DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

## CONTROLLED DOCUMENT

DMEA ~~DMA~~ Docket No. 2631

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EXPLORATION PROJECT

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

Copies to USBM, USGS, and Region IV.

| | | | |
|---|---|---|---|
| To: | Code 700, Rm. 4640 | Date | 7-28-52 |
| To: | (1) Opr. Com. Rm. 4624 | Date | 8-6-52 |
| To: | (2) Mr. Mittendorf | Date | |
| To: | (3) Mails & Files 4070 | Date | |
| To: | (4) Code 700, Rm. 4640 | Date | |
| To: | Op Com | Date | 8-6-52 |
| To: | Oper Com | Date | 7-29-53 |
| To: | Code 700 | Date | 8-28-53 |
| To: | Oper Com | Date | 9-30-53 |
| To: | Code 700 | Date | 11/3/53 |
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## DO NOT DETACH

## CONTROLLED DOCUMENT

FILE COPY
SURNAME:

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

OCT - 2 1953

Messrs. K. W. and Donald Andrews
P. O. Box 77
Hacla, Colorado

Re: Docket No. MEA-2631 (Uranium)
Martin Mesa
Montrose County, Colorado

Gentlemen:

Your application for aid in an exploration project docketed under the above number has been thoroughly reviewed by this Agency.

The proposed rim stripping is not considered practical as the lowest sandstone (1st rim) is already exposed in most places on your property; moreover, the maps submitted with your application show 2000 feet of the proposed stripping would not be on ground covered by your claims.

Data available to this office indicate that there is little chance of finding ore having a value commensurate with the cost of exploring the lowest ore zone (1st rim) where it is deeply buried.

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

A careful study of your proposal, together with all information available from other Government sources, indicates to us that the probability of disclosing minable ore reserves of acceptable grade by your proposed exploration program is not sufficiently promising to justify Government participation.

We regret that under these circumstances your application for exploration aid to the extent of 90% of $55,130.00 must be denied.

However, we recognize the possibility of finding some ore with shallow wagon drilling in the upper (4th rim) sandstone near the known deposits in the vicinity of the Crown Prince and Badger claims. As you have already done some drilling in this area, however, it would be necessary to make a careful study of the results of this work before additional exploration could be recommended and approved. If you are interested in the possibility of a DMEA project to explore in this part

R.C.G.
10-2-53

of your claims, please furnish us with complete information regarding the results of this drilling, including a map showing any mine workings, the location of holes already drilled, and the approximate locations of holes you would propose. We will be glad to consider the feasibility of such a program.

If we do not receive a reply to this letter by October 30, 1953, we will assume that you are no longer interested in exploration assistance and therefore your docket will be closed.

Sincerely yours,

Frank E. Johnson

Acting Administrator

FMMurphy/db
9-28-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs: H.D.Kaiser, Rm. 3641
A.P.Butler, Jr., Rm. 3212, OSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

9/24/53 gla.

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

224 New Customhouse
Denver 2, Colorado

September 18, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 2631 (Uranium), Andrews and Andrews, Montrose County, Colorado

The examining report covering Docket DMEA 2631 was forwarded to the Secretary to the Operating Committee on June 23, 1953. The Field Team recommended that the application be denied but stated that if the applicant would plan a new and modified exploration program and furnish the necessary information to support it, it would be considered.

We received a letter from the Chairman of the Operating Committee dated July 29, 1953, to which were attached copies of memoranda dated July 10 and July 16, 1953 from members of the Uranium Commodity Committee. These memoranda contained certain recommendations regarding this project.

R. P. Fischer, Geologist, U. S. Geological Survey, in a memorandum to the Chairman of the Operating Committee dated August 11, 1953, requested a statement of policy regarding this application. The Acting Chairman of the Operating Committee replied in a letter dated August 27, 1953. R. P. Fischer then contacted the applicants regarding a revised program.

It is doubtful if the applicants will submit a revised program. The original project was estimated to cost $55,130.00. Since this is not within the authority delegated to the Executive Officer, Region IV, we are enclosing six copies of a suggested letter of denial prepared for the signature of the DMEA Administrator.

Considerable time has been spent attempting to obtain a revised application from the applicants and we believe that it is now the responsibility of the applicant to make an effort to obtain the requested information if he is sincerely interested in a revised exploration project.

