DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

## CONTROLLED DOCUMENT

DMA Docket No. 4274

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Exploration

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Cys. BM, GS, Region III

Routing Slip

| | | | |
|---|---|---|---|
| To: | 700 | Date | 5/3/56 |
| To: | Oper. Com. | Date | 5/22/56 |
| To: | F. E. Johnson | Date | 5-23-56 |
| To: | Oper. Com | Date | ~~8/24/56~~ 9/4/56 |
| To: | Admr. Ref. | Date | 9-5-56 |
| To: | MH 7 | Date | 9-5-56 |
| To: | Oper Com | Date | 9-21-56 |
| To: | F. E. Johnson | Date | 9-21-56 |
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## DO NOT DETACH

## CONTROLLED DOCUMENT

OCT 12 1956

700

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

RECEIVED
OCT - 8 1956

224 New Customhouse
Denver 2, Colorado

October 4, 1956

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 4274 (Uranium) Campbell Farming Corporation, (Agua Torres Mine), Socorro County, New Mexico

This responds to your letter dated September 21, 1956, requesting more information for a proper reply to Mr. Thomas D. Campbell.

Enclosed are two copies each of a joint memorandum from W.L. Emerick and T. M. Romslo, dated September 27, 1956; a letter dated July 9, 1956 from Harold D. Wolfe, AEC, to W. L. Emerick; a letter dated July 18, 1956 from Robert E. Wilson, AEC, to W. L. Emerick.

It appears that while no oral discussion took place with the AEC, the examiners did obtain by letter the informaltion on the subject property which the AEC had at that time.

W. M. Traver

W. M. Traver

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OCT 1 1956

U. S. GEOLOGICAL SURVEY DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

September 27, 1956

DMEA
DEPARTMENT OF THE INTERIOR
OCT 2 1956
REGION III
DENVER, COLORADO

MEMORANDUM

TO: Executive Officer, DMEA Field Team, Region III

FROM: W. L. Emerick, Geologist, U.S. Geological Survey
T. M. Romslo, Mining Engineer, U.S. Bureau of Mines

Through: E. N. Harshman
W. R. Storms

SUBJECT: Docket DMEA-4274 (Uranium) Campbell Farming Corporation (Agua Torres Mine), Socorro Co., New Mexico

Reference is made to your letter of September 25, 1956 on above docket as to whether the proposed project was discussed with the AEC members. No actual oral discussion with AEC members was made by the examining team. Copies of the examining team's correspondence with the Albuquerque Branch office of the Atomic Energy Commission in regard to the proposed project are enclosed. Their non-committal letters indicated that no detailed geological information was available on the immediate area, and that their own work had been limited to a preliminary geological reconnaissance and examination of known prospects in the area. As the proposed project was in the area under jurisdiction of the Albuquerque office, the examining team did not feel it necessary to contact other AEC members.

It was the impression of the examining team that shipments of ore from the applicant's mine would have to be more or less selectively mined to maintain a satisfactory grade. Without doing this it is doubtful whether a satisfactory grade could be maintained. The examining team's samples on either side of the small area from which shipments were made by applicant were in general extremely low grade.

Applicant cites mines from which shipments were made to the AEC buying station at Grants. One of the mines is 3 miles south of the proposed project, and the second mine, if it is the one listed in Circular 29, New Mexico Bureau of Mines and Mineral Resources, is more than 20 miles northwest. The examining team does not feel warranted in projecting conditions at those mines to the proposed project. Perhaps the applicant has other prospects on his property with more merit that would qualify for government aid in exploration.

Based on the geological conditions as found at the time of examination, the examining team does not believe that sufficient tonnages of ore are present on the proposed project to warrant government participation in exploration, and therefore, our recommended denial was justified.

W. L. Emerick

W. L. Emerick

T. M. Romslo

T. M. Romslo

Encl. (2)
cc. Storms
Harshman
File

MINERAL DEPOSITS
DMEA
RECEIVED
OCT 1 1956
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

COPY

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS

Albuquerque, N. M.

July 9, 1956

DMEA
DEPARTMENT OF THE INTERIOR
OCT 2 1956
REGION III
DENVER, COLORADO

U. S. Atomic Energy Commission
Division of Raw Materials
Denver Exploration Branch
P.O. Box 7647, Lakewood Branch
Denver 15, Colorado

Refer to: ABO:HDW.

Mr. W. L. Emerich, Geologist
U. S. Geological Survey
Box 4126, University Station
Tucson, Arizona

Dear Mr. Emerich:

This is in reply to your letter of July 5, 1956, concerning the Agua Torres mine.

We will be able to supply you with some information, although we have not done much work at the property. We have had a few samples assayed and the uranium minerals identified. We also have submitted samples for spectrographic analysis and should receive the results on these at any time. The Area Geologist who has been working in the area of the Agua Torres mine will be in the field until the latter part of this week. We will have him assemble whatever information he has when he returns and will try to get this in the mail to you on Friday of this week.

Sincerely yours,

/s/ Harold D. Wolfe, Manager
Albuquerque Branch Office

RECEIVED OCT 1 1956
OCT - 3 1956
GEOLOGICAL SURVEY
DENVER, COLO.
DEPARTMENT OF THE INTERIOR
OCT 2 1956
REGION III
DENVER, COLORADO

COPY

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
Albuquerque, N. M.

Address Reply to:
U. S. Atomic Energy Commission
Division of Raw Materials
Denver Exploration Branch
P. O. Box 7647, Lakewood Branch
Denver 15, Colorado
Refer to ABO:REW

July 18, 1956

Mr. W. L. Emerick, Geologist
U. S. Geological Survey
Box 4126, University Station
Tucson, Arizona

Dear Mr. Emerick:

Your recent request for information on the T. D. Campbell Farming Corporation's Agua Torres claim, located in Section 6, T. 1 S., R. 3 W., Socorro County, New Mexico, has been referred to me.

To my knowledge no detailed geologic information is available on the immediate area in which this claim is located. The best available map of the area is U.S.G.S. Oil and Gas Investigations Map No. OM 121, Sheet 2, entitled "Geology of the Region from Socorro and San Antonio East to Chupadera Mesa, Socorro County, New Mexico."

Our work in the vicinity of the Agua Torres claim has been limited to a preliminary geological reconnaissance and an examination of the known prospects.

The Agua Torres claim and the Cibola prospect, located approximately 1 mile south, are on a prominent, north-south normal fault of Tertiary age which brings the Permian Abo formation into contact with the Pennsylvanian Magdalena limestone. To date, the Agua Torres claim has produced approximately 120 tons of 0.11 to 0.20% uranium ore from an ore shoot 3 to 5 feet wide and approximately 60 feet long. The ore minerals have been identified as carnotite and tyuyamunite, occurring mainly with limonite as earthy coatings on a highly-fractured and silicified limestone within the shear zone of the fault.

In addition to the minerals mentioned above, a uranium mineral tentatively identified as novacekite is found in the fault breccia at the Cibola prospect. This mineral is associated with dark red to yellow masses of iron and manganese oxides.

Assay results from three samples taken from a bulldozer cut on the Agua Torres claim are as follows:

| Field No. | Rock Type | Radiometric %eU$_3$O$_8$ | Chemical %U$_3$O$_8$ | %V$_2$O$_5$ |
|---|---|---|---|---|
| F-38619 | Silicified limestone | 0.057 | --- | --- |
| F-38620 | " " | 0.194 | 0.20 | 0.10 |
| F-38621 | " " | 0.131 | 0.11 | 0.11 |

Sincerely yours,

/s/ Robert E. Wilson, Geologist
Albuquerque Branch Office

700

FILE COPY
Surname:

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

OCT 11 1956

Mr. Thomas D. Campbell, President
Campbell Farming Corporation
323 Third Street, S. W.
Albuquerque, New Mexico

Re: Docket No. DMEA-4274 (Uranium)
Agua Torres Mine
Socorro County, New Mexico

Dear Mr. Campbell:

This is with further reference to your letter, dated September 14, 1956, which concerns the denial of your application for Government assistance to explore the subject property.

Since my letter of September 21, 1956, I have caused a further review to be made by the Government agencies concerned, of your application and other available related data. Their findings show that although some uranium mineralization exists in the area you propose to explore, it is not believed that a sufficient tonnage of ore would be discovered to warrant Government participation in an exploration project. Under the circumstances, the decision rendered in my letter of September 5, 1956, denying your application for Government exploration assistance remains unchanged. However, I wish to point out that the decision applies only to the limited property described in your application and examined by the Government engineers and geologists. If there are other prospective areas on your property that you believe would qualify for Government exploration assistance, you may submit an application for consideration.

Again, we wish to thank you for your interest in the Defense Minerals Exploration Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse/gla/izm 10-10-56
cc to: Docket
Mr. Knouse
Admr.'s Reading File
DMEA Field Team, Reg. III (2)
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

OCT 9 1956

RECEIVED

224 New Customhouse
Denver 2, Colorado

October 4, 1956

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 4274 (Uranium) Campbell Farming Corporation, (Agua Torres Mine), Socorro County, New Mexico

This responds to your letter dated September 21, 1956, requesting more information for a proper reply to Mr. Thomas D. Campbell.

Enclosed are two copies each of a joint memorandum from W.L. Emerick and T. M. Romslo, dated September 27, 1956; a letter dated July 9, 1956 from Harold D. Wolfe, AEC, to W. L. Emerick; a letter dated July 18, 1956 from Robert E. Wilson, AEC, to W. L. Emerick.

It appears that while no oral discussion took place with the AEC, the examiners did obtain by letter the informaltion on the subject property which the AEC had at that time.

W. M. TRAVER

W. M. Traver

IN REPLY REFER TO:

OC 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Box 4126 University Station
Tucson, Arizona

September 27, 1956

DMEA
DEPARTMENT OF THE INTERIOR
OCT 2 1956
REGION III
DENVER, COLORADO

MEMORANDUM

TO: Executive Officer, DMEA Field Team, Region III

FROM: W. L. Emerick, Geologist, U.S. Geological Survey
T. M. Romslo, Mining Engineer, U.S. Bureau of Mines

Through: E. N. Harshman
W. R. Storms

SUBJECT: Docket DMEA-4274 (Uranium) Campbell Farming Corporation (Agua Torres Mine), Socorro Co., New Mexico

Reference is made to your letter of September 25, 1956 on above docket as to whether the proposed project was discussed with the AEC members. No actual oral discussion with AEC members was made by the examining team. Copies of the examining team's correspondence with the Albuquerque Branch office of the Atomic Energy Commission in regard to the proposed project are enclosed. Their non-committal letters indicated that no detailed geological information was available on the immediate area, and that their own work had been limited to a preliminary geological reconnaissance and examination of known prospects in the area. As the proposed project was in the area under jurisdiction of the Albuquerque office, the examining team did not feel it necessary to contact other AEC members.

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Applicant cites mines from which shipments were made to the AEC buying station at Grants. One of the mines is 3 miles south of the proposed project, and the second mine, if it is the one listed in Circular 29, New Mexico Bureau of Mines and Mineral Resources, is more than 20 miles northwest. The examining team does not feel warranted in projecting conditions at those mines to the proposed project. Perhaps the applicant has other prospects on his property with more merit that would qualify for government aid in exploration.

Based on the geological conditions as found at the time of examination, the examining team does not believe that sufficient tonnages of ore are present on the proposed project to warrant government participation in exploration, and therefore, our recommended denial was justified.

W. L. Emerick

W. L. Emerick

T. M. Romslo

T. M. Romslo

Encl. (2)
cc. Storms
Harshman
File

COPY

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS

Albuquerque, N. M.

DMEA

July 9, 1956

DEPARTMENT OF THE INTERIOR

U. S. Atomic Energy Commission
Division of Raw Materials
Denver Exploration Branch
P.O. Box 7647, Lakewood Branch
Denver 15, Colorado

COLORADO

Refer to: ABO:HDW.

Mr. W. L. Emerich, Geologist
U. S. Geological Survey
Box 4126, University Station
Tucson, Arizona

Dear Mr. Emerich:

This is in reply to your letter of July 5, 1956, concerning the Agua Torres mine.

We will be able to supply you with some information, although we have not done much work at the property. We have had a few samples assayed and the uranium minerals identified. We also have submitted samples for spectrographic analysis and should receive the results on these at any time. The Area Geologist who has been working in the area of the Agua Torres mine will be in the field until the latter part of this week. We will have him assemble whatever information he has when he returns and will try to get this in the mail to you on Friday of this week.

