on the claims when they were examined in December 1954.

PROPOSED EXPLORATION

At first proposing an exploration program involving 20,000 feet of diamond drill hole at an estimated cost of $112,000.00, the applicant has now revised the proposed project to 1,000 feet of diamond drilling at a total estimated cost of $9,050.00. This downward revision was in part the result of the suggestion of the examining engineer and geologist, and in part the result of the poor results obtained from the three holes that were drilled after the original application was submitted.

The applicants have proposed 14 drill holes, AA size, so located that the mineralized lamprophyre dike will be cut in each case at approximately 50 feet below the surface outcrop. The approximate locations of these holes are shown on figure 2 in red.

In addition to the 1,000 feet of drill hole, the applicants have included the cost of 30 surface samples. The location of these samples was not included in the revised application, but it is presumed that they would continue on northward beyond the applicants' samples No. 21 on figure 2. This part of the outcrop was probed with a Geiger counter and did not show more radioactivity than that part which was sampled.

This proposed project would seem reasonable if the mineralization was such as to justify additional work.

ESTIMATED COST OF THE PROJECT

The applicant has proposed costs of his revised program as follows:

	Cost per foot
Direct drilling (AX core, 80% recovery minimum)	$5.00
Cementing, casing, etc.	0.50
Water haulage	.50
Moving and set-up cost	.85
Drillsite preparation	.15
Sampling costs	1.05
Geological expense and supervision	1.00
Total estimated costs	$9.05

Total estimated expense for 1,000 foot program - $9,050.00.

These costs seem high. It is believed that the drilling, including sampling and assay costs, should not exceed $7.50 per foot.

PROPOSED FINANCING

The applicants propose to pay 25 percent of the costs and they request that the Government provide the remaining 75 percent through the provision of Defense Minerals Exploration Administration assistance.

Arthur M. Belland stated that the applicants would be able to provide money for their agreed part of the costs.

CONCLUSIONS

1. The C. I. C. uranium claims are traversed by thin lamprophyre or basic dikes that contain an undetermined uranium mineral in minute quantities.

2. The uranium content of dike material is too low to justify exploration.

3. Geological conditions do not indicate an increase in mineralization with depth. This concept is confirmed by the results of three drill holes.

4. Mineralized dikes are very narrow and indications are that a significant quantity of ore could not be developed.

RECOMMENDATIONS

In view of the extremely low uranium content, narrow width of the dikes, and poor showing of the three holes already drilled, it is believed that further exploration will not discover a significant amount of ore. It is recommended that the applicants' request for assistance be denied.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

DMEA
Dc's Rec'd.
MAR 17 1955
BUREAU OF MINES
Denver, Colorado

March 14, 1955

TRANSMITTED
APR 5 - 1955

Memorandum

To: Field Team, Region III

From: E. M. Hershman

Subject: DMEA Docket 3446 (uranium), Saltzer, Saltzer, Holland, and Hagen, C.T.C. group of claims, Socorro County, New Mexico

Enclosed are the original and 9 copies of a geologic report by John E. Faick, U. S. Geological Survey, covering the above subject application for exploration assistance.

On the C.T.C. claims low grade uranium mineralization is associated with a number of lamprophyre dikes in pre-Cambrian basement rocks. The dikes are generally less than 2 feet wide; strike lengths of 200 to 500 feet have been observed on the surface. The dikes contain galena, chalcopyrite, pyrite, fluorite, magnetite, and an unknown uranium mineral (or minerals), presumably finely divided pitchblende.

The average content of 38 samples taken by the applicant, the AEC, and the DMEA examining team is 0.033 percent U_3O_8. Only two of the samples contained over 0.10 percent U_3O_8.

Because of the narrow low-grade character of the mineralized portions of the lamprophyre dikes on the C.T.C. claims, Faick concludes that Government participation in exploration is not warranted and he recommends that the application be denied.

I concur in this recommendation.

One copy of the brochure is enclosed also.

E. M. Hershman

E. M. Hershman
Member, Field Team

Enclosures (11)

EMHershman:arh

TRANSMITTED

APR 5 - 1955

Box 4126 University Station
Tucson, Arizona

March 10, 1955

MEMORANDUM

TO: Mr. E. N. Harshman

FROM: J. N. Faick

SUBJECT: DMEA Docket 3446 (Uranium) Saltzer, Saltzer, Holland and Magas C.T.C. group of claims, Socorro County, New Mexico.

Enclosed are the original and 10 copies of the Survey's report of examination of the above subject property.

This report recommends denial of Government participation in the applicant's proposal to explore several uraniferous dikes because of the extremely low uranium content of the dikes. The dikes average 18 inches or less in width and the average uranium content of 36 samples is 0.033 percent.

All of the Atomic Energy Commission's data that is available at present is incorporated in the above report.

The brochure is enclosed.

John N. Faick

John N. Faick

JNF:ms
cc: 10 Harshman
1 Storms

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

EXAMINATION REPORT

DMEA-3446, G.P.C. Claims

Socorro County, New Mexico

(Uranium)

by
John N. Faick, Geologist
U.S. Geological Survey

March 7, 1955

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM REGION III

EXAMINATION REPORT
DMEA 3446, C.T.C. CLAIMS
SOCORRO COUNTY, NEW MEXICO

CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
MINERALIZATION	3
URANIUM CONTENT OF DIKES	5
EXPLORATION	9
ORE RESERVES	13
CONCLUSIONS AND RECOMMENDATIONS	13

ILLUSTRATIONS

Figure 1	Location Map	See Engineering Report
Figure 2	Claim Map	" " "
Figure 3	Geology and Claim Map	Following page 2

TABLES

		Page
TABLE I	SAMPLES AND ANALYSES BY ATOMIC ENERGY COMMISSION	6
TABLE II	APPLICANT'S ANALYSIS OF SAMPLES FROM C.T.C. CLAIMS	7
TABLE III	DMEA SAMPLES, C.T.C. CLAIMS	8
TABLE IV	DIAMOND DRILL HOLE LOGS	10-12

INTRODUCTION

On October 20th the Tucson, Arizona office of the Defense Minerals Exploration received an application for Government assistance in exploration of the C.T.C. group of 51 mining claims located in T.2 S., R.1 W. Polvadera Mountains, Socorro County, New Mexico. This application was accompanied by several enclosures, including:

1. A letter dated June 22, from Raymond E. Stroud, A.E.C., to Mr. Gordon Tolliver, Socorro, New Mexico, which letter includes a brief description of the geology and analyses of 13 samples.

2. A geologic report and map of the C.T.C. group of mining claims by Clay T. Smith, Geologist, Socorro, New Mexico.

A letter from John E. Crawford, U.S.B.M., to E. Wm. Ellis, DMEA, indicates that Joseph E. Hosted, representative of the Atomic Energy Commission, has discussed this application with Charles Towle, also of the AEC, and indicates that the area may be of interest to the AEC. The data now available at Tucson indicates that the AEC may have done considerable work on the property; therefore, letters were written to the AEC requesting additional information on the property. Additional data of a general nature was received in reply to these requests. However, locations of AEC samples, geologic maps or results of amenability tests of a sample taken by AEC from the Santillanes claims, which lie adjacent to the south end of the C.T.C. group of claims, have not been received.

Our examination, which was made December 14, 1954 verified the data obtained by the applicant's consulting geologist, and it is doubtful if the additional data, if and when it is obtained from the AEC, will modify our conclusions regarding the property. We are recommending that Government participation in the proposed exploration be denied because of the extremely low uranium content of the so-called ore.

General Geology

The C.T.C. group of claims on Polvadera Mountain in the Lemitar Range is underlain principally by complexly folded and faulted igneous and metamorphic rocks of pre-Cambrian age. Resting unconformably upon the pre-Cambrian are a couple of small patches of carboniferous limestone, each about 2 acres in extent, and a short distance west of the claims is a narrow belt of limestone assigned to the Mississippian. The east boundary of the claim is covered by Tertiary and Recent gravels of the Rio Grande River bolsa deposits, possibly corresponding to the Santa Fe formation. Tertiary volcanics, consisting largely of andesite and rhyolite, outcrop on the west flank of the Lemitar Mountains.

The uranium deposits apparently are confined to dikes (see fig. 3) in the pre-Cambrian basement rocks, which have been described by Smith[1] as follows:

> "Five units are distinguished in the pre-Cambrian rocks of which four are of igneous origin and one represents principally metamorphosed sediments. The oldest rocks are northeast-southwest trending belts of chlorite-hornblende

---

[1] Smith, C.T. Private Report prepared for applicant, p.4, September 11, 1954.

schists with some interbedded quartzite and greenstone. The schists are intimately intruded by quartz diorite and the resulting rock, often with a strong gneissic banding, grades indistinguishably from schist through quartz diorite gneiss to massive quartz diorite. The quartz diorite changes facies toward granite by the addition of quartz and reduction in the amount of dark minerals (principally hornblende and biotite) or toward hornblende gabbro by the absence of quartz.

Massive red to gray granite outcropping mostly in the northwest corner of the property intrudes the quartz diorite. Locally, narrow granite dikes cut the quartz diorite and along one of these in the southwest corner of claim 12 mineralization is present. It is often difficult to determine whether small granite areas represent granitic facies of the quartz diorite or later intrusions of the massive red granite whose contacts have been obscured by subsequent metamorphism. The principal granite mass in the northwest part of the claims is nearly barren of mineralized zones except along its margins and appears to be an unfavorable host rock.