W. H. King

W. H. King

Enclosures

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

224 New Customhouse
Denver 2, Colorado

September 18, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 2631 (Uranium), Andrews and Andrews, Montrose County, Colorado

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W. H. King

W. H. King

Enclosures

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

Messrs. K. M. and Donald Andrews
P. O. Box 77
Nucla, Colorado

Re: Docket No. DMEA-2631 (Uranium)
Montrose County, Colorado

Gentlemen:

Reference is made to your recent application to the Defense Minerals Exploration Administration for assistance in exploring for uranium on your mining claims, Martin Mesa, Montrose County, Colorado. You proposed 14,280 feet of diamond drilling and 12,000 feet of rim stripping. The total cost of this work, including building necessary access roads, technical supervision, and incidentals was estimated to be $55,130.00.

After a field examination and careful consideration of your application and the geology of your claims, the examining team recommended that your application be denied for the following reasons:

1. Because the uranium bearing deposits in the lower part of the Salt Wash member of the Morrison formation are generally small and scattered, there appears to be little chance of finding ore having a value commensurate with the cost of exploring the lowest ore zone ("1st rim") where it is deeply buried. Furthermore, because of the sharp curves and steep grades on the road from the river (the probable source of water for the proposed work), diamond drilling might be difficult and expensive.

2. Because the lowest sandstone ("1st rim") is already well exposed in most places, and because about 2,800 feet of the proposed rim stripping would be off of ground covered by your claims, this part of the proposed work is not considered necessary nor entirely permissible.

On the other hand, the examining team recognized the possibility of finding some ore with shallow wagon drilling in the upper ("4th rim") sandstone near the known deposits in the vicinity of the Crown Prince and Badger claims. As you have already done some drilling in this area, however, it would be necessary to make a careful study of the results of this work before additional exploration could be recommended and approved. If you are interested in this possibility of a DMEA loan project to explore in this part of your claims, please furnish us with complete information regarding the results of this drilling, including a map

showing any mine workings, the location of holes already drilled, and the approximate locations of holes you would propose. We will be glad to consider the feasibility of such a program.

If we do not receive a reply to this letter ~~within thirty days~~ by October 30, 1958, we will assume that you are no longer interested in exploration assistance and therefore your docket will be closed.

Very truly yours,

Administrator

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

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P. O. Box 77
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Administrator

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

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P. O. Box 77
Nucla, Colorado

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Very truly yours,

Administrator

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

Messrs. K. M. and Donald Andrews
P. O. Box 77
Bedla, Colorado

Re: Docket No. DMEA-2631 (Uranium)
Montrose County, Colorado

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Very truly yours,

Administrator

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

K. M. and Donald Andrews
Box 77
A, Colorado

Re: Docket No. DMEA-2631 (Uranium)
Montrose County, Colorado

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Very truly yours,

Administrator

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

Messrs. K. M. and Donald Andrews
P. O. Box 77
Nucla, Colorado

Re: Docket No. DMEA-2631 (Uranium)
Montrose County, Colorado

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If we do not receive a reply to this letter within thirty days we will assume that you are no longer interested in exploration assistance and your docket will be closed.

Very truly yours,

Administrator

9/11/53 gla

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 9 - 1953

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

September 2, 1953

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

Dear Bill:

Reference is made to the letter of Ernest M. Ellis, of August 27, 1953, to you, a carbon copy of which you forwarded to me, regarding DMEA 2631, Andrews and Andrews, Montrose County, Colorado.

In line with the general suggestion in Mr. Ellis' letter, I have prepared a draft of a letter to Messrs. A. M. and Donald Andrews, suggesting the possibility of some DMEA exploration on their claims. This draft is prepared for your signature.

Through a carbon copy of this letter, I wish to express to Mr. Ellis my personal appreciation for the policy guidance he included in the last two paragraphs of his letter to you. These statements will be of considerable help to our group in handling other DMEA applications.

Sincerely yours,

R. P. Fischer

R. P. Fischer
Acting District Supervisor
Colorado Plateau District

Attachment

cc: A. H. Koschmann
W. H. Traver, Jr.
E. M. Ellis

MDL

D
R
A
F
T

Messrs. R. M. and Donald Andrews
Nucla, Colorado

Gentlemen:

Reference is made to your recent application to the Defense Minerals Exploration Administration for assistance in exploring for uranium on your mining claims, Martin Mesa, Montrose County, Colorado. You proposed 14,200 feet of diamond-drilling and 12,000 feet of rim-stripping. The total cost of this work, including building necessary access roads, technical supervision, and incidentals was estimated to be $55,130.