Sincerely yours,

/s/ Harold D. Wolfe, Manager
Albuquerque Branch Office

COPY

RECEIVED
OCT - 3 1956
USGS
DEPARTMENT OF THE INTERIOR
OCT 3 1956
REGION III
DENVER, COLORADO

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
Albuquerque, N. M.

Address Reply to:
U. S. Atomic Energy Commission
Division of Raw Materials
Denver Exploration Branch
P. O. Box 7647, Lakewood Branch
Denver 15, Colorado
Refer to ABO:REW

July 18, 1956

Mr. W. L. Emerick, Geologist
U. S. Geological Survey
Box 4126, University Station
Tucson, Arizona

Dear Mr. Emerick:

Your recent request for information on the T. D. Campbell Farming Corporation's Agua Torres claim, located in Section 6, T. 1 S., R. 3 W., Socorro County, New Mexico, has been referred to me.

To my knowledge no detailed geologic information is available on the immediate area in which this claim is located. The best available map of the area is U.S.G.S. Oil and Gas Investigations Map No. OM 121, Sheet 2, entitled "Geology of the Region from Socorro and San Antonio East to Chupadera Mesa, Socorro County, New Mexico."

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In addition to the minerals mentioned above, a uranium mineral tentatively identified as novacekite is found in the fault breccia at the Cibola prospect. This mineral is associated with dark red to yellow masses of iron and manganese oxides.

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|---|---|---|---|---|
| F-38619 | Silicified limestone | 0.057 | --- | --- |
| F-38620 | " " | 0.194 | 0.20 | 0.10 |
| F-38621 | " " | 0.131 | 0.11 | 0.11 |

Sincerely yours,

/s/ Robert E. Wilson, Geologist
Albuquerque Branch Office

9/28/56 gla

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

[redacted] Customhouse
[redacted] 2, Colorado

September 25, 1956

Memorandum

RECEIVED
SEP 27 1956

To: Messrs. Storms
and Emerick

From: DMEA Field Team, Region III

Subject: Docket DMEA 4274 (Uranium) Campbell Farming Corporation (Agua Torres Mine) Socorro County, New Mexico

Enclosed are a copy of a letter from the Chairman of the Operating Committee, dated September 21, 1956, and a copy of a letter from Thomas D. Campbell to the Acting Administrator, dated September 14, 1956.

Reference is made, on page 4 of the Report of Examination on the subject property, to a written communication from R. E. Wilson, AEC, but no mention was made of any discussion with other members of the Atomic Energy Commission relative to the merits of the subject property.

Will you please advise if the proposed project was discussed with the AEC members so that we may reply to the Chairman's letter. Please review this matter and submit your comments and recommendations to this office so that a reply to Mr. Campbell may be prepared.

DMEA Field Team, Region III

W. M. TRAVER

W. M. Traver
By Executive Officer

Enclosures

WMC:ytl

cc: Sec. Op. Comm. (2)
Harshman
Docket 4274
Chron.

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

RECEIVED
SEP 27 1956

224 New Customhouse
Denver 2, Colorado

September 25, 1956

Memorandum

To: Messrs. Storms
and Emerick

From: DMEA Field Team, Region III

Subject: Docket DMEA 4274 (Uranium) Campbell Farming Corporation
(Agua Torres Mine) Socorro County, New Mexico

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Reference is made, on page 4 of the Report of Examination on the subject property, to a written communication from R. E. Wilson, AEC, but no mention was made of any discussion with other members of the Atomic Energy Commission relative to the merits of the subject property.

Will you please advise if the proposed project was discussed with the AEC members so that we may reply to the Chairman's letter. Please review this matter and submit your comments and recommendations to this office so that a reply to Mr. Campbell may be prepared.

DMEA Field Team, Region III

W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC:ytl

cc: Sec. Op. Comm. (2)
Harshman
Docket 4274
Chron.

Surname copy

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

FIKnouse 700
Ellis
Kiilsgaard
Pennington
Selfridge
Johnson

SEP 21 1956

Mr. Thomas D. Campbell, President
Campbell Farming Corporation
323 Third Street, S. W.
Albuquerque, New Mexico

Re: Docket No. DMEA-4274 (Uranium)
Agua Torres Mine
Socorro County, New Mexico

Dear Mr. Campbell:

Acknowledgment is made of your letter, dated September 14, referring to my letter of September 5, 1956, denying the application of your company under the subject docket number.

Your communication, together with the docket, is being reviewed and you will be advised concerning this matter in the near future.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FIKnouse/gla
9-20-56
cc to: Admr.'s Reading File
Docket
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700, Mr. Knouse
DMEA Field Team, Region III (2)

RCK

C

700

S[illegible]ame copy

FLKnouse

Selfridge
Jenkins
Mathews

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

SEP 2[illegible] 1956

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

Re: Docket No. DMEA-427 (Uranium)
Campbell Farming Corporation
Agua Torres Mine
Socorro County, New Mexico

Dear Mr. Traver:

Enclosed are two copies of a letter, dated September 14, 1956, from Mr. Thomas D. Campbell, president of the subject company, concerning its application which was denied on September 5, 1956.

Please review this matter and submit your comments and recommendations in order that a reply to Mr. Campbell may be prepared.

In this connection, since the Applicant stated in the application that the AEC, in Albuquerque, had planned to drill this property but did not have funds available, we are interested to learn if the proposed project was discussed with said AEC engineers.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

Enclosures

FLKnouse/gla
9-20-56

APPROVAL:

J. W. Pennington (JWP)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700, Mr. Knouse

9/17/56 gla

THOMAS D. CAMPBELL, PRESIDENT

O. B. MADDOX, SECRETARY-TREASURER

# CAMPBELL FARMING CORPORATION

HARDIN, MONTANA

Air Mail

323 Third Street, SW
Albuquerque, New Mexico
September 14, 1956

RECEIVED
SEP 17 1956

Mr. Frank E. Johnson
Acting Administrator
Defense Minerals Exploration Admin.
Department of the Interior
Washington, D. C.

Re: Docket No. DMEA-4274 (Uranium)
Agua Torres Mine
Socorro County, New Mexico

Dear Mr. Johnson:

Upon my return from California a few days ago, I have your letter of September 1 in regard to our application for prospecting aid on the above named property and ask that you reconsider our application for the following reasons:

1. All shipments prior to the last one were of satisfactory grade. Representatives of the Atomic Energy Commission visited the property several times and recommended an exploration contract. The last shipment was made by inexperienced loaders without proper supervision, and a great deal of overburden was loaded with the ore.

2. A mine operated on a lease from us about three miles south of the Agua Torres Mine has shipped ore acceptable to the Atomic Energy buying station at Grants. The Jeter mine, adjoining our north boundary, is also being operated successfully.

3. Our property has been approved for development purposes by several very good mining engineers not connected with the Atomic Energy Commission. The Anaconda Company, after careful examination, offered us a written lease on this same location which we refused because we were not satisfied with the royalty and decided to develop the property ourselves, with the help of the government during the period of exploratory work. We still feel that as much as we own over 300,000 acres in Socorro County, which has outcroppings of uranium in many places, that the government will be justified in helping us on the exploration work for the small amount involved, especially since it has been approved by all Atomic Energy engineers who have visited the location.

Hoping that you will reconsider our application, and we will make another shipment of ore which has been more carefully loaded, I am

Respectfully yours

Campbell

Thomas D. Campbell

TDC:mb

700

FILE COPY
Surname:
F. L. Knouse
Williams
Kirkpatrick
Selfridge

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

SEP - 5 1956

Mr. Thomas D. Campbell, President
Campbell Farming Corporation
323 Third Street SW
Albuquerque, New Mexico

Re: Docket No. DMEA-437b (Uranium)
Agua Torres Mine
Socorro County, New Mexico

Dear Mr. Campbell:

Your application for aid in an exploration project and other information available to us in Washington concerning the above-named 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.

Careful study of all our information, although noting some uranium ore on your property, indicates to us that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

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

Sincerely yours,

Frank E. Johnson (by esf)
ACTING Administrator

FLKnouse/izm 8-31-56
cc to: Docket
Code 700
Mr. Knouse
Admr.'s Reading File
Operating Committee
DMEA Fiels Team, Region III (2)
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.G.S.

F. L. Kramer

## Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-4274

Commodity: Uranium

Applicant: Campbell Farming Corporation
323 Third Street SW
Albuquerque, New Mexico

Property: La Joya Grant, owned by Applicant. No specific land area was described to be included in the application, however, stated the Agua Torres Mine, or deposit, is located in sec. 6, T. 1 S., R. 3 E., N.M.P.&B., Soccorro County, New Mexico. However, Field Examiners indicate the mine may be in sec. 1, T. 1 S., R. 2 E.

Date of Application: April 26, 1956

Proposed Work: Consists of 50 hours of tractor w/dozer operating time constructing an access road and stripping deposit, and drilling three inclined core and non-core holes to depths of 550 and 900 feet at an estimated total cost of $13,250.00.

The objective of the work being to explore in depth a surface exposure of a uranium-vanadium-bearing material in a volcanic plug.

From the surface exposure Applicant reported two ore shipments were mined as follows:

| Dry Tons | Assay Value | | |
|---|---|---|---|
| | $\%U_3O_8$ | $\%V_2O_5$ | $\%CaCo_3$ |
| 7.470 | 0.20 | 0.13 | 6.9 |
| 109.784 | 0.11 | 0.10 | 9.8 |

Cost of Proposed Work:

| | | |
|---|---|---|
| 50 hrs. of tractor operating time @ $12/hr. | $625.00 | |
| 2,450 ft. of non-core drilling @ $2.50/ft. | 6,125.00 | |
| 800 ft. of core drilling @ $6/ft. | 4,800.00 | |
| Surveying of holes | 250.00 | |
| Sample analyses and core boxes | 250.00 | |
| Superintendent's salary - 2 mos. @ $500/mo. | 1,000.00 | |
| Pickup operation cost - 2,000 miles @ $0.10/mile | 200.00 | |
| Total Estimated Cost of Project ..... | | $13,250.00 |
| Government Participation @ 75% ..... | | $ 9,937.50 |

Field Team Report, August 14, 1956 (Joint Report by W. L. Emerick, USGS and T. M. Romslo, USBM):

The Agua Torres mine lies on the southwest corner of the Los Pinos Mountain on the east side of the Rio Grande River. Geology has been complicated by longitudinal thrust faults, that in places have moved pre-cambrian sediments against, or over, Pennsylvanian and Permian sediments.

At the mine a northward-trending fault brings Pennsylvanian Magdalena limestone on the west against younger Permian Abo sandstone on the east. Both sediments dip northward at low angles. A brecciated shear zone composed of hard and shattered limestone and claying masses occurs in the limestone adjacent to the fault and is mineralized with uranium, vanadium, and iron oxide.

The ore minerals, identified as carnotite and tyuyamunite form a thin coating upon the fracture faces of the shattered and silicified limestone in the breccia zone. The area of the breccia zone in which the fracture faces are coated with uranium-vanadium minerals is limited in length and width, and under prevailing geologic conditions it does not appear extensive tonnage of ore grade material would be developed in depth. The Applicant reports the ore production reported was mined from the above area.

Five east-west channel samples were cut from the mined area ranging from 5 to 12 feet across the area. Three of the samples showed 0.01% $U_3O_8$, one showed 0.06% $U_3O_8$ and one showed 0.10% ~~natural~~ radioactivity.

Because of the limited area of mineralized material exposed, and low mineral content, no ore reserves were estimated.

Geologic conditions are such that a marked increase of mineralization either in extent or in depth is not expected.

Therefore, since additional exploration of the property is not likely to discover significant reserves of uranium ore, denial of the application for Government exploration assistance is recommended.

The Field Team concurs with the examiner's recommendation.

Comments of Commodity Specialists:

USGS, N. E. Nelson, August 31, 1956:

Concurs with the recommendation of the Field Team.

USBM, John E. Crawford, August 29, 1956:

Concurs with the recommendation of the Field Team.

Rare and Miscellaneous Metals Div., F. L. Knouse, September 4, 1956:

The examination of this property reveals that secondary uranium-vanadium mineralization occurs in a limited area as fracture coating

along a fault breccia in the sediments. The Applicant reported the mineralization occurred in a volcanic plug. Assays of samples cut across the breccia zone show a small area contained low grade uranium mineralization.