Two systems of dikes cut all the earlier rocks, an older set of diabase dikes, and a younger set of lamprophyre dikes. The diabase dikes strike within a few degrees of N 60° E and dip steeply north or are vertical. The lamprophyre dikes strike predominantly N 10°-15° W and dip about 75°-80° west, although marked irregularities and local flat dips are found. Most of the dikes are from a few feet to several tens of feet in width; diabase probably averages 20 feet wide and lamprophyre, except for the large mass exposed on claim 3, probably averages less than 5 feet. The pattern of the diabase dikes indicates that there are no major north-south fault zones within the area mapped. In a few places diabase apparently offsets lamprophyre where the two dike types intersect, but in most spots the lamprophyre dikes cut across the diabase indicating that they are the youngest pre-Cambrian rocks in the area. All of the uranium mineralization is associated with the lamprophyre dikes."

MINERALIZATION

Mineralization on the C.T.C. mining claims is almost entirely confined to very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized

dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike, and in places have an almost continuous exposure ranging from 200 to 500 feet along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 11 and 12 (see fig. 3) with the most favorable spot for the development of minable widths on the southern end of claim 12.

The lamprophyre dikes consist of hornblende-chlorite, epidote, altered feldspar, hematite, and calcite, with sparse galena, chalcopyrite, and pyrite, and occasional fluorite, magnetite, and biotite. Much of the hematite is altered to limonite and on weathered surface the dikes are a rusty brown color and effervesce readily in dilute acid. No uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblende, since the radioactivity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals identifiable.

These dikes also have been described by Raymond B. Stroud [1], who states that "Radioactivity has been found in two dike rock types, both basic and siliceous." The basic dikes, which he says "resemble andesite and are very limey in nature" presumably are the same as those described by Smith as lamprophyre dikes. The siliceous dikes, which, according to Stroud, "are of very limited areal extent and

[1] Geologist, Atomic Energy Commission, in a letter dated June 22, 1954 to Gordon Tolliver.

are not nearly so prominent as the basic dikes," are thought by this writer to be quartz veins, which are more-or-less brecciated and mineralized.

Uranium content of Dikes

The source of the radioactivity in the dikes on the C.T.C. claims is not definitely known to us but Stroud mentions that the dikes possibly may contain uranophane or carnotite and that "it is thought that hydrothermal action is responsible for the uranium mineralization present." Harold D. Wolfe [1] reports that many of the dikes show a small content of fluorite, and J. F. Foran [2] reported to this writer that the uranium might be present in both the fluorite and the gangue. Smith reports that the hanging wall (west) side of the dikes is the most radioactive, but that the wall rocks are markedly barren except in a few scattered spots which appear to be weakly mineralized.

Testing of the dike outcrops with a geiger counter indicates that values are extremely variable. Stroud reports that with a background radioactivity of 0.03 milliroentgens, surface readings up to 0.5 milliroentgens were obtained from some of the dikes. He reports that "Generally the highest radioactivity ranged from 0.1 to 0.2 milliroentgens; locally, however, the dikes were not abnormally radioactive."

1/ Chief, Albuquerque sub-office Atomic Energy Commission - letter dated November 12, 1954 to E. A. Youngberg.

2/ Acting Chief, Denver Exploration Branch, Letter dated November 4, 1954.

The examiners, using a Nuclear instrument, Model 2610, equipped with a 9-inch probe, obtained background readings ranging from .01 to .05 milliroentgens and found that most of the dikes produced radioactivity measurable on the upper part of the first scale. By placing the probe on the outcrop of the dike and allowing a few minutes elapsed time, readings about midway on the middle scale were obtained in many places and these readings in places were reasonably uniform over considerable parts of the dike outcrops. When taken in this manner, readings of 0.1 to 0.15 milliroentgens were obtained in many places on the dikes. As the geiger readings obtained on the dike were substantially greater than the background readings, it appeared as if the dikes might contain appreciable amounts of uranium; however, this is not the case, as is shown by chemical analysis of samples.

Radiometric and chemical analyses of 13 samples of the dikes were supplied by the AEC but the location of these are not known to the examiners. The analyses are given in Table I.

TABLE I

SAMPLES AND ANALYSES BY ATOMIC ENERGY COMMISSION

Serial No.	Field No.	eU%	U %
207466	F-15844	0.033	-
207467	15845	0.049	0.046
207468	15846	0.041	0.030
207469	15847	0.027	-
207470	15848	0.039	-
207471	15849	0.015	-
207475	16246	0.044	0.036
207476	16247	0.20	0.21
207477	16248	0.043	0.038
207478	16249	0.057	0.040
207479	16250	0.021	-
207480	16501	0.084	0.11
207481	16502	0.18	0.21

In addition to the above samples, analyses are available on 21 samples cut from the dikes at locations shown on Fig. 3. These samples were taken by Clay Smith and analyzed by D. N. Reynolds for Chapman and Woods, Albuquerque, N. Mex. Analyses of these 21 samples are given in Table II.

TABLE II

APPLICANT'S ANALYSES OF SAMPLES FROM C.T.C. CLAIMS, SOCORRO COUNTY, NEW MEXICO

Sample No.	Thickness	Electrometric U_3O_8	Chemical U_3O_8
1	1.9'	.005	.011
2	1.8'	.005	.013
4	1.8'	.005	.012
5	1.9'	.005	.008
6	1.7'	.010	.010
7	1.3'	.005	.020
8	1.2'	.005	.022
9	0.9'	.030	.039
10	1.7'	.005	.007
11	1.0'	.005	.013
12	1.2'	.005	.009
13	1.2'	.010	.014
14	1.0'	.010	.015
15	1.2'	.010	.017
16	1.0'	.015	.021
17	1.2'	.020	.020
18	1.1'	.040	.031
19	1.1'	.015	.018
20	1.0'	.020	.013
21	1.3'	.020	.016
D.D.H. 16 B	-	-	.05

While probing diamond drill hole 16B Smith obtained unusually high radioactivity in the mineralized zone at a depth of 69.9 to 75.5 feet. This especially high radioactivity must have been due to mass effect, rendon accumulation or defective instrumentation because the core yielded radiometric results that were nearly the same as those obtained in other parts of the mineralized zone, and chemical analyses of the split core showed the presence of 0.05 percent uranium.

Five check samples were taken by W. H. Hardwick, Engineer, U. S. Bureau of Mines, the locations of which are shown on Fig. 3, and the analyses of which are given in Table III.

TABLE III

DMEA SAMPLES, C.T.C. CLAIMS

No.	Width in Inches	Equivalent U_3O_8	Chemical U_3O_8
13043	11	0.01	0.005
13044	14	0.01	0.011
13045	12	0.02	0.007
13046	8	0.05	0.039
13047	10	0.02	0.020

Inspection of Tables I, II and III reveals that of the 38 samples of which analyses are available only 2 samples contained uranium measurable in tenths of one percent. The numerical average of all the 38 samples is 0.033 percent uranium or about one-tenth as much uranium as an off-plateau deposit should have to become a successful producer.

As the uranium occurs in dikes averaging not over 18 inches wide, and averaging only 11 inches wide where sampled by DMEA, it does not appear that the deposit is significant in either size or grade. Stroud reports that the dikes are not unusually radioactive, a fact that is amply supported by the assays, including those submitted by the applicant's consulting geologist.

EXPLORATION

The applicants, through the efforts of their consulting geologist, have made a careful study of the property by geological mapping (see fig. 3), sampling and diamond drilling. The DMEA examiners reviewed all of the findings of the applicants' geologist and found the data was accurate, reliable and very much as represented. The drill cores were inspected and checked with a Geiger counter, and 5 samples taken from the dikes verified the sample data provided by the applicants' geologist and the AEC.

Smith's logs of the 3 holes drilled by the applicants are given in Table IV, and the locations of the holes are shown on Fig. 3.

TABLE IV

DIAMOND DRILL HOLE LOGS

Hole No. 2: Bearing N 57° E @ -30°.

0'-78'		Hole collared in soil and decomposed quartz diorite; casing to 30'; no core from this interval.
78'-84'	1.7' core	-28% recovery; coarse grained quartz diorite, mafic facies, with ½" lamprophyre dikes nearly parallel to the hole replaced by calcite.
84'-94'	6.9' core	-69% recovery; quartz diorite as above; from 92'-94' granitic facies with 1" lamprophyre veinlet @ 94'.
94'-104'	1.8' core	-18% recovery; mafic facies quartz diorite as above.
104'-110'	0.9' core	-15% recovery; quartz diorite as above.
110'-132'	5.3' core	-24% recovery; quartz diorite as above with calcite and lamprophyre veinlets; calcite is leached yielding shattered and broken ground when cored.
132'-135'	0.8' core	-27% recovery; quartz diorite as above with small fragment of granite recovered @ 133.5'; dike???
135'-142'	4.9' core	-70% recovery; quartz diorite as above; lamprophyre dikelets 1" thick @ 138' and 142'.
142'-220'	35.7' core	-46% recovery; quartz diorite as above; lamprophyre and diabase veinlets less than ½" thick more abundant near 200'; lost water at 169'; much of the core badly broken.
220'-229'	7.9' core	-88% recovery; diabase dike to 225' with quartz diorite stringers at 221' and 222'; granitic facies quartz diorite 225'-229'.
229'-232'	2.5' core	-81% recovery; quartz vein from 229'-230' then normal quartz diorite.
232'-235'	2.6' core	-87% recovery; quartz diorite as above; at 232.5' 1" mineralized lamprophyre dike; ½" quartz veinlets between 234' and 235'.
235'-243'	8.0' core	-100% recovery; quartz diorite as above; ½" diabase stringer @ 239.5'.
243'-251'	7.7' core	-96% recovery; quartz diorite as above; ½" calcite stringer @ 247.5'.
251'-256'	4.9' core	-98% recovery; quartz diorite as above; from 253.3'-254.2' very fine-grained quartz diorite.
256'-282' (Bottom)	23.5' core	-90% recovery; quartz diorite as above; 258.5' 1" granite dike; between 261' and 263', ½"-½" carbonate stringers nearly parallel the hole; from 266'-267' lamprophyre stringers; calcite veinlet at 261'.