After a field examination and careful consideration of your application and the geology of your claims, the examining team recommended that your application be denied for the following reasons:

1. Because the uranium-bearing deposits in the lower part of the Salt Wash member of the Morrison formation are generally small and scattered, there appears to be little chance of finding ore having a value commensurate with the cost of exploring the lowest ore zone ("1st rim") where it is deeply buried. Furthermore, because of the sharp curves and steep grades on the road from the river (the probable source of water for the proposed work), diamond-drilling might be difficult and expensive.

2. Because the lowest sandstone ("1st rim") is already well exposed in most places, and because about 2,800 feet of the proposed rim-stripping would be off of ground covered by your claims, this part of the proposed work is not considered necessary nor entirely permissable.

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Sincerely yours,

W. H. King
Executive Officer
DMEA Field Team, Region IV

700
FILE COPY
SURNAME:

Murphy
Ellis
Witkowski

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

AUG 2 7 1953

Mr. [illegible] King
Executive Officer
Da[illegible] Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. [illegible]A-2651 (Uranium)
Andrews and Andrews
Martin Mesa
Montrose County, Colorado

Dear Mr. King:

Reference is made to Mr. [illegible] Fischer's memorandum to the Chairman of the Operating Committee dated August 11, 1953, containing questions concerning the above docketed application and also guidance on future similar cases.

In the subject application the proposed rim stripping work (aside from the fact that 2,000 feet of the proposed 12,000 feet of work is not on the Applicants' claims) would only expose short stretches of the 1st (or lowest) Salt Wash sandstone, the balance of this stratum being exposed on a natural rim in the subject area. Therefore, this proposed work should be denied.

The Field Team reports that only 5% of the uranium ore produced on the Plateau has come from the 1st Salt Wash sandstone stratum, and scarcely any from the 2nd and 3rd Salt Wash sandstone, the major producing stratum being the 4th (or upper) Salt Wash. This should be ample criteria for the denial of a costly drilling proposal to explore the 1st Salt Wash sandstone horizon, especially in this case where it has already been exposed to a large extent.

The various departments concerned with the recommendation of the subject application concur that the Applicants' proposal as submitted should be denied. However, a program of wagon drilling to explore the 4th (or upper) Salt Wash sandstone horizon might be considered, provided the Applicants will furnish complete information regarding the results of their drilling during the years 1951 and 1952 on the subject claims. The Applicants should also submit a sketch showing any mine workings on their property, and the approximate locations of the proposed wagon drill holes if they accept the modified proposal.

We suggest that the Field Office communicate the above conclusions to the Applicants.

In regard to Mr. Fischer's questions as to the responsibility of Government on cases similar to the above, applicants in many cases are not familiar with the exact data required by the Government and therefore fail to submit pertinent data although it is available. If during a field examination it is ascertained that the applicants have such data, the Field Team should request that it be submitted to the Government.

Also, if during a field examination the Government representatives conclude that the work proposed by the applicants is excessive and that a modified exploration program could achieve the desired objective, then the counter proposal should be discussed with the applicants at that time. If the applicants agree, the new recommended program should be made part of the Field Team report.

Sincerely yours,

Ernest Wm. Ellis
857

ACTING Chairman, Operating Committee

APPROVED:

M. H. Kline 857

Member, Bureau of Mines

D. M. Larrabee
857

Member, Geological Survey

cc to: Mr. R. L. Fischer,
Acting District Supervisor
Geological Survey, Grand Junction, Colo.
(thru DMEA Field Team, Region IV)

FMMurphy/gla 8-25-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs. A.P.Butler, Jr., Rm. 3206, GSA
H.D.Keiser, Rm. 3641
Ellis
Murphy

HHK 8-27-53

8/20/53 gla

IN REPLY REFER TO:

DEPARTMENT OF THE
Defense Minerals Administration
RECEIVED
AUG 17 1953

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colo.

August 11, 1953

Memorandum

To: George C. Selfridge, Chairman, Operating Committee

Through: A. H. Koschmann A.H.K.
W. H. King W.H.K.