Geologically, the conditions are such that a marked increase in either the extent or degree of mineralization in depth is not expected. Therefore, the probability of discovering significant reserves of uranium ore on this property is unfavorable and denial of the application for Government exploration assistance is recommended.

Conclusions:

A review of all our information relating to the proposed project indicates that the probability of making a significant discovery is not sufficiently promising for Government participation. Therefore, the application should be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

9-4-56

IN REPLY REFER TO:

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

RECEIVED
SEP - 4 1956

August 31, 1956

Re: DMEA 4274
Campbell Farming Corp.
Aqua Torres Mine
Socorro County, N. Mex.
$13,250.00 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

The applicant requested assistance in exploring by drilling what was mapped as a roughly semicircular brecciated plug, from an open cut on the rim of which 2 shipments, 117 tons, of uranium-vanadium ore had been made.

Instead of a defined igneous plug the examiners found the plug to be brecciated silicified limestone in a fault zone. The uranium ore shipped came from the westerly margin of the brecciated area, rather than from the rim of a plug. Sampling of the open cut and 2 bulldozed trenches which cross the brecciated zone indicate the best radioactive material remaining is not of ore grade and there is little reason for thinking the grade will increase with depth. In the opinion of the examiners the uranium minerals are probably associated with a certain bed of the Pennsylvanian limestone and "a marked increase in either the extent or degree of mineralization with depth is not expectable." Therefore the drilling proposed by the applicant is not recommended. Instead, a shaft sunk in the most likely spot should suffice, but participation by the Government is not recommended.

I concur with the denial recommendation of the examiners and the Field Team.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
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I concur with the denial recommendation of the examiners and the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:jeh
8/30/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Int.

IN REPLY REFER TO:

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

RECEIVED
SEP - 4 1956

August 31, 1956

Re: DMEA 427
Campbell Farming Corp.
Agua Torres Mine
Socorro County, N. Mex.
$13,250.00 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

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WASHINGTON 25, D. C.

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SEP - 4 1956

August 31, 1956

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Socorro County, N. Mex.
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N. E. Nelson

N. E. Nelson

NENelson:jeh
8/31/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3)
Docket file
J. E. Crawford, 3041 Int.

8/30/56

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

August 29, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

Subject: Report of Examination, DMEA Docket 4274 (Uranium) Campbell Farming Corporation (Aqua Torres Mine) Socorro County, New Mexico

I have reviewed the report of examination, DMEA Docket 4274, Campbell Farming Corporation (Aqua Torres Mine) Socorro County, New Mexico, dated August 14 and received in this office August 27, 1956. I have also discussed it with Jack Kratchman, Atomic Energy Commission.

We concur with the Field Team that the application for assistance be denied because of lack of evidence that the exploration project would result in a significant discovery of uranium.

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

John E Crawford
John E. Crawford

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

August 29, 1956

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BUREAU OF MINES
WASHINGTON 25, D. C.

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

John E. Crawford

8/28/56

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

August 21, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
AUG 23 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4274 (Uranium) Campbell Farming Corporation (Aqua Torres Mine) Socorro County, New Mexico

Enclosed are the original and three copies of a joint engineering and geologic Report of Examination on the subject property.

The field examiners conclude that exploration of the Applicant's property would be unlikely to result in a significant discovery of ore, is not warranted, and recommend denial of the application. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
8-27-56
(date)

DMEA
Date Rec'd.

AUG 20 1956

BUREAU OF MINES
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

August 15, 1956

TRANSMITTED
AUG 21 1956

MEMORANDUM

To: Executive Officer DMEA Field Team, Region III

From: T. M. Romslo, Mining Engineer, U. S. Bureau of Mines, and W. L. Emerick, Geologist, U. S. Geological Survey

Through: W. R. Storms WRS
E. N. Harshman RWK for ENH

Subject: Docket DMEA-4274 (Uranium), Campbell Farming Corporation (Aqua Torres Mine), Socorro County, New Mexico

Enclosed are the original and 11 copies of the field examination report on the above property.

The original application for Government aid, which was sent to this office, is enclosed.

W L Emerick
W. L. Emerick

WLE:ms

Original signed by
T. M. Romslo

cc. Harshman (11)
Storms
Emerick
Shaw

Reviewed by
DMEA OPERATING COMMITTEE
8-27-56
(Date)

DMEA
Date Rec'd.
AUG 20 1956
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
AUG 21 1956

CONFIDENTIAL
NOT FOR PUBLIC INSPECTION OR QUOTATION

# DMEA-4274 (Uranium) Campbell Farming Corp.

## Aqua Torres Mine

8

## Socorro County, New Mexico

W. L. Emerick, Geologist
U. S. Geological Survey

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

August 14, 1956

Reviewed by
DMEA CLEARING COMMITTEE
8-27-56
(Date)

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. ROMSLO[1] AND W. L. EMERICK[2]

The Campbell Farming Corporation, with offices in Albuquerque, New Mexico has applied for Defense Minerals Exploration Administration assistance to explore their property for uranium. The property is located in Sec. 1, T. 1 S., R. 2 E., Socorro County, New Mexico. Application for the governmental aid was received by the Defense Minerals Exploration Administration on May 7, 1956 and proposed the drilling of three inclined core-drill holes to explore their property. Total cost of the project was an estimated $13,250.00. Field examination of the property was carried out under docket DMEA-4274.

The presence of uranium at the Aqua Torres deposit was first noted in early 1955 by local prospectors. In June 1955 selective mining operations were started but all operations were terminated in October 1955 after 2 shipments of ore had been made to the Bluewater Receiving Station, Grants, New Mexico. Total production from the property from the 2 shipments of ore amounted to about 117 short tons averaging about 0.15 percent $U_3O_8$ and 0.11 percent $V_2O_5$.

Unknown parties drilled 2 diamond drill holes to depths of 40 and 60 feet in early 1956. No data is available on either hole.

At the mine area a northward-trending fault brings Pennsylvanian Magdalena limestone on the west against Younger Permian Abo sandstone on the east. The fault is covered and appears to be normal.

---

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

A silicified and brecciated shear zone, probably of a bedding plane shear type, occurs in the limestone adjacent to the fault.

Ore minerals, identified as carnotite and tyuyamunite, form a thin coating upon fracture faces of the shattered, silicified limestone in a limited area of the shear zone.

Owing to the limited area of mineralized material showing, low grade of mineral, and the shallow depth of excavation, no attempt was made to calculate reserves. Geologic conditions are such that a marked increase in either the extent or degree of mineralization with depth is not expected.

It is concluded that exploration of the applicant's property is not warranted and would not reveal a significant tonnage of minable ore. Denial of the requested aid in exploration of the Aqua Torres deposit is recommended.

DMEA-4274, (URANIUM) CAMPBELL FARMING CORP.
AQUA TORRES MINE
SOCORRO COUNTY, NEW MEXICO

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| Ore reserves | 6 |
| Proposed explorations | 6 |
| Conclusions and recommendations | 6 |


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## INTRODUCTION

The Defense Minerals Exploration Administration received an application from the Campbell Farming Corporation, Albuquerque, New Mexico, for aid in exploration for uranium and vanadium at the Aqua Torres Mine, Socorro County, New Mexico. The application was docketed as DMEA-4274, reviewed by the Operating Committee and forwarded to the Field Team, Region III for a field examination of the property and a suitable report.

Proposed explorations to be completed in an estimated 2 months involved a small amount of bulldozer work, stripping and road building, and 3,250 feet of diamond drilling. The estimated total cost of the project was $13,250.00.

Field examinations were made July 1956 by W. L. Emerick and J. N. Faick, geologists, U. S. Geological Survey, and July 17, 1956 by T. M. Romslo, mining engineer, U. S. Bureau of Mines. Stanley W. Johnson, a mining engineer employed by the applicant, was present during both examinations.

## LOCATION AND ACCESSIBILITY

The Aqua Torres Mine is about 18 air miles northeast of Socorro, New Mexico and is described by the applicant as being in Sec. 6, T. 1 S., R. 3 E., Socorro County, New Mexico. Although the location could not readily be checked in the field the acceptable map of figure 1 indicates the correct location is sec. 1, T. 1 S., R. 2 E.

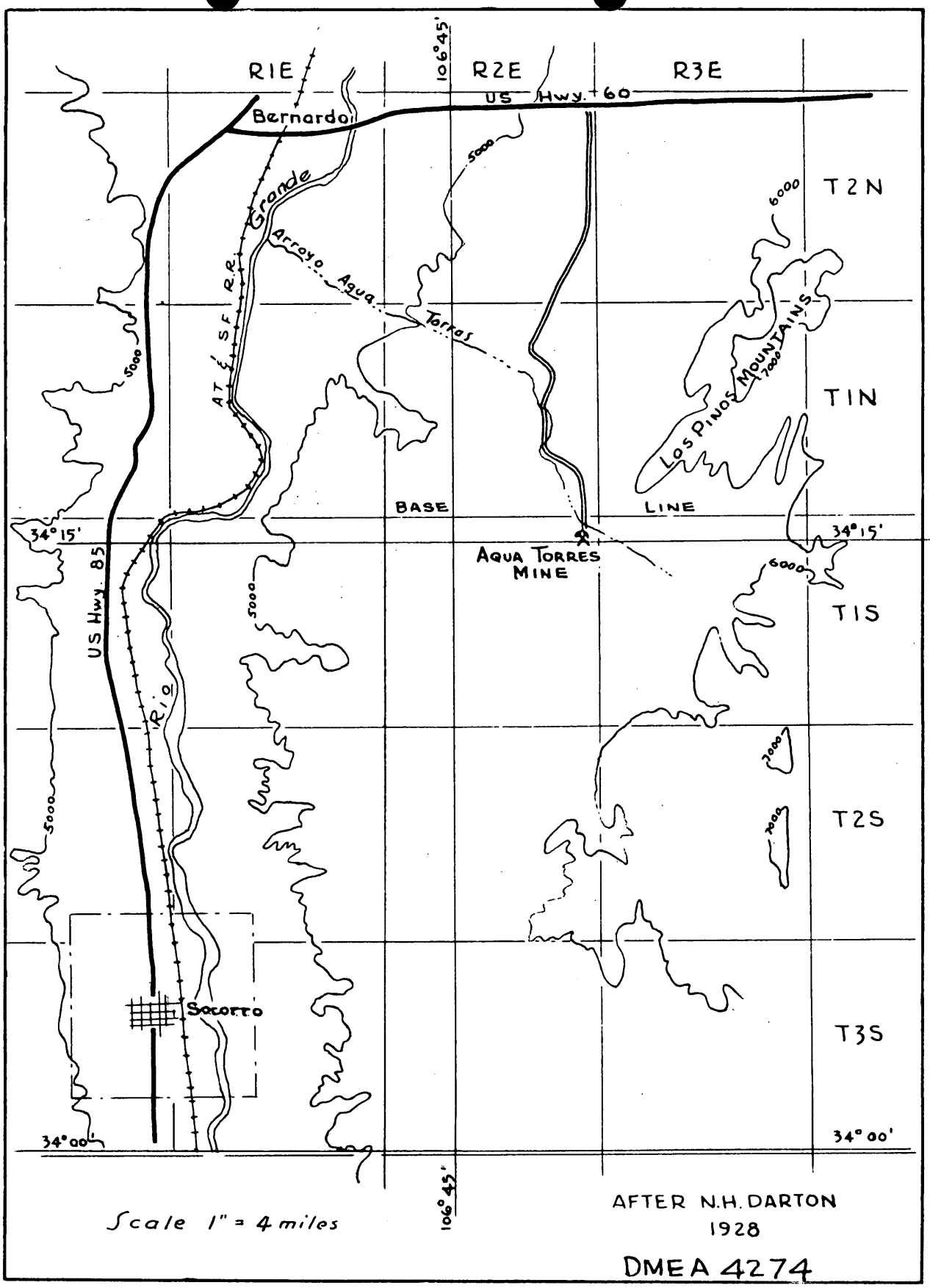



FIGURE 1.—SKETCH SHOWING LOCATION OF AQUA TORRES MINE, CAMPBELL FARMING CORPORATION, SOCORRO COUNTY, NEW MEXICO

It may be reached from Socorro by traveling 27 miles north on U. S. Highway 85 to its junction with U. S. Highway 60, thence 9 miles easterly on the latter highway to its intersection with an unmarked southerly trending dirt road. Proceed 13 miles on the dirt road to the mine. At a junction 7.1 miles from the highway the mine road branches to the left and skirts a windmill and corral at 0.3 miles from the mine.

## TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Aqua Torres deposit lies at an altitude of about 5,800 feet in an area of gently rolling hills at the southeast extremity of the northward trending Los Pinas Mountains. Drainage is westerly to the Rio Grande River, the sole perennial stream in the district.

Vegetation is confined to forage grasses.

Summers are mild and winters are not severe. Precipitation of about 10 inches annually occurs principally as heavy summer rainfalls and light snowfalls during the winter.

## HISTORY AND PRODUCTION

The presence of uranium at the Aqua Torres deposit was first noted in early 1955 by local prospectors. The prospectors, whose names Mr. Johnson could not recall, informed the applicant of their findings.

In June 1955, Grant Wilson, geologist, examined the property for the applicant and started selective mining operations. All operations were terminated in October 1955 after 2 shipments of ore had been made to the Bluewater Receiving Station, Grants, New Mexico.

The first ore shipment of about 7 short tons assayed 0.20 percent $U_3O_8$, 0.13 percent $V_2O_5$ and 6.9 percent CaO. The other ore shipment of about 110 short tons assayed 0.11 percent $U_3O_8$, 0.10 percent $V_2O_5$ and 9.8 percent CaO.

The next period of activity, according to Mr. Johnson, was in early 1956 when unknown parties diamond drilled 2 holes to depths of 40 and 60 feet. No data was available on either hole.

The trenches of figure 2 were excavated early in 1956. Since then, no work has been done.

There are no buildings or equipment of any kind on the property at present.

## EXTENT AND OWNERSHIP OF PROPERTY

The Aqua Torres deposit reportedly is within the boundaries of the La Joya Grant, Socorro County, New Mexico. The Campbell Farming Corporation, the applicant, reportedly owns all mineral and surface rights on this grant.

## GEOLOGY

The Aqua Torres mine lies at the extreme southwest corner of Los Pinos Mountains in Socorro County, New Mexico. Los Pinos Mountains are one of a group of northward-trending mountains on the eastern side of the Rio Grande Valley in central New Mexico. The geology of the district has been complicated by longitudinal thrust faults that in places have moved metamorphosed pre-Cambrian sediments against, or over, Pennsylvanian and Permian sediments. Normal faulting elsewhere

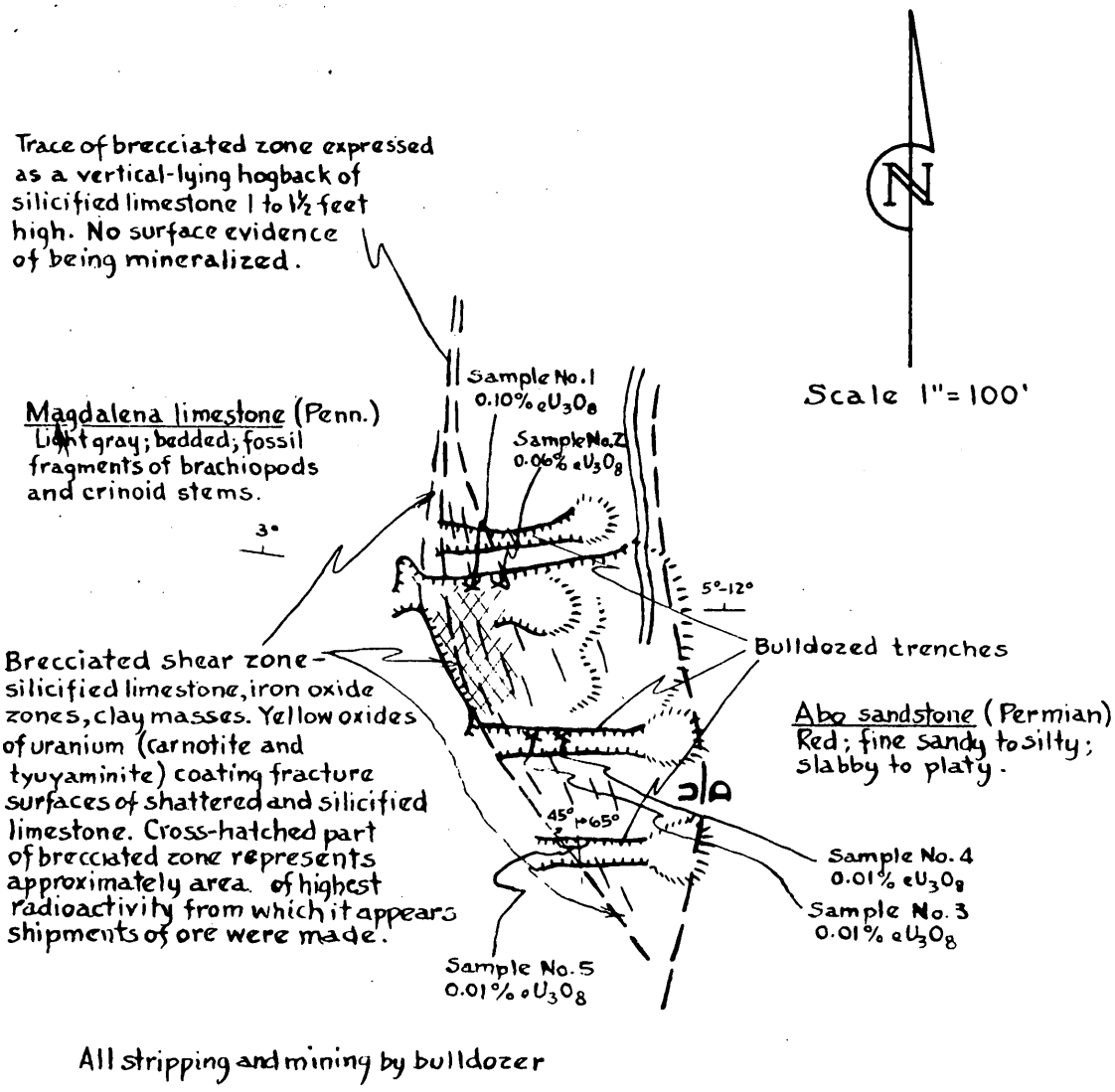
in the district has gently folded and tilted the Pennsylvanian and Permian sediments. Small areas of Tertiary and Quaternary igneous rocks occur in the district as flows, sills, or dikes.

At the mine area (Figure 2) a northward-trending fault brings Pennsylvanian Magdalena limestone on the west against younger Permian Abo sandstone on the east. Both sediments dip northward at low angles. The fault is covered and appears to be normal. A brecciated shear zone composed of hard and shattered silicified limestone, uranium, vanadium, and iron oxides, and clay masses, occurs in the limestone adjacent to the fault.

Earlier workers[1/] in Los Pinos Mountains reported that silicified brecciated zones along bedding planes in the Pennsylvanian limestones were continuous with similar silicified zones along normal faults in the area. The breccia zones were formed by upward movement of the beds during initial folding, or by subsequent slipping of beds down dip. Silicification of the breccia zones probably came later during Tertiary time. The breccia zone of the La Joya mine is probably of the bedding plane type described in the earlier report. Low outcrops of upturned silicified limestone, for a distance of about 150 or 200 feet northward from the mined area, suggest a possibility of post-fault movement along bedding planes in the limestone.

The ore minerals, identified as carnotite and tyuyamunite[2/], form a thin coating upon the fracture faces of the shattered and silicified limestone in the breccia zone. It is probable, but undetermined, that

1/ Stark, J. T., and Dapples, E. C., 1946, Geology of the Los Pinos Mountains, New Mexico: Geol. Soc. of America Bull., V. 57, p. 1163.
2/ Wilson, R. E., AEC, 1956, written communication.




All stripping and mining by bulldozer

DMEA 4274

FIGURE 2.- SKETCH OF MINE WORKINGS AND LOCATION OF SAMPLES, AQUA TORRES MINE, CAMPBELL FARMING CORPORATION, SOCORRO COUNTY, NEW MEXICO

the carnotite and tyuyamunite represent the oxidized products of a uranium-vanadium mineral, or minerals, introduced into the brecciated zone by hydrothermal processes after the limestone was silicified. Two northeast-dipping faults in the most southerly trench of the breccia zone (Figure 2) were examined for mineralized material but both faults were unmineralized. The area of the breccia zone in which the fracture faces are coated with the uranium-vanadium minerals is limited in length and width, and under prevailing geologic conditions it does not appear that extensive tonnages of ore grade material would be developed with depth.

Five E-W channel samples (Figure 2) were taken in the mined area and assayed by L. G. Evans in the laboratory of the Bureau of Mines, Tucson, Arizona. Results of the assays on the five samples were:

| | | PERCENT | |
|---|---|---|---|
| | | a/ | b/ |
| Sample | Type | $eU_3O_8$ | $rU_3O_8$ |
| No. 1 | 5-foot channel cut | 0.10 | 0.11 |
| No. 2 | 7-foot " " | 0.06 | 0.07 |
| No. 3 | 7-foot " " | 0.01 | 0.02 |
| No. 4 | 8-foot " " | 0.01 | 0.02 |
| No. 5 | 12-foot " " | 0.01 | 0.02 |

a/ e - equivalent $U_3O_8$ - based on the natural radioactivity of the sample as compared to the radioactivity exhibited by a standard uranium source in equilibrium under the same geometry.

b/ r - equilibrium method - uranium content calculated from the ratio of the beta and gamma counts.

Vanadium, which probably averages about 0.11 percent $V_2O_5$, is associated with the uranium but owing to the low uranium results obtained in general from the samples, assays for vanadium were not made.

## ORE RESERVES

Owing to the limited area of mineralized material at the surface, the low grade of the mineral, and the shallow depth of excavation, no attempt was made to estimate reserves.

## PROPOSED EXPLORATIONS

Applicant desires to explore the deposit by core-drilling three inclined holes from the east side of the fault. This proposal is based upon the applicant's belief that the brecciated zone is a volcanic plug. The brecciated zones, however, probably represent shattering by movement along certain bedding planes in the Pennsylvanian limestone, and it is likely that inclined holes such as the applicant proposes would penetrate an unmineralized lower member of the Pennsylvanian sediments. Deeper trenching by the applicant along the west side of the bulldozed area in the zone of higher radioactivity, or sinking of a shallow shaft, would probably provide significant information on the extent of the mineralized material.

## CONCLUSIONS AND RECOMMENDATIONS

At the Aqua Torres deposit, oxides of uranium and vanadium form thin coatings on the fracture faces of shattered, silicified limestone in a breccia zone. At the surface the extent of the mineralized zone is small and the average uranium and vanadium content is low. Furthermore, geologic conditions are such that a marked increase in either the extent or degree of mineralization with depth is not expectable.

Denial of the requested aid in exploration of the Aqua Torres deposit is recommended because the chances of indicating significant reserves of uranium ore are considered unfavorable.

8/23/56

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

August 21, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4274 (Uranium) Campbell Farming Corporation (Aqua Torres Mine) Socorro County, New Mexico

Enclosed are the original and three copies of a joint engineering and geologic Report of Examination on the subject property.

The field examiners conclude that exploration of the Applicant's property would be unlikely to result in a significant discovery of ore, is not warranted, and recommend denial of the application. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

RECEIVED
AUG 23 1956

Reviewed by
DMEA OPERATING COMMITTEE
8/27/56
(date)

DMEA
Date Rec'd

AUG 20 1956

BUREAU OF MINES
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

August 15, 1956

TRANSMITTED
AUG 21 1956

MEMORANDUM

To: Executive Officer DMEA Field Team, Region III

From: T. M. Romslo, Mining Engineer, U. S. Bureau of Mines, and W. L. Emerick, Geologist, U. S. Geological Survey

Through: W. R. Storms WRS
E. N. Harshman Rec for ENH

Subject: Docket DMEA-4274 (Uranium), Campbell Farming Corporation (Aqua Torres Mine), Socorro County, New Mexico

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The original application for Government aid, which was sent to this office, is enclosed.