TABLE IV

DIAMOND DRILL HOLE LOGS
(Continued)

Hole No. 16A: Bearing S 56° W @ -40°.

0'-17'		Hole collared in decomposed quartz diorite; cased to 17', no core; probe in hole indicated mineralization from 10.1'-11.9'.
17'-44'	19.7'	core-73% recovery; coarse grained quartz diorite; 1" granite dike @ 26'; other thin granite stringers from 17'-27' and @ 43.2'; very weak mineralization (?) @ 18.5'.
44'-57'	12.5'	core-96% recovery; quartz diorite as above, badly shattered @ 56'; granite dikes; 2" @ 44.7', ¼" @ 45.6', ½" @ 46.1', 4" @ 47', 1/16" @ 48.4', ½" @ 50'; 3" diabase dike @ 51.5'.
57'-62'	4.5'	core-90% recovery; quartz diorite as above; from 59.7'-60.7' diabase with ¼" granite stringers; @ 61.5' 1/8" limonite stained schistose quartz lamprophyre stringer.
62'-75'	11.4'	core-88% recovery; quartz diorite as above; diabasic inclusions or replacements from 71'-75'; ¼" granite stringer @ 71.5'.
75'-85'	9.1'	core-91% recovery; quartz diorite as above; granite dikes; ¼" @ 76', ¼" @ 80', 3/4" weakly mineralized @ 80.5', ¼" @ 82'; @ 84.5' ½" diabase dike.
85'-90' (Bottom)	4.1'	core-82% recovery; quartz diorite as above; weakly mineralized granite and lamprophyre dikes: ¼" @ 85', ½" @ 86', 1" @ 87'.

Mineralization in Hole 16A

10.1'-11.9'	Weak (0.01-0.05%)
43.4'-44.2'	Very weak
61.3'-61.7'	Very weak
85.5'-87'	Weak

TABLE IV

DIAMOND DRILL HOLE LOGS

(Continued)

Hole No. 16B: Bearing N 56° E @ -50°.

0'-12'	Hole collared in soil and decomposed quartz diorite, granitic facies; casing to 12', no core.
12'-37'	7.7' core-31% recovery; alternating fine-grained and coarse grained granitic facies of the quartz diorite; from 31'-33' granite dike.
37'-50'	10.6' core-81% recovery; normal facies coarse grained quartz diorite with thin hematite and limonite partings nearly parallel to the core; ¼" granite lens @ 38'.
50'-54'	2.3' core-57.5% recovery; quartz diorite as above; ¼" diabase stringer @ 50'; ½" schistose quartz lamprophyre @ 50.5'.
54'-67'	8.3' core-64% recovery; quartz diorite as above; 1/8" hematite stained quartz lamprophyre dike @ 54.5'.
67'-71'	3.3' core-82.5% recovery; quartz diorite as above; hematite stained lamprophyric veinlets @ 67.5' and 68'; from 69.5'-70' mineralized lamprophyre dike injected with granite stringers.
71'-75'	2.8' core-70% recovery; quartz diorite as above; mineralized granite stringers less than ½" thick @ 71.5', 71.8', 71.9', and 72'; mineralization dies out in core by 75'.
75'-85' (Bottom)	8.0' core-80% recovery; quartz diorite as above; a few thin schistose quartz lamprophyre partings between 75' and 78'; very weak mineralization @ 82.3'.

Mineralization in Hole 16B

69.9'-75.5'	Good (Commercial?)
79.5'	Weak stringer
82.2'-83.1'	Weak stringer

The applicants' original proposal to DMEA was to drill 20,000 feet of diamond drill holes at a cost of $112,000 but this later was revised downward to about $25,000. At the time of the examination it was apparent that the property did not justify expenditures of this amount, and when this was brought to the attention

of the applicants they agreed that a basic program of about 1,000 feet of drilling would determine if the property was of sufficient merit to be of further interest to them. Accordingly, Smith submitted new proposals for the applicant. The new revised program was to consist of drilling 14 short holes (shown on Fig. 2 and 3) to intersect the dikes 50 feet below the outcrop, the total amount of drilling to be 1,000 feet, at a cost of $9,050.

None of the proposed exploration appears to be justified because of the extremely low uranium content of the dikes.

ORE RESERVES

No effort was made to estimate reserves because the mineralized dikes contain insufficient uranium to be ore under any known or foreseeable conditions.

CONCLUSIONS AND RECOMMENDATIONS

The uraniferous dikes on the C.T.C. claims in Palvodera Mountains, New Mexico have an average width of 18 inches or less, and are a few hundred feet in strike length. The uranium content of the dikes is about 0.033 percent as indicated by the numerical average of 38 analyses. The uranium is thought to be present as pitchblende or uraniferous fluorite and, therefore, is believed to be of hydrothermal origin.

It is recommended that Government participation in exploration of the deposits be denied because of the exceedingly low uranium content of the dikes.

Denial

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225

224 New Customhouse
Denver 2, Colorado

AIR MAIL

November 21, 1957

Mr. Karl Ruhe, Valuation Engineer
U. S. Treasury Department
Internal Revenue Service
P. O. Box 1193
Chicago 90, Illinois

Re: Docket DMEA-3446 (Uranium)
Seltzer, Seltzer, Holland, and Mages
(C. T. C. Uranium group)
Socorro County, New Mexico

Dear Mr. Ruhe:

This will acknowledge receipt of your letter, dated November 19, 1957, requesting information on the C. T. C. Mining Claims.

On August 13, 1954, Leo Seltzer, Oscar Seltzer, Arthur M. Holland, and Irving Mages applied for DMEA assistance to explore the C. T. C. group of mining claims for uranium. These claims are located in Township 2 South, Range 1 West, Socorro County, New Mexico.

The application was docketed DMEA-3446, and the property was examined on December 13 and 14, 1954 by John N. Faick, Geologist, Geological Survey, and William R. Hardwick, Mining Engineer, Bureau of Mines. The field examiners submitted a joint report in March, 1955. This report of examination would probably be available to you at the Washington Office, DMEA, from Mr. C. O. Mittendorf, Administrator.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

HMC:jy
cc: Sec. Op. Comm. - 2 } w/copy of ltr. dtd.
Docket 3446 } 11/19/57
Chron.

U. S. TREASURY DEPARTMENT
INTERNAL REVENUE SERVICE
DISTRICT DIRECTOR
P. O. Box 1193
CHICAGO 90, ILLINOIS

November 19, 1957

IN REPLY REFER TO
AUD:FA:EV:KR

AIR MAIL

DMEA
DEPARTMENT OF THE INTERIOR
NOV 20 1957
REGION III
DENVER, COLORADO

Defense Minerals Exploration Administration
Region III
Bureau of Mines
224 New Customhouse Bldg.
Denver 2, Colorado

Dear Sirs:

In connection with an investigation for federal income tax purposes, the following information is requested:

The date of field examination and written report regarding a request for DMEA assistance on C.T.C. Mining Claims Nos. 1-51 situated in Sections 5, 6, 7, and 8, Township 2 South, Range 1 West, all in the County of Socorro, State of New Mexico.

If the final report is available for examination, please inform me where I may obtain access to it.

Yours very truly,

Karl Ruhe

Karl Ruhe
Valuation Engineer

KR/elh

CPC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by

CLAY T. SMITH
GEOLOGIST

Attest:
Clay T. Smith
September 11, 1954
Socorro, New Mexico

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by
Clay T. Smith
Geologist

SUMMARY AND CONCLUSIONS

The CTC mining claims comprise a block of 51 claims nearly 2 miles in length and 3/4 of a mile wide. They occupy part of sections 5, 6, 7, and 8, T 2 S, R 1 W, New Mexico Base and Meridian. The claims are under option to Oscar Seltzer and associates and all the adjacent land is covered by additional mining locations. Scant desert vegetation covers the moderately steep slopes and broad bajada surfaces of the Lemitar Mills on which the claims are located.

The principal rock outcrops are pre-Cambrian igneous and metamorphic rocks. The mineralization is confined to lamprophyre dikes which cut all the earlier pre-Cambrian rocks and are in turn overlain by Carboniferous limestone or undifferentiated Tertiary-Quaternary gravel deposits. The mineralization favors the hanging wall side of the thinner lamprophyre dikes which strike a few degrees west of north dipping steeply west; such dikes are best developed in quartz diorite country rock.