From: R. P. Fischer

Subject: Docket DMEA 2631 (Uranium), Andrews and Andrews, Martin Mesa, Montrose County, Colorado

Reference is made to the letter of July 29 from you to W. H. King and to the memoranda from H. D. Keiser (July 10, 1953), and A. P. Butler (July 16) regarding the subject docket. Copies of these records were transmitted to W. M. Traver, Jr., and myself from W. H. King and A. H. Koschmann on August 3.

The property of the applicants was examined May 26 by R. L. Boardman, Geological Survey, and S. W. Hazen, Jr., and R. R. McClelland, Bureau of Mines. The applicants proposed (1) 12,000 feet of rim stripping by bulldozer; (2) 13,020 feet of diamond drilling to test four stratigraphic zones; and (3) an additional 1,260 feet of diamond drilling to test the two lower stratigraphic zones.

It was recommended that the application be denied because exposures were good along most of the rim proposed by stripping and because part of the work proposed would actually be off the applicants' property, and because the proposed drilling offered little chance of finding deposits large enough to be mined. All who have reviewed Boardman's report concur with his recommendation that the application be denied. The question has been raised, however, regarding the possibility of working with the applicant to prepare a modified program of exploration. This question was raised because Boardman recognized the possibility of some favorable ground on the part of the property that had already been partly or completely explored by the applicant.

I respectfully request a statement of DMEA policy to guide our action on this problem and on similar ones that might arise in the future.

913

In this case, the application stated that 45 holes were drilled in 1951, of which 28 penetrated ore. The application, however, did not show the drill-hole sites, nor furnish assay information. Additional drilling was done by the applicants, presumably in the same ground, in 1952, after the application was submitted. If the results of the 1951 drilling was as favorable as reported, it is difficult to understand why the ground has not been intensively mined by the applicants. Furthermore, it would appear to be indefensible to propose government exploration in ground already tested successfully by the applicants.

The question for which we require guidance is that of where responsibility lies. Is it the Government's responsibility to contact the applicants, request information regarding the results of drilling, perhaps attempt to prepare a map showing drill-hole sites, and then develop a plan for additional exploration if such seems to be warranted? It has been my assumption that these responsibilities lay mainly with the applicants.

In a case like this, it would appear desirable for a DMEA representative to write to the applicants, explaining briefly why the applicants' proposal was recommended for denial, but suggesting that another application in ground that appears to be favorable would be given appropriate consideration if adequate information regarding exploration already done is included with the application as per instructions.

If you agree with the approach suggested above and if you believe that such an approach should be taken by a field office, we will be glad to write a letter of this character to the applicants.

Your consideration of this problem, and a guiding policy statement, will be appreciated.

Sincerely yours,

R. P. Fischer

R. P. Fischer,
Acting District Supervisor

RPF/mlr

cc: A. H. Koschman
W. H. King
G.J. file
Reading file

AUG 1953
RECEIVED
U.S. Geological Survey
Mineral Deposits Branch
Denver

FILE COPY
SURNAME:

Docket
Murphy
Ellis
Selfridge
Kinkel
Hedges

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

JUL 29 1953

Mr. [illegible] L. King
Executive Officer
DMA Field Team, Region IV
221 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA-2631 (Uranium)
Andrews Andrews
Martin Mesa
Montrose County, Colorado

Dear Mr. King:

Enclosed are copies of memoranda, dated July 10 and 16, 1953, from the members of the Uranium Commodity Committee, Mr. H. L. Keiser, of the Bureau of Mines and Mr. Arthur P. Butler, Jr., of the Geological Survey, which contain recommendations concerning the captioned project.

Mr. Keiser and Mr. Butler concur with the recommendations made in the Field Team report and your memorandum, dated June 23, 1953, regarding a drastically modified exploration program in lieu of the one proposed by the applicant. Therefore, will you kindly discuss the modified proposal with the Applicant and then advise us of your conclusions.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

FMMurphy/lb
7-28-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs: H.D.Keiser, Rm. 3641
A.P.Butler, Jr., Rm. 3206, GSA
Ellis
Murphy

R.C.G.
7-29-53

7/8/53 gfa

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

224 New Customhouse
Denver 2, Colorado

June 23, 1953.

Memorandum

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

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2631 (Uranium), Andrews and Andrews, Martin Mesa, Montrose County, Colorado.

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

The applicants proposed 14,280 feet of diamond drilling and 12,000 feet of rim stripping at an estimated cost of $55,130.00.