W L Emerick
W. L. Emerick

WLE:ms

Original signed by
T. M. Romslo

cc. Harshman (11)
Storms
Emerick
Shaw

Reviewed by
DMEA OPERATING COMMITTEE
8/22/56
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
AUG 17 1956
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
AUG 21 1956

# CONFIDENTIAL

NOT FOR PUBLIC INSPECTION OR QUOTATION

DMEA-4274 (Uranium) Campbell Farming Corp.

Agua Torres Mine

Socorro County, New Mexico

W. L. Emerick, Geologist
U. S. Geological Survey

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

August 14, 1956

Reviewed by
DMEA OPERATING COMMITTEE
8/27/56
(Date)

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. ROMELO[1] AND W. L. EMERICK[2]

The Campbell Farming Corporation, with offices in Albuquerque, New Mexico has applied for Defense Minerals Exploration Administration assistance to explore their property for uranium. The property is located in Sec. 1, T. 1 S., R. 2 E., Socorro County, New Mexico. Application for the governmental aid was received by the Defense Minerals Exploration Administration on May 7, 1956 and proposed the drilling of three inclined core-drill holes to explore their property. Total cost of the project was an estimated $13,250.00. Field examination of the property was carried out under docket DMEA-4274.

The presence of uranium at the Aqua Torres deposit was first noted in early 1955 by local prospectors. In June 1955 selective mining operations were started but all operations were terminated in October 1955 after 2 shipments of ore had been made to the Bluewater Receiving Station, Grants, New Mexico. Total production from the property from the 2 shipments of ore amounted to about 117 short tons averaging about 0.15 percent $U_3O_8$ and 0.11 percent $V_2O_5$.

Unknown parties drilled 2 diamond drill holes to depths of 40 and 60 feet in early 1956. No data is available on either hole.

At the mine area a northward-trending fault brings Pennsylvanian Magdalena limestone on the west against Younger Permian Abo sandstone on the east. The fault is covered and appears to be normal.

---

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

A silicified and brecciated shear zone, probably of a bedding plane shear type, occurs in the limestone adjacent to the fault.

Ore minerals, identified as carnotite and tyuyamunite, form a thin coating upon fracture faces of the shattered, silicified limestone in a limited area of the shear zone.

Owing to the limited area of mineralized material showing, low grade of mineral, and the shallow depth of excavation, no attempt was made to calculate reserves. Geologic conditions are such that a marked increase in either the extent or degree of mineralization with depth is not expected.

It is concluded that exploration of the applicant's property is not warranted and would not reveal a significant tonnage of minable ore. Denial of the requested aid in exploration of the Aqua Torres deposit is recommended.

DMEA-4274, (URANIUM) CAMPBELL FARMING CORP.
AQUA TORRES MINE
SOCORRO COUNTY, NEW MEXICO

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## INTRODUCTION

The Defense Minerals Exploration Administration received an application from the Campbell Farming Corporation, Albuquerque, New Mexico, for aid in exploration for uranium and vanadium at the Aqua Torres Mine, Socorro County, New Mexico. The application was docketed as DMEA-4274, reviewed by the Operating Committee and forwarded to the Field Team, Region III for a field examination of the property and a suitable report.

Proposed explorations to be completed in an estimated 2 months involved a small amount of bulldozer work, stripping and road building, and 3,250 feet of diamond drilling. The estimated total cost of the project was $13,250.00.

Field examinations were made July 1956 by W. L. Emerick and J. N. Faick, geologists, U. S. Geological Survey, and July 17, 1956 by T. M. Romslo, mining engineer, U. S. Bureau of Mines. Stanley W. Johnson, a mining engineer employed by the applicant, was present during both examinations.

## LOCATION AND ACCESSIBILITY

The Aqua Torres Mine is about 18 air miles northeast of Socorro, New Mexico and is described by the applicant as being in Sec. 6, T. 1 S., R. 3 E., Socorro County, New Mexico. Although the location could not readily be checked in the field the acceptable map of figure 1 indicates the correct location is sec. 1, T. 1 S., R. 2 E.

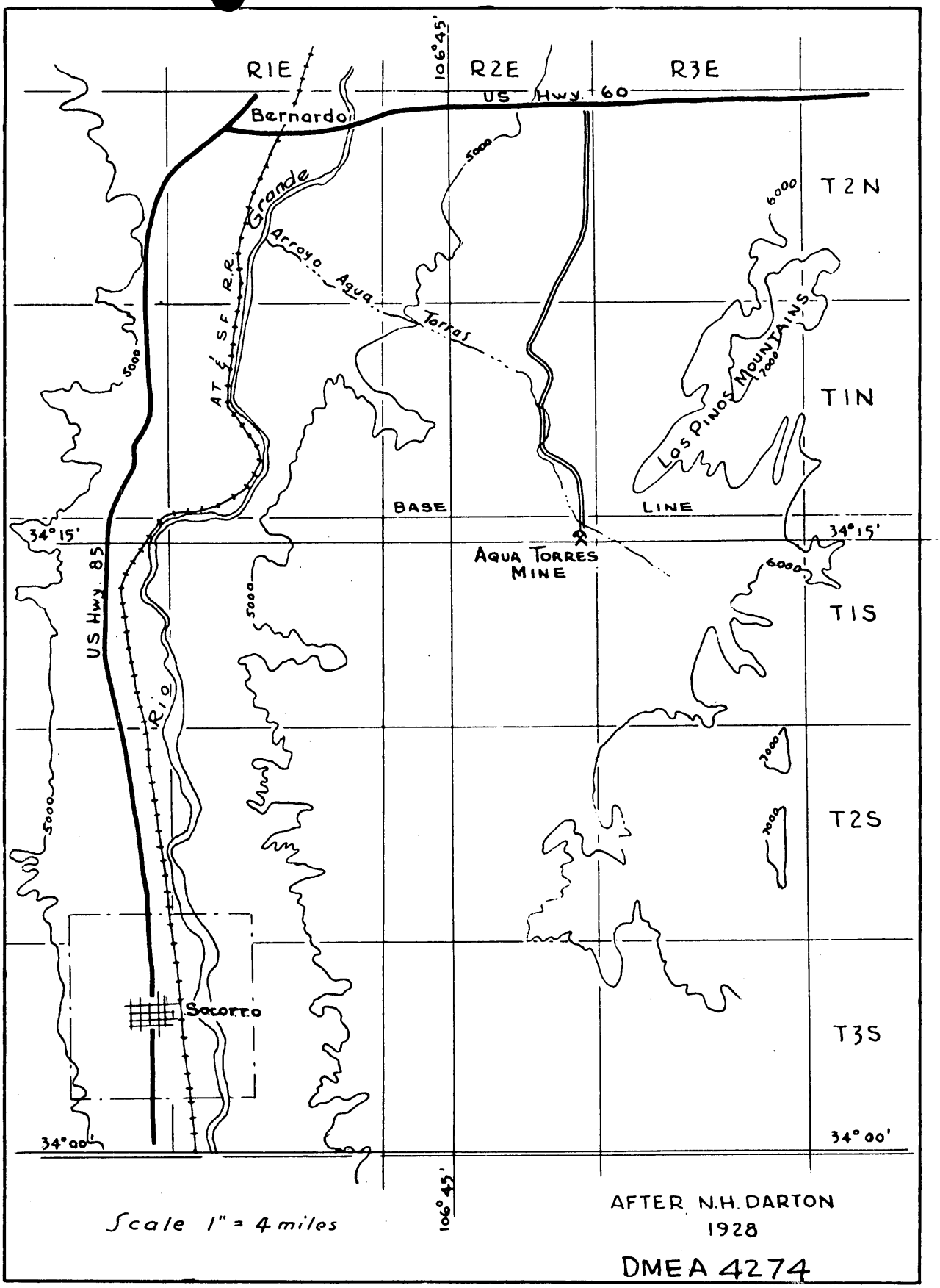



FIGURE 1.—SKETCH SHOWING LOCATION OF AQUA TORRES MINE, CAMPBELL FARMING CORPORATION, SOCORRO COUNTY, NEW MEXICO

It may be reached from Socorro by traveling 27 miles north on U. S. Highway 85 to its junction with U. S. Highway 60, thence 9 miles easterly on the latter highway to its intersection with an unmarked southerly trending dirt road. Proceed 13 miles on the dirt road to the mine. At a junction 7.1 miles from the highway the mine road branches to the left and skirts a windmill and corral at 0.3 miles from the mine.

## TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Aqua Torres deposit lies at an altitude of about 5,800 feet in an area of gently rolling hills at the southeast extremity of the northward trending Los Pinas Mountains. Drainage is westerly to the Rio Grande River, the sole perennial stream in the district.

Vegetation is confined to forage grasses.

Summers are mild and winters are not severe. Precipitation of about 10 inches annually occurs principally as heavy summer rainfalls and light snowfalls during the winter.

## HISTORY AND PRODUCTION

The presence of uranium at the Aqua Torres deposit was first noted in early 1955 by local prospectors. The prospectors, whose names Mr. Johnson could not recall, informed the applicant of their findings.

In June 1955, Grant Wilson, geologist, examined the property for the applicant and started selective mining operations. All operations were terminated in October 1955 after 2 shipments of ore had been made to the Bluewater Receiving Station, Grants, New Mexico.

The first ore shipment of about 7 short tons assayed 0.20 percent $U_3O_8$, 0.13 percent $V_2O_5$ and 6.9 percent CaO. The other ore shipment of about 110 short tons assayed 0.11 percent $U_3O_8$, 0.10 percent $V_2O_5$ and 9.8 percent CaO.

The next period of activity, according to Mr. Johnson, was in early 1956 when unknown parties diamond drilled 2 holes to depths of 40 and 60 feet. No data was available on either hole.

The trenches of figure 2 were excavated early in 1956. Since then, no work has been done.

There are no buildings or equipment of any kind on the property at present.

## EXTENT AND OWNERSHIP OF PROPERTY

The Aqua Torres deposit reportedly is within the boundaries of the La Joya Grant, Socorro County, New Mexico. The Campbell Farming Corporation, the applicant, reportedly owns all mineral and surface rights on this grant.

## GEOLOGY

The Aqua Torres mine lies at the extreme southwest corner of Los Pinos Mountains in Socorro County, New Mexico. Los Pinos Mountains are one of a group of northward-trending mountains on the eastern side of the Rio Grande Valley in central New Mexico. The geology of the district has been complicated by longitudinal thrust faults that in places have moved metamorphosed pre-Cambrian sediments against, or over, Pennsylvanian and Permian sediments. Normal faulting elsewhere

in the district has gently folded and tilted the Pennsylvanian and Permian sediments. Small areas of Tertiary and Quaternary igneous rocks occur in the district as flows, sills, or dikes.