The principal minerals in the lamprophyre dikes are very fine-grained chlorite, epidote, calcite, and completely altered feldspar; the calcite content and the fine-grained texture sharply distinguish the dikes from the enclosing wall rocks. No uranium minerals have been

identified although grab samples have assayed as high as 0.248% U3O8 chemically. The surface exposures of the dikes are thin and often discontinuous and the only hope for commercial exploitation lies in the development of higher grade zones within the dikes or in the discovery of wider zones of mineralization. The continuity of mineralization which has been established by a small amount of surface sampling suggests that higher grade zones may be concealed beneath the surface or in areas of poor outcrops. In afew places dikes intersect or develop en echelon patterns and such areas show promise of developing minable thicknesses.

The mineralization is of sufficient continuity to warrant additional work to prove or disprove the presence ofcommercial ore. Diamond drilling offers the most feasible method of testing the area until more information concerning the distribution of the values can be gained. Approximately 10,000 feet of diamond drilling supplemented by additional detailed mapping and surface sampling should permit conclusive evaluation of the property. A minimum expenditure of $75,000 is indicated by the showings already exposed and if exploration is favorable three to four times this amount should be budgeted for development work.

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by
Clay T. Smith
Geologist

INTRODUCTION

The CTC mining claims are located in sections 5, 6, 7, and 8, T 2 S, R 1 W, New Mexico Base and Meridian. The claims cover the eastern slopes of the Lemitar Hills about one mile west of U. S. Highway 85 and are easily accessible by ranch road. The nearest town and supply center is Socorro ten miles to the south.

Fifty-one claims are included in the block which is under option to Oscar Seltzer and associates of Chicago and Los Angeles. Adjoining areas have been located by several individuals and there are three claims in the center of the block which are not held by Seltzer.

The area has low to moderate relief with steep-sided, deep canyons in the western part exposing the older rocks and a broad sloping bajada surface masking the geology to the east. On the bajada surface the drainage is braided, but in the steeper canyons the major drainage has been superposed from an earlier meandering pattern. Vegetation is scant; typical plants are creosote bush, several species of cacti, mesquite, scrub cedar or juniper, and sparse grasses.

GEOLOGY

Rocks exposed on the CFC mining claims range in age from pre-Cambrian to Recent. The principal outcrops are complexly folded and faulted metamorphic and igneous rocks usually assigned to the pre-Cambrian in this part of New Mexico. The eastern margin of the claims is covered with gravels which may range in age from early Tertiary to Recent and are commonly referred to the late Tertiary Santa Fe formation. These materials are considerably younger than any of the mineralized bodies and so were not differentiated on the geologic map except to indicate where they mask possible mineralized zones.

Five units are distinguished in the pre-Cambrian rocks of which four are of igneous origin and one represents principally metamorphosed sediments. The oldest rocks are northeast-southwest trending belts of chlorite-hornblende schists with some interbedded quartzite and greenstone. The schists are intimately intruded by quartz diorite and the resulting rock, often with a strong gneissic banding, grades indistinguishably from schist through quartz diorite gneiss to massive quartz diorite. The quartz diorite changes facies toward granite by the addition of quartz and reduction in the amount of dark minerals (principally hornblende and biotite) or toward hornblende gabbro by the absence of quartz. Time did not allow detailed mapping of the quartz diorite facies changes and in some areas (particularly on claims 41, 1, and 2) contacts

between metasediments and quartz diorite are arbitrarily drawn. There is some suggestion that mineralization favors the more granitic facies of the quartz diorite as a host rock, but there is too little sampling as yet to determine the quantitative value of such an observation.

Massive red to gray granite outcropping mostly in the northwest corner of the property intrudes the quartz diorite. Locally, narrow granite dikes cut the quartz diorite and along one of these in the southwest corner of claim 12 mineralization is present. It is often difficult to determine whether small granite areas represent granitic facies of the quartz diorite or later intrusions of the massive red granite whose contacts have been obscured by subsequent metamorphism. The principal granite mass in the northwest part of the claims is nearly barren of mineralized zones except along its margins and appears to be an unfavorable host rock.

Two systems of dikes cut all the earlier rocks, an older set of diabase dikes, and a younger set of lamprophyre dikes. The diabase dikes strike within a few degrees of N 60° E and dip steeply north or are vertical. The lamprophyre dikes strike predominantly N 10°-15° W and dip about 75°-80° west, although marked irregularities and local flat dips are found. Most of the dikes are from a few feet to several tens of feet in width; diabase probably averages 20 feet wide and lamprophyre, except for the large mass exposed on claim 3, probably averages less than 5 feet. The pattern of the diabase dikes indicates

that there are no major north-south fault zones within the area mapped. In a few places diabase apparently offsets lamprophyre where the two dike types intersect, but in most spots the lamprophyre dikes cut across the diabase indicating that they are the youngest pre-Cambrian rocks in the area. All of the uranium mineralization is associated with the lamprophyre dikes.

Resting on the pre-Cambrian rocks with the profound unconformity are a few small patches of limestone of probable Carboniferous age. The limestone beds have been extremely brecciated, strongly silicified, and locally, are the host rocks for narrow quartz veins containing minor amounts of barite, galena, chalcopyrite, and calcite. A few fossils are present and these badly altered outcrops may be related to a narrow belt of Mississippian limestone outcropping west of the CFC claims. No uranium has been detected in the many prospect pits sunk on the quartz veins.

The gravels which mask outcrops along the eastern margin of the area are composed primarily of boulders of the older rocks. There is a large amount of volcanic debris derived from the Middle Tertiary volcanic rocks which are extensively exposed to the north, south, and west of the Lemitar Hills. Included in the area mapped as gravel are a few outcrops of andesite tuff and breccia which probably represent remnants of the thick volcanic sequence.

MINERALIZATION

Mineralization on the CTC mining claims is almost entirely confined to the very narrow lamprophyre dikes with northerly strikes and steep westerly dips. The most consistently mineralized dikes average from 12 inches to 18 inches in width and seldom exceed 2 feet. Individual dikes are often lenticular, pinching and swelling abruptly along the strike. En echelon arrangements occur particularly where the dikes die out or become too thin to follow. The most persistent zones mapped lie on claims 2, 3, 4, 8, 11, and 12 with the most favorable spot for the development of minable widths on the southern end of claim 12.

The lamprophyre dikes consist of hornblende-chlorite, epidote, completely altered feldspar, hematite, and calcite, with sparse galena, chalcopyrite, and pyrite, and occasional fluorite, magnetite, and biotite. Much of the hematite is altered to limonite and on weathered surface the dikes are a rusty brown color and effervesce readily in dilute acid. No uranium minerals are visible in hand specimen and none have yet been identified microscopically. Presumably the uranium is present as very finely divided pitchblende, since the radio-activity of most of the mineralized areas is much too strong to be accounted for by trace-element impurities in the minerals indentifiable. Rough determinations with a geiger counter suggest that the western or hanging wall side of the dikes is somewhat more mineralized than the remainder of the dike; the wall

rocks are markedly barren except in a few scattered spots where the granitic facies of the quartz diorite seems to be weakly mineralized along the dikes.

Surface testing by geiger counter indicates that values are extremely variable and the few samples taken by the Atomic Energy Commission representatives seem to bear this out. However, 20 samples cut at 50 to 100 foot intervals over 300 feet of mineralized dike in the southern part of claim 12 clearly indicate an uniformity of mineralization which warrants further investigation.

PROPOSED EXPLORATION PROGRAM

The aims of any further exploration on the CRC mining claims would be to attempt to develop areas containing higher grade mineralization as well as delineating those zones along the dikes which would be wide enough to mine. It is encouraging to note that of the samples cut, the better grades of material are associated with the areas of thickening or intersection of the dikes. Parts of the area north of the bulldozer trench between samples 7 and 9 show geiger counter values which are two or three times as high as those shown in the areas where the samples were cut. It should be noted that in cutting samples 1 through 21 no attempt was made to sample the "hot spots". These samples were taken to determine continuity of mineralization which is established without doubt.

Further exploration should be divided into two parts which can be carried on concurrently if desired . First,

the program of surface sampling and mapping should be extended to the southern half of the claims where grab samples on "hot spots" have indicated commercial ore showings. Likewise, the surface sampling should be extended to the north and all dikes with 200 to 300 feet of surface continuity such as those exposed on claims 2 and 7 and on claims 3 and 8 should be trenched and tested at regular intervals. Additional spot samples are probably not worth the expense, although a few samples might be taken from the large lamprophyre dike exposed over much of the length of claim 41; this dike is similar in structure, attitude, and composition to the narrower mineralized dikes and although it shows little anomaly on a geiger counter a few samples tested chemically might be warranted.