The examiners conclude that a drastically modified program might be warranted provided that the applicants would furnish complete information regarding the results of the previous drilling in the Crown Prince-Badger area both in 1951 and 1952.

In the event that the applicants wish to plan a new and modified exploration program and furnish the necessary information to support it we would recommend giving it consideration.

We recommend that this application be denied.

W. H. King
W. H. King

E. N. Harshman
E. N. Harshman
For A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

7-3-53
(date)

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

200 New Customhouse
Denver 2, Colorado

June 9, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2631, Andrews and Andrews, Montrose County, Colorado.

Enclosed are 11 copies of the geologic report by R. L. Boardman of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

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

Enclosures (11)

Reviewed by
DMEA OPERATING COMMITTEE

7-3-53
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

June 5, 1953

Memorandum

To: A. H. Koschmann
Field Team, Region IV

From: R. P. Fischer
Colorado Plateau District office

Subject: DMEA Docket 2631, Andrews and Andrews, Montrose County, Colo.

Transmitted herewith are eleven copies of a geologic report on the mining claims of K. M. Andrews and Donald Andrews, Montrose County, Colo. The owners have applied for assistance in exploring for uranium deposits. They propose 14,280 feet of diamond drilling and 12,000 feet of rim stripping. This work, plus the necessary supervision and incidentals, was estimated to cost $55,130.

The attached report was prepared by R. L. Boardman and is based on a field examination made jointly with S. W. Hazen, Jr., and R. R. McLellan, Bureau of Mines, May 26, 1953. The general area of the claims has also been mapped and studied in detail by other members of the Geological Survey during the past several years, in connection with the program of work on behalf of the Atomic Energy Commission. Because of this work by the Survey, the AEC has made no detailed studies in the immediate area, though reconnaissance studies were made to support recommendations for an access road into the area. With this in view, the applicants' proposal was discussed with C. A. Rasor, Chief of the Mining Branch, AEC, who concurs in general with the recommendation and suggestion of Boardman.

Boardman concludes that the applicants' proposal has little chance of discovering ore having a value commensurate with the cost of the proposed work, and thus recommends that the application be denied. He outlines a suggestion for a smaller-scale exploration project, however, which he believes would justify Government participation.

I concur fully with Boardman's recommendation and suggestion.

R. P. Fischer

R. P. Fischer
Acting District Supervisor

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-3-53
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, Secretary

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

# DMEA DOCKET 2631, K. M. Andrews and Donald Andrews mining claims, Martin Mesa area, Paradox district, Montrose County, Colorado

Uranium

R. L. Boardman, Geologist
U. S. Geological Survey

June 1953

Reviewed by
DMEA OPERATING COMMITTEE

7-3-53
(date)

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Figure 1. Index map of part of the Colorado Plateau showing the approximate location of K. M. Andrews and Donald Andrews mining claims, Martin Mesa area, Paradox district, Montrose County, Colorado . . . . . 3

2. (Plate 1 of applicants' brochure) Plan of part of Martin Mesa showing claims, ore occurrences, and areas of proposed exploration . . . . . (in pocket)

DMEA DOCKET 2631

K. M. Andrews and Donald Andrews mining claims,
MARTIN MESA AREA, PARADOX DISTRICT,
MONTROSE COUNTY, COLORADO

## INTRODUCTION AND SUMMARY

K. M. Andrews and Donald Andrews of Nucla, Colo., have applied to the Defense Minerals Exploration Administration for a loan to explore for uranium on several of their mining claims in the Martin Mesa area, Paradox district, Montrose County, Colo. (fig. 1).

The claims were examined on May 26, 1953, by R. L. Boardman, geologist, U. S. Geological Survey, and S. W. Hazen, Jr., and R. R. McLellan, engineers, U. S. Bureau of Mines. The claims lie in parts of secs. 22, 23, 26, 27, and 28, T. 48 N., R. 18 W., New Mexico principal meridian. They are accessible by 4 miles of truck trail that crosses the Dolores River and joins Colorado Highway 141 about 9 miles northwest of Uravan. At least 1 mile of the truck trail is extremely rough and includes very steep grades and sharp turns.

The applicants propose 14,280 feet of diamond-drilling and 12,000 feet of rim stripping to explore for uranium in 16 mining claims. The total cost of the proposed exploratory work, including access road building, technical supervision, and smaller incidentals was estimated by the applicants to be $55,130.00.