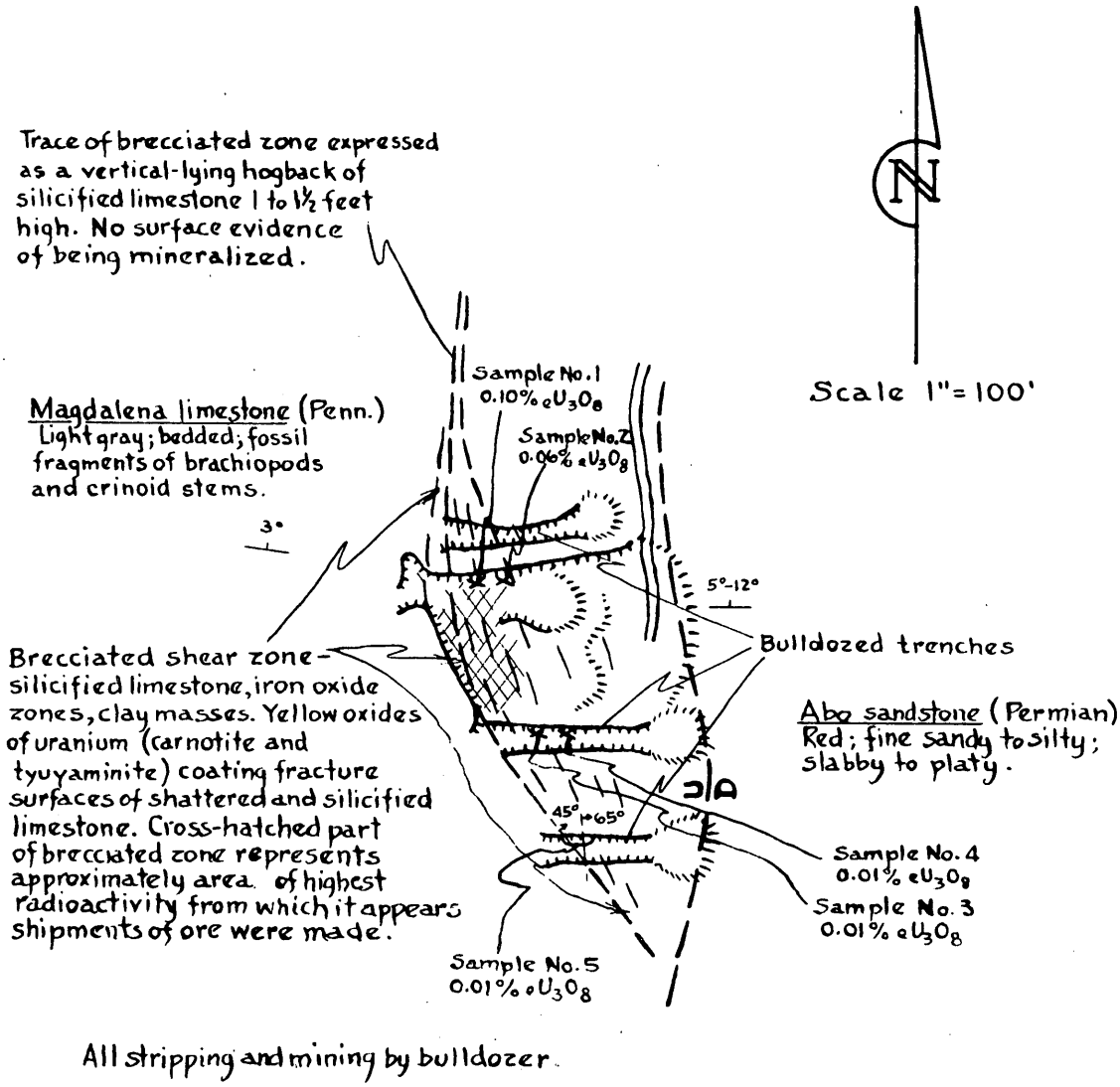
At the mine area (Figure 2) a northward-trending fault brings Pennsylvanian Magdalena limestone on the west against younger Permian Abo sandstone on the east. Both sediments dip northward at low angles. The fault is covered and appears to be normal. A brecciated shear zone composed of hard and shattered silicified limestone, uranium, vanadium, and iron oxides, and clay masses, occurs in the limestone adjacent to the fault.

Earlier workers[1/] in Los Pinos Mountains reported that silicified brecciated zones along bedding planes in the Pennsylvanian limestones were continuous with similar silicified zones along normal faults in the area. The breccia zones were formed by upward movement of the beds during initial folding, or by subsequent slipping of beds down dip. Silicification of the breccia zones probably came later during Tertiary time. The breccia zone of the La Joya mine is probably of the bedding plane type described in the earlier report. Low outcrops of upturned silicified limestone, for a distance of about 150 or 200 feet northward from the mined area, suggest a possibility of post-fault movement along bedding planes in the limestone.

The ore minerals, identified as carnotite and tyuyamunite[2/], form a thin coating upon the fracture faces of the shattered and silicified limestone in the breccia zone. It is probable, but undetermined, that

1/ Stark, J. T., and Dapples, E. C., 1946, Geology of the Los Pinos Mountains, New Mexico: Geol. Soc. of America Bull., V. 57, p. 1163.

2/ Wilson, R. E., AEC, 1956, written communication.




All stripping and mining by bulldozer.

DMEA 4274

FIGURE 2.- SKETCH OF MINE WORKINGS AND LOCATION OF SAMPLES, AQUA TORRES MINE, CAMPBELL FARMING CORPORATION, SOCORRO COUNTY, NEW MEXICO

the carnotite and tyuyamunite represent the oxidized products of a uranium-vanadium mineral, or minerals, introduced into the brecciated zone by hydrothermal processes after the limestone was silicified. Two northeast-dipping faults in the most southerly trench of the breccia zone (Figure 2) were examined for mineralized material but both faults were unmineralized. The area of the breccia zone in which the fracture faces are coated with the uranium-vanadium minerals is limited in length and width, and under prevailing geologic conditions it does not appear that extensive tonnages of ore grade material would be developed with depth.

Five E-W channel samples (Figure 2) were taken in the mined area and assayed by L. G. Evans in the laboratory of the Bureau of Mines, Tucson, Arizona. Results of the assays on the five samples were:

| Sample | Type | PERCENT a/ $eU_3O_8$ | PERCENT b/ $rU_3O_8$ |
|---|---|---|---|
| No. 1 | 5-foot channel cut | 0.10 | 0.11 |
| No. 2 | 7-foot " " | 0.06 | 0.07 |
| No. 3 | 7-foot " " | 0.01 | 0.02 |
| No. 4 | 8-foot " " | 0.01 | 0.02 |
| No. 5 | 12-foot " " | 0.01 | 0.02 |

a/ e - equivalent $U_3O_8$ - based on the natural radioactivity of the sample as compared to the radioactivity exhibited by a standard uranium source in equilibrium under the same geometry.

b/ r - equilibrium method - uranium content calculated from the ratio of the beta and gamma counts.

Vanadium, which probably averages about 0.11 percent $V_2O_5$, is associated with the uranium but owing to the low uranium results obtained in general from the samples, assays for vanadium were not made.

## ORE RESERVES

Owing to the limited area of mineralized material at the surface, the low grade of the mineral, and the shallow depth of excavation, no attempt was made to estimate reserves.

## PROPOSED EXPLORATIONS

Applicant desires to explore the deposit by core-drilling three inclined holes from the east side of the fault. This proposal is based upon the applicant's belief that the brecciated zone is a volcanic plug. The brecciated zones, however, probably represent shattering by movement along certain bedding planes in the Pennsylvanian limestone, and it is likely that inclined holes such as the applicant proposes would penetrate an unmineralized lower member of the Pennsylvanian sediments. Deeper trenching by the applicant along the west side of the bulldozed area in the zone of higher radioactivity, or sinking of a shallow shaft, would probably provide significant information on the extent of the mineralized material.

## CONCLUSIONS AND RECOMMENDATIONS

At the Aqua Torres deposit, oxides of uranium and vanadium form thin coatings on the fracture faces of shattered, silicified limestone in a breccia zone. At the surface the extent of the mineralized zone is small and the average uranium and vanadium content is low. Furthermore, geologic conditions are such that a marked increase in either the extent or degree of mineralization with depth is not expectable.

Denial of the requested aid in exploration of the Agua Torres deposit is recommended because the chances of indicating significant reserves of uranium ore are considered unfavorable.

4/4/56

DMEA
Date Rec'd
JUN 1 1956
BUREAU OF MINES
Denver, Colorado

May 31, 1956

RECEIVED
JUN 4 1956

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4274 (Uranium), Campbell Farming Corporation, (Aqua Torres Mine), Socorro County, New Mexico

Enclosed please find the application on Campbell Farming Corporation in the amount of $13,250.00.

A field examination and suitable report are required. The completed report should be forwarded directly to the Executive Officer with a copy of your memorandum of transmittal to this office.

JOHN F. SHAW

John F. Shaw

cc: W. M. Traver (3)
E. N. Harshman
J. N. Faick
Sec. Op. Comm. (2)

DMEA
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JUN 1 1956
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Denver, Colorado

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E. W. Harshman
J. W. Falck
Soc. Op. Comm. (2)

6-1-56

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

RECEIVED
JUN - 1 1956

May 28, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw (2) (With Brochure)
J. H. Faick

From: Field Team, Region III

Subject: DMEA Docket 4274 (Uranium) Campbell Farming Corporation, (Agua Torres Mine), Socorro County, New Mexico

Enclosed is the subject application in the amount of $13,250.00. A field Examination and suitable report are requested.

Enclosed for your information is a copy of a letter from the Chairman, Operating Committee dated May 23, 1956 with attached memoranda of review of the application by John E. Crawford and N. E. Nelson.

If you recommend an exploration program, we will require, in addition to the usual information, the following:

1. 12 copies of a map showing the mineralized exposures, sample locations and assay value, if any, and recommended work, all in relation to the boundaries of the property to be included in a recommended contract.

2. The Applicant should be requested to furnish bids from three drilling contractors, if drilling is to be done by a contractor.

DMEA Field Team, Region III

J. W. Townsend

By J. W. Townsend
Acting Executive Officer

Enclosures
RHC:ab
cc: Chair. Op. Comm. (2)
Harnbsen
Docket 4274
Chron.

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

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JUN - 1 1956

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DMEA Field Team, Region III

J. W. Townsend

By J. W. Townsend
Acting Executive Officer

Enclosures
EMC:ab
cc: Chair. Op. Comm. (2)
Harshman
Docket 4274
Caron.

700

FILE COPY
Surname:
F.L. Knouse
Kilgore R.
Gulliver
Martin
F.L. Knouse

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

MAY 23 1956

Mr. Thomas D. Campbell, President
Campbell Farming Corporation
323 Third Street, SW
Albuquerque, New Mexico

Re: Docket No. DMEA-4274 (Uranium)
Aqua Torres Mine
Socorro County, New Mexico

Dear Mr. Campbell:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to:

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

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/izm 5-22-56
cc to: Docket
Code 700
Mr. Knouse
Admr.'s Reading File
DMEA Field Team, Region III (2)

RCS.

700

FILE COPY
Surname:
F.L. Knouse
Martin
T.H. Kiilsgaard

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

MAY 23 1956

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

Re: Docket No. DMEA-4274 (Uranium)
Campbell Farming Corporation
Aqua Torres Mine
Socorro County, New Mexico

Dear Mr. Traver:

The captioned application is referred to your office for a field examination and report on the proposed project. A copy of the application was retained by your office.

Enclosed are copies of memoranda, dated May 11 and 18, 1956, from Mr. J. E. Crawford, USBM, and Mr. N. E. Nelson, USGS, respectively, relating to the subject project.

If the Field Team recommends an exploration program as submitted or modified by the Applicant, we will require, in addition to the usual information, the following:

1. Nine copies of a map showing the mineralized exposures, sample locations and assay value, if any, and recommended work, all in relation to the boundaries of the property to be included in a recommended contract.

2. The Applicant should be requested to furnish bids from three drilling contractors, if drilling is to be done by a contractor.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (2/6)

Enclosures

APPROVED:

/s/ Robert W. Geehan (2/6)
Member, Bureau of Mines

Thor H. Kiilsgaard (2/6)
Member, Geological Survey

FLKnouse/gla/izm 5-22-56
cc to: Docket
Code 700
Mr. Knouse
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.C.K.

5/21/56

IN REPLY REFER TO:

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

RECEIVED
MAY 18 1956

May 18, 1956

Re: DMEA 4274
Campbell Farming Corp.
Agua Torres Group
Socorro Co., New Mexico
Uranium

Memorandum

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

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

Subject: Review of application.

The applicant requests assistance in exploring by core and plug drilling a uranium-vanadium-bearing plug. As mapped, the plug, the nature of which is not given, is semicircular in plan. It intrudes sedimentary rocks and at the margin of the plug the intruded 'arkosic formation' is altered to chert and contains iron and uranium oxides. Uranium is found in the plug but the interior is considered noncommercial.

From the cherty contact zone shipments of ore have been made. Two settlement sheets show shipments as:--

| Date | Dry tons | To | Assay | | |
|---|---|---|---|---|---|
| | | | % $U_3O_8$ | $V_2O_5$ | $CaCO_3$ |
| Oct. 6, '55 | 7.470 | Grants, N. M. | 0.20 | 0.13 | 6.9 |
| Nov. 2, '55 | 109.784 | Grants, N. M. | 0.11 | 0.10 | 9.8 |

The proposed drilling would test the plug and the contact (chert) zone at depths of about 350 and 600 feet. A more effective drilling pattern could be devised.

Referral to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
MAY 18 1956

May 18, 1956

Re: DMEA 4274
Campbell Farming Corp.
Agua Tecrves Group
Socorro Co., New Mexico
Uranium

Memorandum

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

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| Date | Dry tons | To | Assay | | |
|---|---|---|---|---|---|
| | | | % $U_3O_8$ | $V_2O_5$ | $CaCO_3$ |
| Oct. 6, '55 | 7.470 | Grants, N. M. | 0.20 | 0.13 | 6.9 |
| Nov. 2, '55 | 109.764 | Grants, N. M. | 0.11 | 0.10 | 9.8 |

The proposed drilling would test the plug and the contact (chert) zone at depths of about 330 and 600 feet. A more effective drilling pattern could be devised.