Second, drilling to explore the area below the surface exposures should be undertaken in those areas where overlap or intersection of dikes gives promise of minable thicknesses. Seventeen diamond drill hole profiles are shown on the accompanying map to indicate where test holes might reasonably be located to investigate the showings on claims 4, 11, and 12. Table I gives a summary of the proposed diamond drilling program. More than half of the holes are expected to encounter more than one mineralized dike and in some cases explore a mineralized zone of considerable potential width. The order of numbering the profiles does not necessarily indicate the order of drilling the profiles and the results obtained from the first few profiles drilled might

TABLE I

SUMMARY OF PROPOSED DIAMOND DRILLING

Drill Hole	Bearing	Angle of hole below horizontal	Depth to first mineralization	Depth to main vein	Total Depth
1	N 53° E	45°	120'	150'	210'
2	N 53° E	30°	100'	250'	315'
3	N 53° E	25°	65' or 190'	380'	415'
4	N 53° E	45°	100'	150'	200'
5	N 53° E	45°	---	120'	165'
6	N 53° E	45°	80'	110'	160'
7	N 53° E	45°	---	110'	160'
8	S 59° W	20°	130'	170'	200'
9	S 59° W	20°	145'	180'	210'
10	S 59° W	20°	130'	155'	185'
11	S 59° W	20°	---	120'	170'
12	S 59° W	45°	---	110'	190'
13	N 59° E	45°	60'	130'	150'
14	N 59° E	30°	75'	190'	225'
15	N 56° E	45°	---	185'	240'
16	S 56° W	45°	---	110'	190'
17	S 56° W	45°	---	115'	200'
			Total estimated footage		3985'

force revision of the entire proposal. The profiles are spaced at 150 foot intervals along the strike of the dikes and the holes are selected to explore a zone about 100 feet below the outcrop on each profile. If the results from the first hole drilled on any profile are encouraging, additional holes may be drilled from the same set-up for further information.

Profile 2 is recommended for first exploration since this profile explores two mineralized zones as well as a higher grade and thicker portion of the principal mineralized dike. Profiles 1 and 3 should then be drilled and evaluation of the results would determine additional exploration. Assuming that the indications are favorable, they may point to the drilling of profiles 15, 16, and 17 next, or 4, 5, and 6. If the results were unfavorable, it might be desirable to move to the other end of the mineralized zone and drill holes 14, 13, 12, and 11 in that order and then evaluate the results. Profiles 7, 8, 9, and 10 should be drilled last unless the surface sampling suggests that these should be given earlier attention. If all 17 profiles are drilled approximately 4000 feet of drilling should be contracted for, although 2000 feet with option for the additional 2000 feet could be negotiated, if desired. On the latter basis profiles 1, 2, 3, 4, 14, 13, 12, and 11 could be drilled with the initial 2000 feet contract and the remainder utilized if favorable results are obtained.

A reconnaissance examination of the southern part of the claims did not suggest as much continuity of dikes as is indicated on the accompanying map, although detailed mapping would be necessary to establish the relations. An additional 2000 to 4000 feet of drilling should provide sufficient information to evaluate the southern part of the claims and perhaps as much additional drilling might be necessary should some of the shorter dike exposures merit further investigation. Approximately 10,000 feet of drilling coupled with an extensive surface sampling and mapping program should provide adequate data regarding the potentialities of the property. The minimum cost for such exploration should not exceed $75,000 to $100,000 although these figures would vary considerably depending upon the results of the exploration as it progressed. If favorable indications warrant additional drilling or underground exploration, a budget of not less than $250,000 should be provided.

CTC MINING CLAIMS, SOCORRO COUNTY, NEW MEXICO

PRELIMINARY REPORT ON URANIUM MINERALIZATION

by

CLAY T. SMITH
GEOLOGIST

Attest:
Clay T. Smith
September 11, 1954
Socorro, New Mexico

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The principal rock outcrops are pre-Cambrian igneous and metamorphic rocks. The mineralization is confined to lamprophyre dikes which cut all the earlier pre-Cambrian rocks and are in turn overlain by Carboniferous limestone or undifferentiated Tertiary-Quaternary gravel deposits. The mineralization favors the hanging wall side of the thinner lamprophyre dikes which strike a few degrees west of north dipping steeply west; such dikes are best developed in quartz diorite country rock.

The principal minerals in the lamprophyre dikes are very fine-grained chlorite, epidote, calcite, and completely altered feldspar; the calcite content and the fine-grained texture sharply distinguish the dikes from the enclosing wall rocks. No uranium minerals have been

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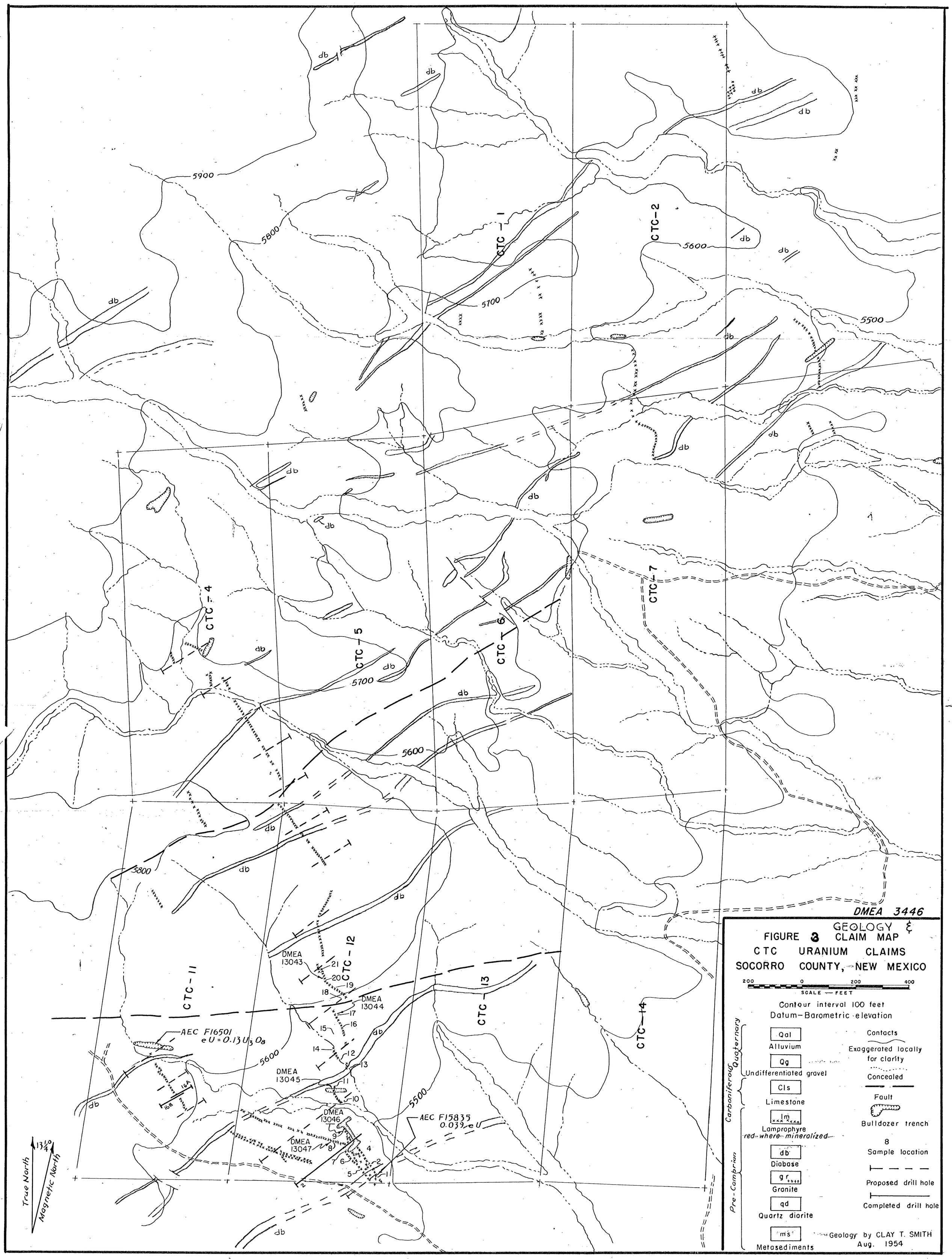
DEPARTMENT OF THE INTERIOR
~~Defense Electric Power Administration~~
~~WASHINGTON 25, D.C.~~