As a result of the field examination, it is believed that the applicants' proposals for exploratory work (1) are unrealistic for the several reasons described in this report, and (2) have very little possibility of discovering commercial ore that would have a value commensurate with the cost of the proposed work. Because of these conclusions, it is recommended that the application, as it has been submitted, be denied. The possibility of Government participation in an alternative small-scale plan of exploration by wagon drilling is discussed briefly.

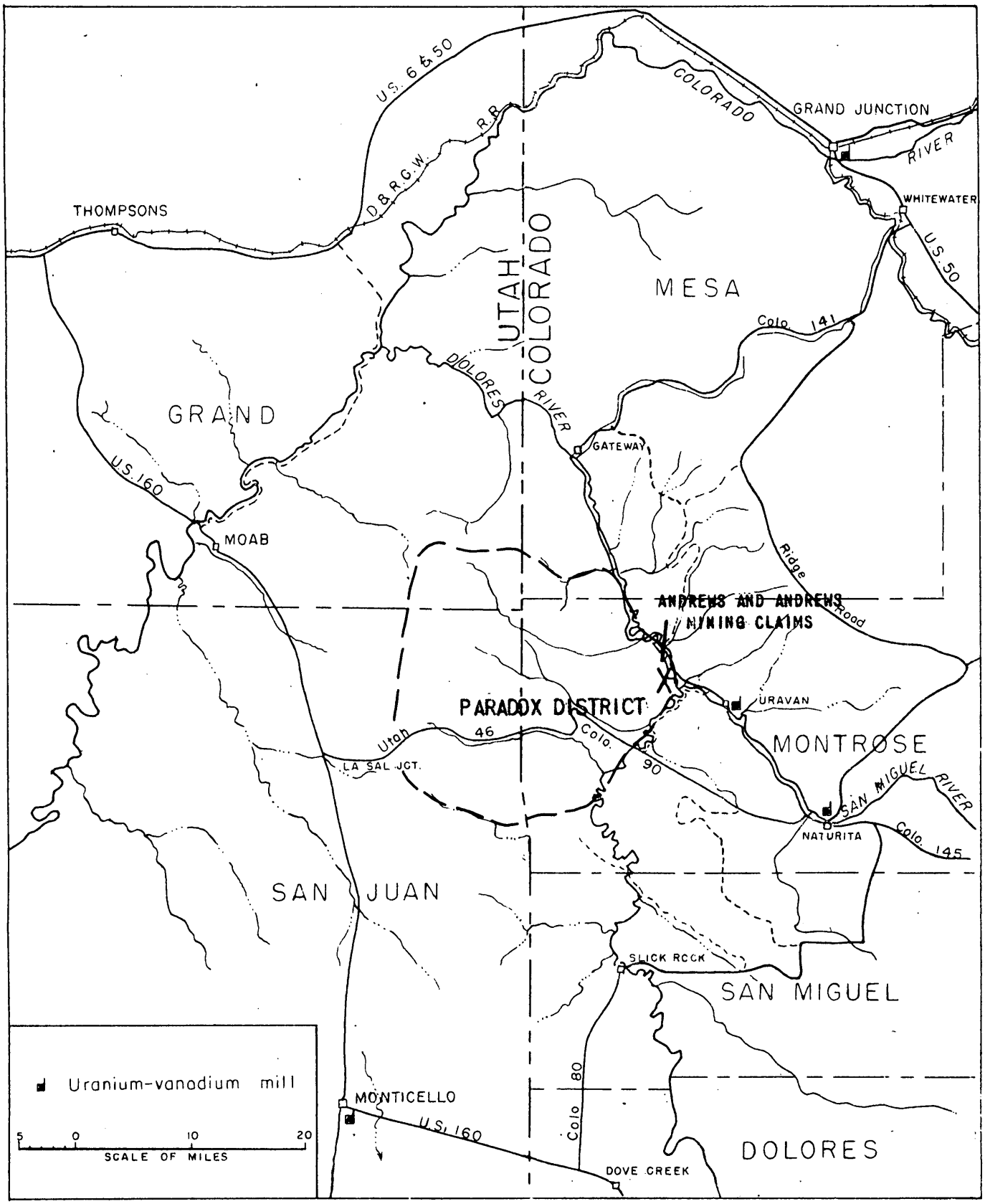


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING THE APPROXIMATE LOCATION OF THE K.M. ANDREWS AND DONALD ANDREWS MINING CLAIMS, MARTIN MESA AREA, PARADOX DISTRICT, MONTROSE COUNTY, COLORADO

A copy of Plate 1 of the applicants' brochure showing the location of the claims examined, reported ore occurrences, and the areas of proposed exploration is included as figure 2 in this report.