Referral to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-5/18/56
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641; J. O. Kosted, 3210

5-14-56

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

RECEIVED
MAY 14 1956

May 11, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

Subject: Application for Assistance, DMEA Docket 4274, The Campbell Farming Corporation, Socorro County, N. Mex.

I have reviewed the application for assistance, DMEA Docket 4274, Campbell Farming Corporation, Socorro County, New Mexico, dated April 26, and received in this office May 4, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The Campbell Farming Corporation has applied for DMEA assistance to explore for uranium on property located within the boundaries of the La Joya Grant, Socorro County, N. Mex. The proposed project consists of 50 hours of bulldozing at a unit cost of $12.50, 2,450 feet of plug drilling at a unit cost of $2.50, and 800 feet of core drilling at a unit cost of $6. The total estimated cost of the project is $13,250.

The applicant has shipped a small amount of ore from the property. Ore purchase receipts indicate that the material consisted of 7.47 tons at 0.20 percent $U_3O_8$ and 109 tons at 0.11 percent $U_3O_8$.

Referral of the application to the field for possible examination and report is recommended.

John E. Crawford

John E. Crawford

Attachment

May 3, 1956
Subject: DMEA-4274
Re: Exploration Assistance
Agua Torres

Campbell Farming Corporation
323 Third Street, SW
Albuquerque, New Mexico

Gentlemen:

The receipt of your application dated April 26, 1956, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4274 and referred to the Rare & Misc. Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

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

April 30, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Campbell Farming Corporation (LaJoya Grant) Socorro County, New Mexico

Enclosed are three copies of the subject application in the amount of $13,250.00. One copy of the application is being retained in our file.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

RECEIVED
MAY 2 - 1956

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

April 30, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

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DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Enclosures

RECEIVED
MAY 2 - 1956

DMEA
Rec'd

MF-103
sed April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

APR 27 1956

BUREAU OF MINES
Denver, Colorado

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

*Not to be filled in by applicant*

Docket No. DMEA-4274
Metal or Mineral Uranium
Date Received 5-2-56
Estimated Cost $13,250.00
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: Campbell Farming Corporation, 323 Third Street, SW, Albuquerque, New Mexico. Montana corporation. Licensed to do business in New Mexico. Thomas D. Campbell, President, 323 Third Street, SW, Albuquerque, New Mexico. Floyd Slattery, Vice President, Hardin, Montana. Ola B. Maddox, Sec.-Treas., Hardin, Montana

(*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 This deposit is located in T13, N3W, Sec. 6, which is within the boundaries of La Joya Grant, Socorro County, New Mexico. The Campbell Farming Corporation owns all minerals and surface rights on this grant. This development will benefit the entire La Joya grant.

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

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

(*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.

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MAY 2 - 1956

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

(*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 60 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

## CERTIFICATION

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

Dated April 26, 1956

Cooch Mining Corporation
(Applicant)

By [signature]

President

**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

4. PHYSICAL DESCRIPTION

(a) Between August and October, 1955, a little over 100 tons of ore was shipped from this property. Most of the work done was stripping of the overburden from the deposit. The ore that was shipped was not shipped under a selective system, the result being marginal ore shipped.

At the present time we have a lessor on the property shipping only surface ore. He is not allowed to drill or go underground.

(b) Attached shipment record.

(c) This deposit appears to be hydrothermal in origin. Please note the drill that I have made for description of geological formations. The plug which is indicated on the map appears to be pushed up from depth. Along the west edge where you find an arkosic limestone outcropping, the zone is highly altered into chert, iron and uranium oxides. The chert carries good uranium and is commercial ore. As you go further away from this outer contact zone the grade drops off readily to non-commercial ore, but there is still uranium mineralization throughout the plug.

It appears to be as though the top of this plug is oxidized thoroughly by weathering and the uranium and vanadium have leached down, possibly to the water table which I have indicated by my drill program. By drilling my first hole so that it would intersect the plug at 250 feet in depth and then follow through the balance of the drill program if the property warrants it.

The AEC here in Albuquerque has inspected the property and told me that they were going to drill this property but at the present time did not have funds available. They stated that they would be happy to give geological assistance when the drilling program commenced.

The property can be reached by approximately 50 miles of oiled road and 15 miles of dirt road south of Albuquerque, New Mexico.

(d) Approximately 115 miles to Bluewater, New Mexico, where Anaconda has an AEC buying station. Approximately 30 miles to Belen, New Mexico.

(e) We have plenty of Mexican labor. There is a well close by with sufficient quantity of water for drilling purposes.

5. THE EXPLORATION PROJECT.

(a) Uranium and vanadium.

(b) Check map.

(c) Work will start within 60 days and will be completed within six months.

(d) Registered Prof. Eng., State of New Mexico #2115.

6. ESTIMATE OF COSTS.

| | | |
|---|---|---|
| D-7 Cat. @ $12.50 per hour with operator - 50 hrs. stripping and road building | | $625.00 |
| Drilling: | | |
| | 2450 ft. plug drilling @ $2.50 | 6,125.00 |
| | 800 ft. core drilling @ 6.00 | 4,800.00 |
| Surveying of holes | | 250.00 |
| Samples, assays and core boxes | | 250.00 |
| Wages for superintendent - 2 months @ $500.00 | | 1,000.00 |
| Pickup estimated 2,000 miles @ .10 per mile | | 200.00 |
| Total estimated cost | | $13,250.00 |

(h) If the drilling contractor cannot drill this project, he has the right to quit at any time. We are only going to pay him 80% per 100 feet of work done, blance when job is completed.

Contractor's name and address: Dial Exploration Company
1512 Cardenas Drive, NE
Albuquerque, New Mexico

If this contractor cannot do the job, we will get another one which may delay us in time only.

Respectfully yours,

Stanley W. Johnson

COPY

ANACONDA COPPER MINING COMPANY
Bluewater Receiving Station
New Mexico Operations

Ore Purchasing Agent For
United States Atomic Energy Commission

Bluewater Receiving Station. . . . . P. O. Box 638, Grants, N. M. .October.6. .1955
Liquidation No. 598. A. C. M. Lot No. 4361 Shippers Lot No. 1
Shipper Thomas D. Campbell . . . . . A. E. C. License No.P-2657
Address., 323 Third St., S. W., Albuquerque, New Mexico, Contract No. AT(49-1)-901
Type of Ore Sandstone Date Received August 17, 1955
Mining Claim Agua Torres Mining District Area 3 - West Central Pile No. T-36
County Socorro State: New Mexico

| A.C.M. Lot No. | Wet Weight Pounds | % $H_2O$ | Dry Weight Pounds | SETTLEMENT ASSAYS $U_3O_8$ | $V_2O_5$ | Ca $CO_3$ | CONTENTS POUNDS $U_3O_8$ | $V_2O_5$ | Ca $CO_3$ |
|---|---|---|---|---|---|---|---|---|---|
| 4361 | 15,260 | 2.10 | 14,940 | .20 | .13 | 6.9 | 29.88 | 19.42 | 1,030.86 |

| U308 | Per Lb. | Per Ton | Short Tons | Total Value |
|---|---|---|---|---|
| .20% - 4.0 # at | $ 3.50 | $ 14.00 | 7.47 | $ 104.58 |
| Development allowance 4.0 # at | .50 | 2.00 | 7.47 | 14.94 |
| Total U308 payment | | $ 16.00 | 7.47 | $ 119.52 |
| Haulage allowance 100 miles at 6¢ per wet ton mile | | | 7.63 | 45.78 |
| TOTAL NET PROCEEDS | | | | $ 165.30 |

Correct GIH Paid October 6, 1955
Checked REH Vo. No. OP-526
Approved FGH Check No. 18956 - Thomas D. Campbell

Contract No. AT(05-1)-500

November 2, 1955

Shippers Lot No. 2

Pile No. T-52

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4605 | 225,340 | 2.56 | 219,568 | .11 | .10 | 9.8 | 241.52 | 219.57 | 21,517.66 |

| U308 | Per Lb. | Per Ton | Short Tons | Total Value |
|---|---|---|---|---|
| .11% - 2.2 # at | $ 1.70 | $ 3.74 | 109,7840 | $ 410.59 |
| Development allowance 2.2 # at | .50 | 1.10 | 109,7840 | 120.76 |
| Total U308 payment | | $ 4,84 | 109,7840 | $ 531.35 |
| Haulage allowance 100 miles at 6¢ per wet ton mile | | | 112.6700 | 676.02 |
| TOTAL NET PROCEEDS | | | | $ 1,207.37 |

Correct ATT Paid November 2, 1955
Checked REH Vo. No. OP-540
Approved FCH Check No. 19710 - Thomas D. Campbell

A.E.C. Contract No. AT(05-1)-500

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

APR 27 1956

BUREAU OF MINES
Denver, Colorado

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

*Not to be filled in by applicant*

Docket No. DMEA-4274
Metal or Mineral Uranium
Date Received 5-2-56
Estimated Cost $13,850.00
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: Campbell Farming Corporation, 323 Third Street, SW, Albuquerque, New Mexico. Montana corporation. Licensed to do business in New Mexico. Thomas D. Campbell, President, 323 Third Street, SW, Albuquerque, New Mexico. Floyd Slattery, Vice President, Hardin, Montana. Ola B. Maddox, Sec.-Treas., Hardin, Montana

(*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 This deposit is located in T1S, R3E, Sec. 6, which is within the boundaries of La Joya Grant, Socorro County, New Mexico. The Campbell Farming Corporation owns all minerals and surface rights on this grant. This development will benefit the entire La Joya Grant.

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

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

(*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.

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MAY 2 - 1956

16—66551-1

Uranium and

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

(*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. 60 6

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[x] 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 April 26 6, 195...

Campbell Farming Corporation

(Applicant)

By President

**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

4. PHYSICAL DESCRIPTION

(a) Between August and October, 1955, a little over 100 tons of ore was shipped from this property. Most of the work done was stripping of the overburden from the deposit. The ore that was shipped was not shipped under a selective system, the result being marginal ore shipped.

At the present time we have a lessor on the property shipping only surface ore. He is not allowed to drill or go underground.

(b) Attached shipment record.

(c) This deposit appears to be hydrothermal in origin. Please note the drill that I have made for description of geological formations. The plug which is indicated on the map appears to be pushed up from depth. Along the west edge where you find an arkosic limestone outcropping, the zone is highly altered into chert, iron and uranium oxides. The chert carries good uranium and is commercial ore. As you go further away from this outer contact zone the grade drops off readily to non-commercial ore, but there is still uranium mineralization throughout the plug.

It appears to be as though the top of this plug is oxidized thoroughly by weathering and the uranium and vanadium have leached down, possibly to the water table which I have indicated by my drill program. By drilling my first hole so that it would intersect the plug at 250 feet in depth and then follow through the balance of the drill program if the property warrants it.

The AEC here in Albuquerque has inspected the property and told me that they were going to drill this property but at the present time did not have funds available. They stated that they would be happy to give geological assistance when the drilling program commenced.

The property can be reached by approximately 50 miles of oiled road and 15 miles of dirt road south of Albuquerque, New Mexico.

(d) Approximately 115 miles to Bluewater, New Mexico, where Anaconda has an AEC buying station. Approximately 30 miles to Belen, New Mexico.

(e) We have plenty of Mexican labor. There is a well close by with sufficient quantity of water for drilling purposes.

5. NEW MEXICO TIN PROJECT.

(a) Uranium and vanadium.

(b) Check map.

(c) Work will start within 60 days and will be completed within six months.

(d) Registered Prof. Eng., State of New Mexico 2115.

6. ESTIMATE OF COSTS.

| | | |
|---|---|---|
| D-7 Cat. @ $12.50 per hour with operator - 50 hrs. stripping and road building | | $625.00 |
| Drilling: | | |
| 2450 ft. plug drilling @ $2.50 | | 6,125.00 |
| 800 ft. core drilling @ 6.00 | | 4,800.00 |
| 3250 | | |
| Surveying of holes | | 250.00 |
| Samples, assays and core boxes | | 250.00 |
| Wages for superintendent - 2 months @ $500.00 | | 1,000.00 |
| Pickup estimated 2,000 miles @ .10 per mile | | 200.00 |
| Total estimated cost | | $13,250.00 |

(h) If the drilling contractor cannot drill this project, he has the right to quit at any time. We are only going to pay him 80% per 100 feet of work done, blance when job is completed.