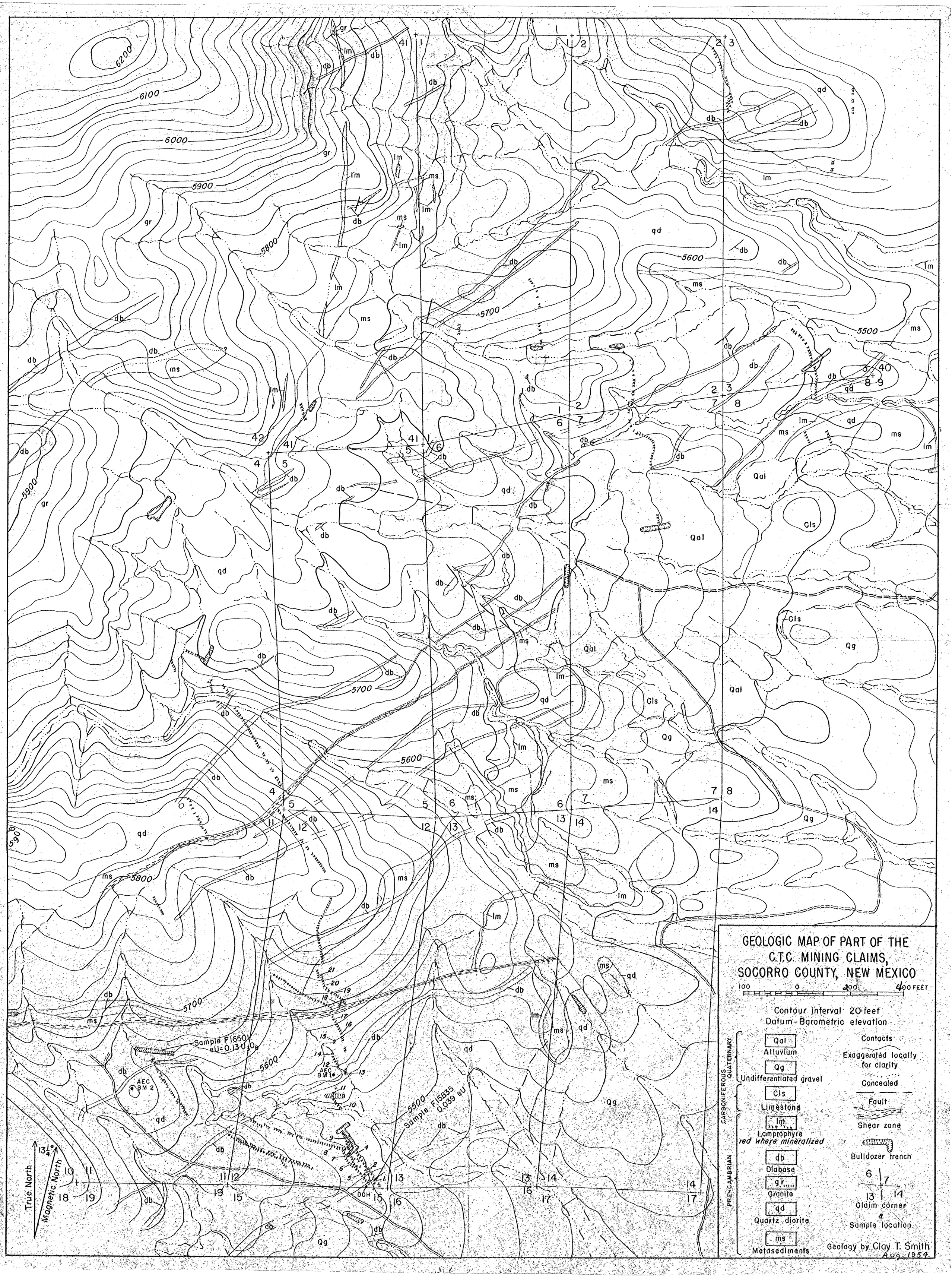
OFFICIAL BUSINESS
GEOLOGICAL SURVEY

Federal Center
Denver 2, Colorado

Mr. E. William Ellis

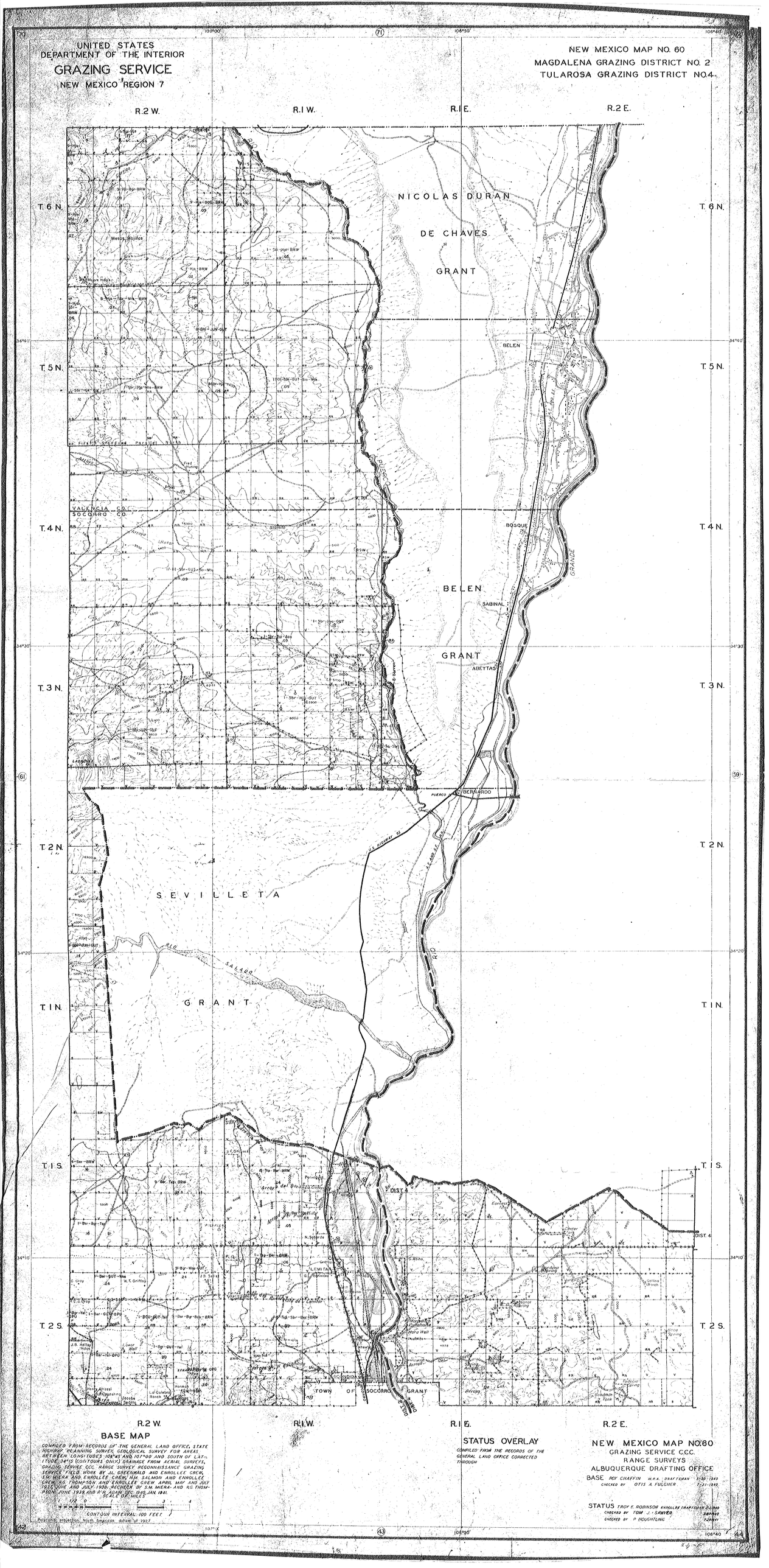
Defense Minerals Exploration Administration
Interior Building, Room 4640
Washington 25, D. C.


DMEA 3446
GEOLOGY & CLAIM MAP
FIGURE 3
CTC URANIUM CLAIMS
SOCORRO COUNTY, NEW MEXICO
200 0 200 400
SCALE — FEET
Contour interval 100 feet
Datum-Barometric elevation
Quaternary
Qal
Alluvium
Qg
Undifferentiated gravel
Carboniferous
Cls
Limestone
Pre-Cambrian
lm
Lamprophyre
red where mineralized
db
Diabase
gr
Granite
qd
Quartz diorite
ms
Metasediments
Contacts
Exaggerated locally for clarity
Concealed
Fault
Bulldozer trench
8
Sample location
Proposed drill hole
Completed drill hole
Geology by CLAY T. SMITH
Aug. 1954
True North
Magnetic North
13¼°
CTC-1
CTC-2
CTC-4
CTC-5
CTC-6
CTC-7
CTC-11
CTC-12
CTC-13
CTC-14
DMEA 13043
DMEA 13044
DMEA 13045
DMEA 13046
DMEA 13047
AEC F16501
eU = 0.13 U3O8
AEC F15835
0.039 eU
5900
5800
5700
5600
5500


GEOLOGIC MAP OF PART OF THE
C.T.C. MINING CLAIMS,
SOCORRO COUNTY, NEW MEXICO
100 0 200 400 FEET
Contour interval 20 feet
Datum-Barometric elevation
CARBONIFEROUS QUATERNARY
Qal
Alluvium
Qg
Undifferentiated gravel
Cls
Limestone
PRE-CAMBRIAN
lm
Lamprophyre
red where mineralized
db
Diabase
gr
Granite
qd
Quartz diorite
ms
Metasediments
Contacts
Exaggerated locally for clarity
Concealed
Fault
Shear zone
Bulldozer trench
Claim corner
Sample location
Geology by Clay T. Smith
Aug. 1954
True North
Magnetic North
13 1/4°
Sample F1650
eU=0.13 U3O8
Sample F1583B5
0.039 eU
AEC BM 1
AEC BM 2
DDH
6200
6100
6000
5900
5800
5700
5600
5500

UNITED STATES
DEPARTMENT OF THE INTERIOR
GRAZING SERVICE
NEW MEXICO REGION 7

NEW MEXICO MAP NO. 60
MAGDALENA GRAZING DISTRICT NO. 2
TULAROSA GRAZING DISTRICT NO. 4



R.2 W. R.1 W. R.1 E. R.2 E.

BASE MAP

COMPILED FROM RECORDS OF THE GENERAL LAND OFFICE, STATE HIGHWAY PLANNING SURVEY, GEOLOGICAL SURVEY FOR AREAS BETWEEN LONGITUDES 106°45' AND 107°00' AND SOUTH OF LATITUDE 34°15' (CONTOURS ONLY) DRAINAGE FROM AERIAL SURVEYS, GRAZING SERVICE CCC. RANGE SURVEY RECONNAISSANCE GRAZING SERVICE FIELD WORK BY JL GREENFIELD AND ENROLLEE CREW, S.M. MIERA AND ENROLLEE CREW, H.H. SALMON AND ENROLLEE CREW, R.G. THOMPSON AND ENROLLEE CREW APRIL, MAY AND JULY 1937, JUNE AND JULY 1938. RECHECK BY S.M. MIERA AND R.G. THOMPSON JUNE 1939 AND P.G. ADAMS DEC. 1940 JAN. 1941.