## GEOLOGY

The rocks exposed in the area included in the 16 claims consist of interbedded sandstone and mudstone strata of the Salt Wash member of the Jurassic Morrison formation. The Salt Wash member, in this area, attains a maximum thickness of about 300 feet, although the upper part of the Salt Wash has been eroded in much of the area. There are at least four distinct light-brown and red-brown sandstone beds or lenses of the Salt Wash that are exposed. They range in thickness from a few feet to about 40 feet, and form nearly vertical rims. The sandstone lenses are separated by predominantly red-brown mudstone beds as much as 50 feet thick. The mudstone beds form relatively steep slopes at the outcrop. Some gray-green mudstone is present in contact with the bottom (1st rim) and top (4th rim) sandstone lenses where the sandstone is mineralized.

The strata in this part of the Martin Mesa area strike about N. 40° W. and dip about 4° to 5° NE toward the axis of the northwest-trending San Miguel syncline.

In the area examined, mineralized material was observed in the 1st and 4th Salt Wash sandstone rims. No mineralized material was seen or has been reported in this area in the intervening 2nd and 3rd sandstone rims.

## ORE DEPOSITS

Uranium-vanadium ore has been produced from several deposits in the top (4th) Salt Wash sandstone rim on two of the applicants' sixteen claims examined (Crown Prince and Badger), and from one small deposit in the bottom (1st) sandstone rim on a third claim (Wildcat No. 2), (fig. 2).

The Crown Prince deposit consists of thin tabular ore bodies which thicken locally to form N and NW trending rolls. The bodies range from 5 to 20 feet wide, 25 to 100 feet long, and 1 to 2 feet thick. The Badger deposits consist of similar although smaller ore bodies and fewer rolls. The deposits in both claims contain remnants of what were probably richly mineralized logs. Abundant carbonaceous material is also present. The production from the Crown Prince workings probably has been about 300 to 400 short tons and from the Badger workings, 200 to 300 short tons. The grade of the ore produced from the Crown Prince and Badger may have averaged as much as 0.5 percent $U_3O_8$ and 3.0 percent $V_2O_5$, based on the applicants' production data since 1948. Very little reserves are present in either the Crown Prince or Badger workings.

The Wildcat No. 2 deposit, currently being mined, is a small tabular mass trending NW. To date, production from this deposit has been about 10 to 15 tons from about 50 feet of workings. The applicants have leased this deposit to a third party, and report that 162 pounds of uranium was produced from the deposit through July 1952. At the time of this field examination, the Wildcat No. 2 deposit appeared to be nearly mined out.

The uranium and vanadium minerals in all of the deposits examined are typical of those of the carnotite deposits of the Colorado Plateau. Copper minerals are relatively abundant with the uranium and vanadium minerals, particularly in the Wildcat No. 2 workings.

## PROPOSED EXPLORATION

In the discussion that follows, it is necessary to keep in mind a fundamental observation that bears directly on the appraisal of the applicants' proposed exploration. Uranium-vanadium production from the lowest (1st) Salt Wash sandstone rim throughout the Plateau has been very small, amounting to less than 5 percent of the total Plateau uranium-vanadium production. (It is erroneously stated in the applicants' brochure that extensive drilling on the Plateau has developed the largest ore bodies on the 1st rim.) There are no significant deposits in the 1st rim either in or near this part of the Martin Mesa area; there are several minor prospects in this rim which have yielded very small quantities of ore. Actually, the top Salt Wash sandstone rim contains the most productive deposits in the Plateau, and it is believed to offer much more promise for discovery of commercial ore in this part of the Martin Mesa area than any of the three lower rims.

no it is not!!