Contractor's name and address: Dial Exploration Company
1512 Cardenas Drive, NE
Albuquerque, New Mexico

If this contractor cannot do the job, we will get another one which may delay us in time only.

Respectfully yours,

Stanley W. Johnson

COPY

ANACONDA COPPER MINING COMPANY
Bluewater Receiving Station
New Mexico Operations

Ore Purchasing Agent For
United States Atomic Energy Commission

Bluewater Receiving Station. . . . . P. O. Box 638, Grants, N. M. .October.6. .1955
Liquidation No. 598. A. C. M. lot No. 4361 Shippers Lot No. 1
Shipper Thomas D. Campbell . . . . . A. E. C. License No. T-2657
Address.. 323 Third St., S. W., Albuquerque, New Mexico, Contract No. AT(49-1)-901
Type of Ore Sandstone Date Received August 17, 1955
Mining Claim Agua Torres Mining District Area 3 - West Central File No. T-36
County Socorro State: New Mexico

| A.C.M. Lot No. | Wet Weight Pounds | % $H_2O$ | Dry Weight Pounds | SETTLEMENT ASSAYS $U_3O_8$ | $V_2O_5$ | Ca $CO_3$ | CONTENTS POUNDS $U_3O_8$ | $V_2O_5$ | Ca $CO_3$ |
|---|---|---|---|---|---|---|---|---|---|
| 4361 | 15,260 | 2.10 | 14,940 | .20 | .13 | 6.9 | 29.88 | 19.42 | 1,030.86 |

| U308 | Per Lb. | Per Ton | Short Tons | Total Value |
|---|---|---|---|---|
| .20% - 4.0 # at | $ 3.50 | $ 14.00 | 7.47 | $ 104.58 |
| Development allowance 4.0 # at | .50 | 2.00 | 7.47 | 14.94 |
| Total U308 payment | | $ 16.00 | 7.47 | $ 119.52 |
| Haulage allowance 100 miles at 6¢ per wet ton mile | | | 7.63 | 45.78 |
| TOTAL NET PROCEEDS | | | | $ 165.30 |

Correct GIH Paid October 6, 1955
Checked RHH Vo. No. OP-526
Approved FGH Check No. 18956 - Thomas D. Campbell

Contract No. AT(05-1)-500

November 2, 1955

Shippers Lot No. 2

File No. T-50

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4605 | 225,340 | 2.56 | 219,568 | .11 | .10 | 9.8 | 241.52 | 219.57 | 21,517.66 |

| U308 | Per Lb. | Per Ton | Short Tons | Total Value |
|---|---|---|---|---|
| .11% - 2.2 # at | $ 1.70 | $ 3.74 | 109,7840 | $ 410.59 |
| Development allowance 2.2 # at | .50 | 1.10 | 109,7840 | 120.76 |
| Total U308 payment | | $ 4,84 | 109,7840 | $ 531.35 |
| Haulage allowance 100 miles at 6¢ per wet ton mile | | | 112.6700 | 676.02 |
| TOTAL NET PROCEEDS | | | | $ 1,207.37 |

Correct ATT Paid November 2, 1955
Checked RHH Vo. No. OP-540
Approved FCH Check No. 19710 - Thomas D. Campbell

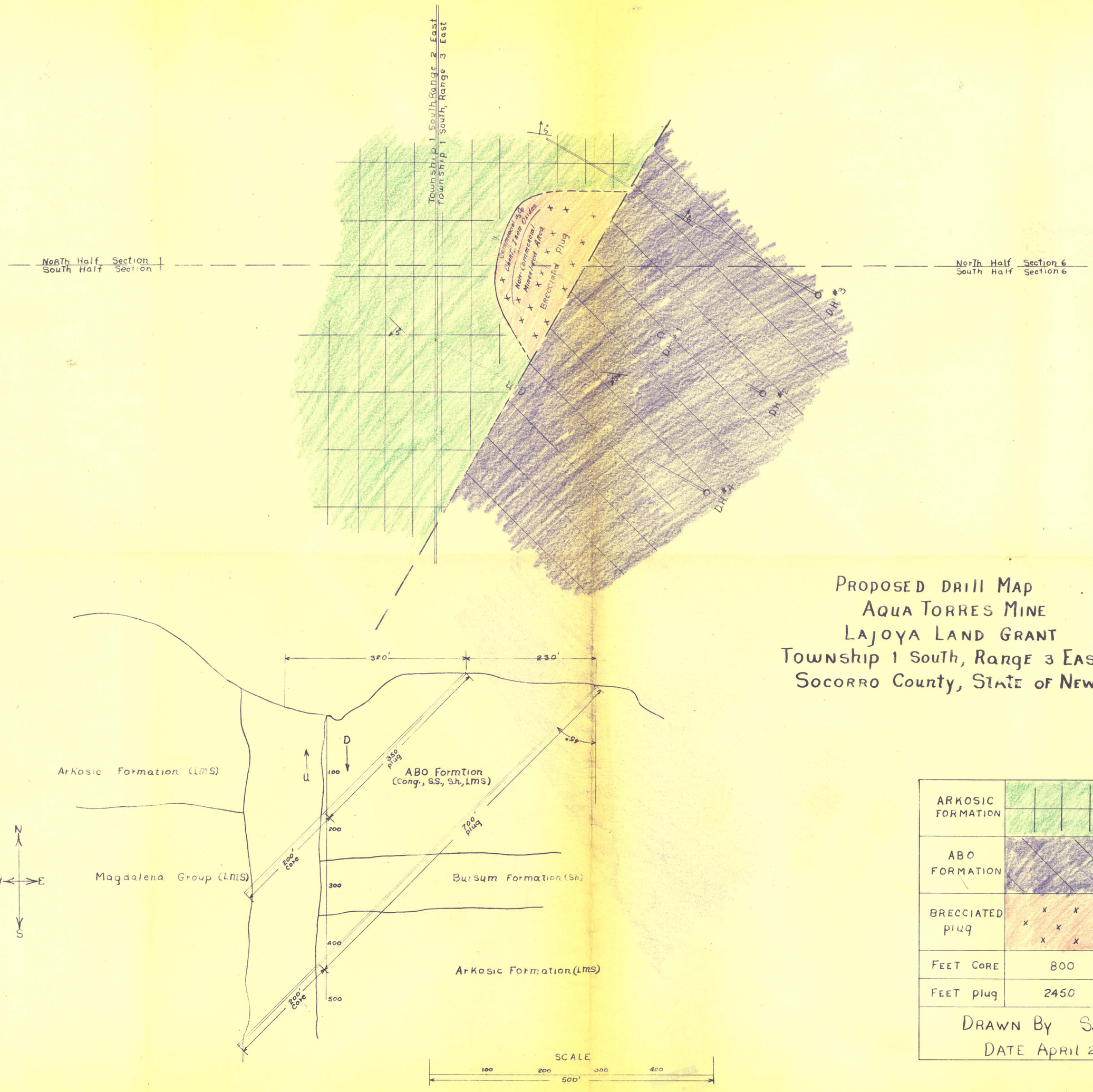
A.E.C. Contract No. AT(05-1)-500

OFFICIAL BUSINESS

U. S. GEOLOGICAL SURVEY
SOUTH 157 HOWARD ST.
SPOKANE 4, WASHINGTON

APR 12 9 PM
1956

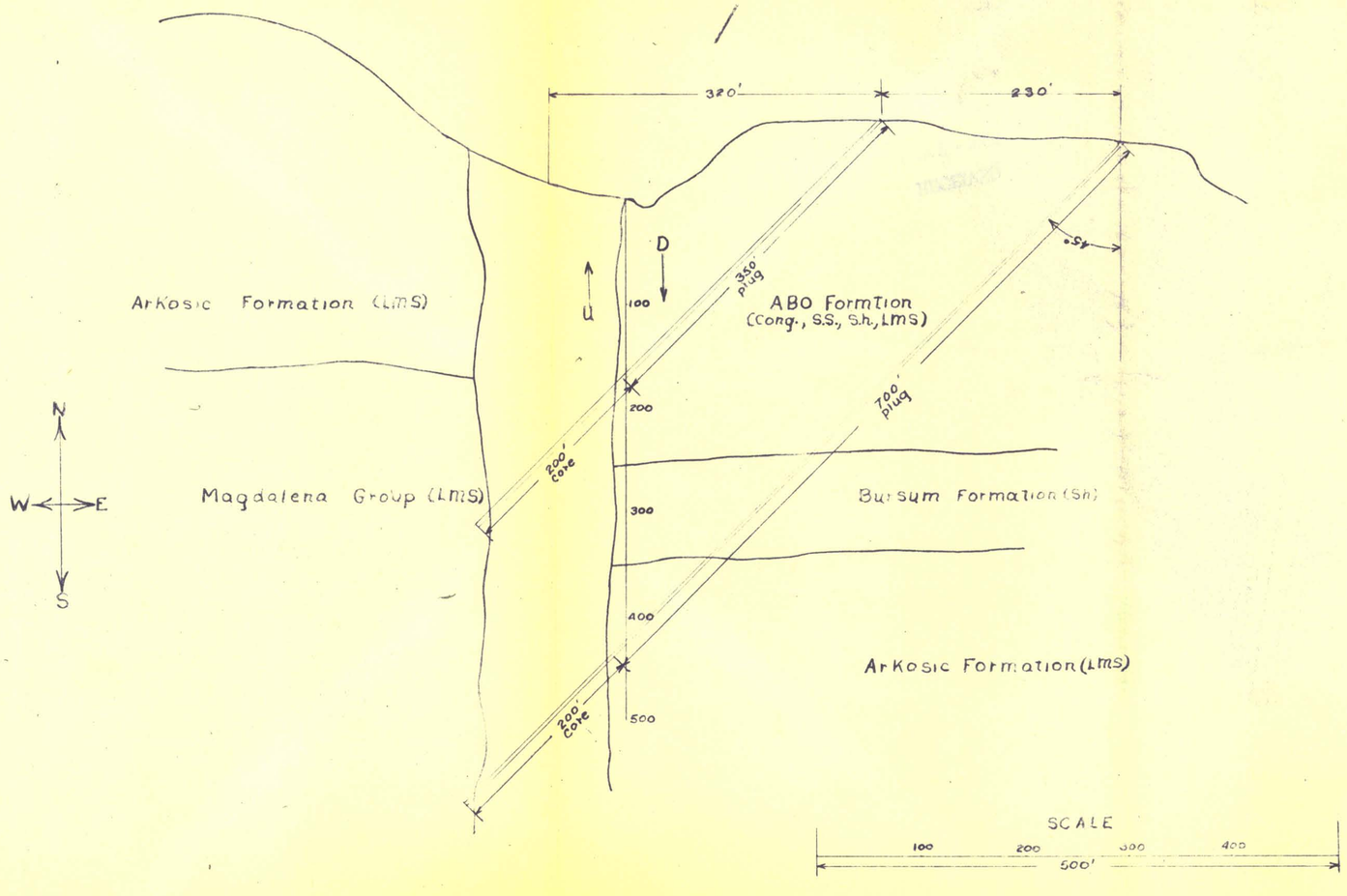
Mr. George C. Selfridge
Chairman, Operating Committee
Defense Minerals Explor. Admin.
Department of the Interior
Washington 25, D. C.




PROPOSED DRILL MAP
AQUA TORRES MINE
LAJOYA LAND GRANT
TOWNSHIP 1 SOUTH, RANGE 3 EAST
SOCORRO COUNTY, STATE OF NEW MEXICO

| | |
|---|---|
| ARKOSIC FORMATION | |
| ABO FORMATION | |
| BRECCIATED plug | |
| FEET CORE | 800 |
| FEET plug | 2450 |

DRAWN BY S.W.J.
DATE April 24, 1956




# PROPOSED DRILL MAP
## AQUA TORRES MINE
## LAJOYA LAND GRANT
## Township 1 South, Range 3 East
## Socorro County, State of New Mexico

| | |
|---|---|
| ARKOSIC FORMATION | |
| ABO FORMATION | |
| BRECCIATED plug | |
| FEET CORE | 800 |
| FEET plug | 2450 |

DRAWN BY S.W.J.

DATE April 24, 1956