SCALE OF MILES

1/2 0 1 2 3 4

CONTOUR INTERVAL 100 FEET

Polyconic projection North American datum of 1927

STATUS OVERLAY

COMPILED FROM THE RECORDS OF THE GENERAL LAND OFFICE CORRECTED THROUGH

NEW MEXICO MAP NO. 60

GRAZING SERVICE C.C.C.
RANGE SURVEYS
ALBUQUERQUE DRAFTING OFFICE

BASE ROY CHAFFIN W.P.A. DRAFTSMAN 1-30-1940
CHECKED BY OTIS A. FULCHER 7-31-1940

STATUS TROY F. ROBINSON ENROLLEE DRAFTSMAN 2-6-1940
CHECKED BY TOM J. SAWYER 3-8-1940
CHECKED BY P. HOUGHTLING 2-20-1941

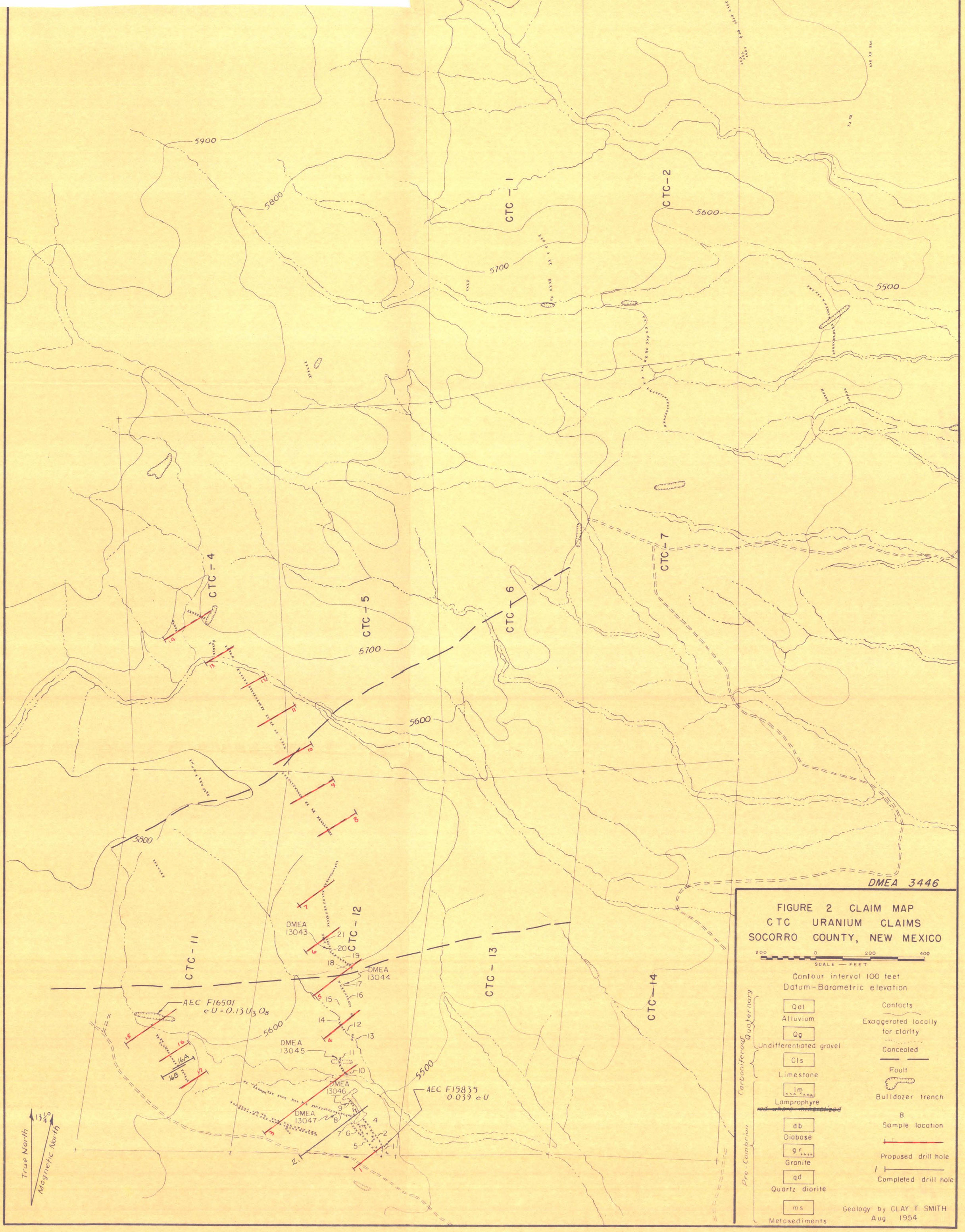
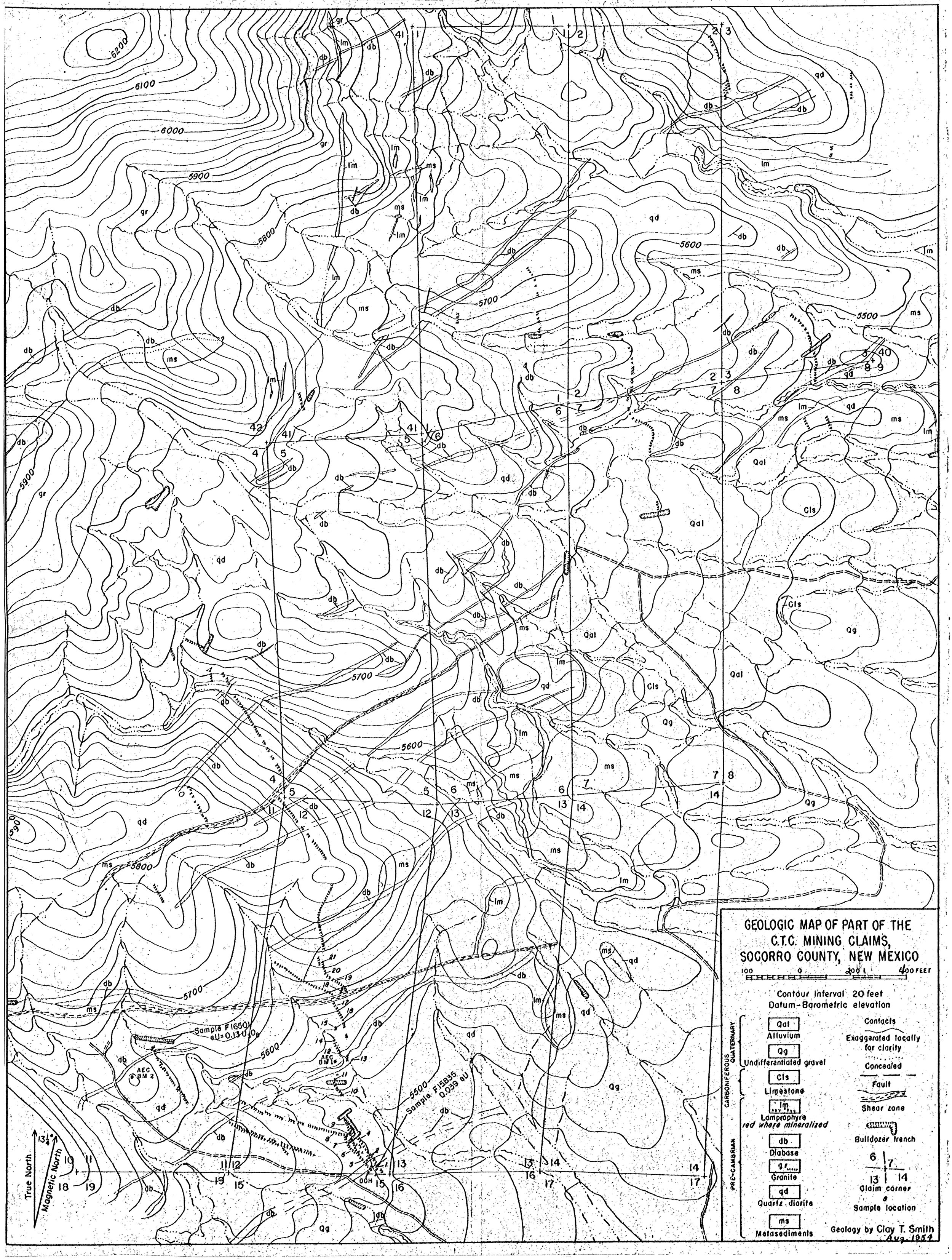


FIGURE 2 CLAIM MAP
CTC URANIUM CLAIMS
SOCORRO COUNTY, NEW MEXICO
SCALE — FEET
200 0 200 400
Contour interval 100 feet
Datum-Barometric elevation
Quaternary
Qal
Alluvium
Qg
Undifferentiated gravel
Carboniferous
Cls
Limestone
lm
Lamprophyre
Pre-Cambrian
db
Diabase
gr
Granite
qd
Quartz diorite
ms
Metasediments
Contacts
Exaggerated locally for clarity
Concealed
Fault
Bulldozer trench
8
Sample location
Proposed drill hole
Completed drill hole
Geology by CLAY T SMITH
Aug 1954
CTC-1
CTC-2
CTC-4
CTC-5
CTC-6
CTC-7
CTC-11
CTC-12
CTC-13
CTC-14
DMEA 3446
DMEA 13043
DMEA 13044
DMEA 13045
DMEA 13046
DMEA 13047
AEC F16501
eU = 0.13 U3O8
AEC F15835
0.039 eU
5900
5800
5700
5600
5500
True North
Magnetic North
13½°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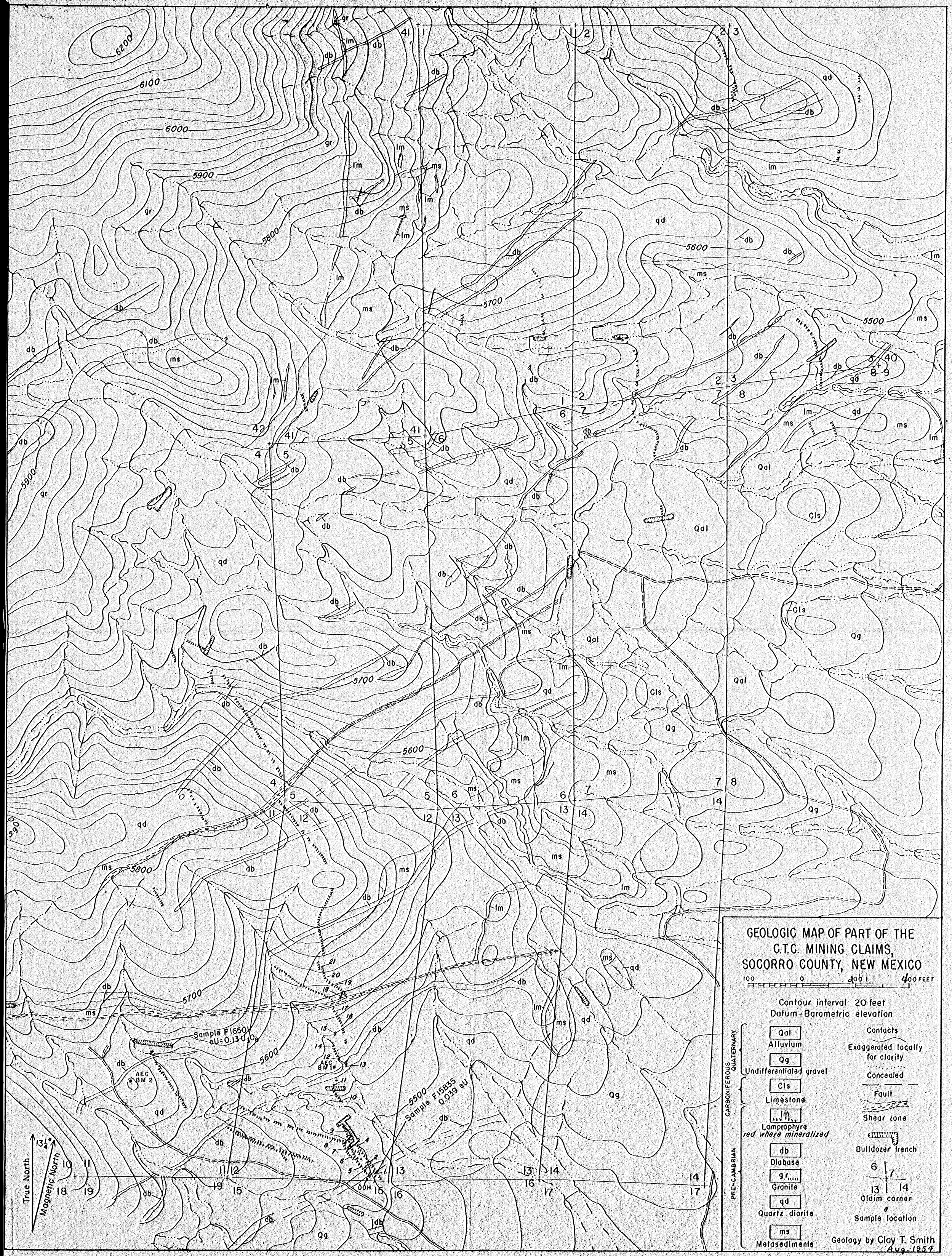
C.T.C. MINING CLAIMS,
SOCORRO COUNTY, NEW MEXICO
100 0 200 400 FEET
Contour interval 20 feet
Datum-Barometric elevation
QUATERNARY
Qal
Alluvium
Qg
Undifferentiated gravel
CARBONIFEROUS
Cls
Limestone
PRE-CAMBRIAN
lm
Lamprophyre
red where mineralized
db
Diabase
gr
Granite
qd
Quartz diorite
ms
Metasediments
Contacts
Exaggerated locally for clarity
Concealed
Fault
Shear zone
Bulldozer trench
Claim corner
Sample location
Geology by Clay T. Smith
Aug. 1959
True North
Magnetic North
13¼°
Sample F16501
eU=0.13 U3O8
Sample F15835
0.039 eU
AEC BM 1
AEC BM 2
DDH
6200
6100
6000
5900
5800
5700
5600
5500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C.T.C. MINING CLAIMS,
SOCORRO COUNTY, NEW MEXICO
100 0 200 400 FEET
Contour interval 20 feet
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Alluvium
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Undifferentiated gravel
CARBONIFEROUS
Cls
Limestone
PRE-CAMBRIAN
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red where mineralized
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AEC BM 2
DDH
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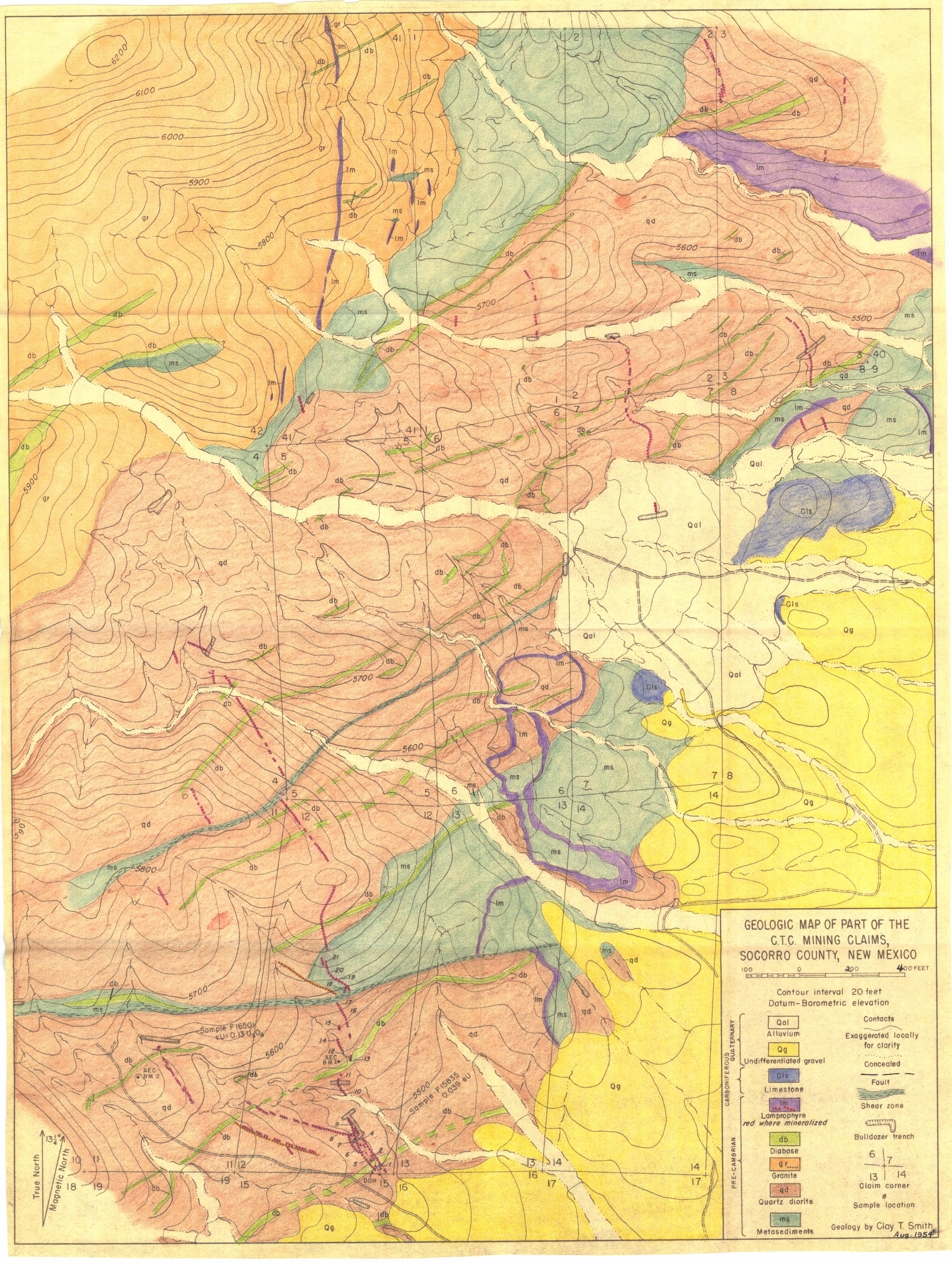
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