The applicants have proposed 12,000 feet of rim stripping along the lowest (1st) Salt Wash sandstone rim (fig. 2). Nearly all of the 1st sandstone rim is exposed in most of the area to be explored; the sandstone crops out in nearly vertical faces 20 to 40 feet or more thick. The proposed stripping will uncover at most, only very small sections of the 1st rim; nearly all of the bulldozing would have to be done along the steep talus-covered slopes below that rim. It is believed that there is little likelihood of finding new commercial ore bodies by the proposed rim stripping. Also, it is believed that the stripping should more

appropriately be considered access road building, as it is unrealistic as an exploration proposal. The stripping would provide access to the ten shows of mineralized material (fig. 2) reported by the applicants, but these deposits likely are small, similar to the Wildcat No. 2 deposit, and the value of the ore might not be commensurate with the cost of the stripping.

Approximately 2,800 feet of the proposed rim stripping in the Wilson-Crown Prince area as shown on figure 2 would be off of the applicants' claims.

The applicants also have proposed 13,020 feet of diamond drilling in the Crown Prince-Badger area and 1,260 feet of diamond drilling in the Red Rock area (fig. 2). Forty percent of the footage in both areas would be used in offset drill holes should mineralized material be discovered.

The drill holes in the Crown Prince-Badger area are proposed on 100-foot centers on a line parallel to the sandstone rims, and are planned to average 300 feet in depth in order to penetrate all four Salt Wash sandstone beds. This plan is unsound and unrealistic because it is believed that the deposits that may exist in the 1st, 2nd, and 3rd sandstone rims in this area are small, very erratically distributed, and not likely either to be found by holes on 100-foot centers or to be of commercial size.

no — 1st rim ore is best!!

The drill holes in the Red Rock area are proposed on 200-foot centers on a line parallel to the rims, and are planned to average 150 feet in depth in order to penetrate the 1st and 2nd sandstone rims. The top two sandstone rims have been eroded in this area. The appraisal of this plan of drilling is similar to the appraisal of the drilling proposed in the Crown Prince-Badger area, and it is not considered sound or realistic.

Diamond drilling on any of the applicants' claims in this part of the Martin Mesa area presents a difficult and expensive task because of the water haulage problem. The water for drilling must be hauled from the Dolores River a distance of 4 miles over a rough road that includes sharp curves and very steep grades.

For the foregoing reasons it is believed inadvisable for the DMEA to enter into a contract with the applicants to do the exploration they propose. The applicants' best chance of finding commercial ore bodies by exploring their claims in this part of the Martin Mesa area is by exploring the 4th sandstone rim, where that rim is believed to be favorable for ore. The exploration can be done satisfactorily and most economically by wagon drilling. According to their brochure, the applicants wagon-drilled 45 holes in the Crown Prince-Badger area in 1951; 28 of these holes are reported to have penetrated ore. Some additional wagon drilling was done in this area in 1952 by the applicants, subsequent to their application for DMEA assistance. Subject to an appraisal of the results of all the applicants' wagon drilling in this area, it is believed that the DMEA should favorably receive any sound and intelligent proposal by the applicants for assistance to explore the 4th rim by wagon drilling. The applicants should propose a specific plan for this drilling, if they are amenable to such a suggestion and need assistance to do the work.

## CONCLUSIONS AND RECOMMENDATIONS

A DMEA (uranium) field examination was made of several mining claims in the Martin Mesa area, Montrose County, Colo. The claims belong to K. M. Andrews and Donald Andrews.

The uranium deposits in the area examined are in the 1st and 4th sandstone rims of Salt Wash member of the Jurassic Morrison formation. No deposits are reported in the 2nd and 3rd sandstone rims. The major production from the area has been from deposits in the top (4th) rim where tabular ore bodies thicken locally to form rolls. The production from workings examined in this rim is estimated to be 500 to 700 short tons that may have averaged as much as 0.5 percent $U_3O_8$ and 3.0 percent $V_2O_5$. Very little reserves are present in these workings. The deposits in the bottom (1st) rim are believed to be small (a few tons to at most a few tens of tons) and very erratically distributed, based on the production and workings of the only deposit mined in this rim in the area examined, as well as on the size of deposits in this rim elsewhere on the Plateau.

The applicants propose (1) rim stripping (12,000 feet) of the 1st rim, (2) 13,020 feet of diamond drilling to test all four rims, and (3) an additional 1,260 feet of diamond drilling to test the 1st and 2nd rims. Because deposits in the 1st, 2nd, and 3rd rims are likely to be small and spotty, and because of the improbability of finding new commercial ore bodies in any of the bottom three sandstone rims, it is recommended that the DMEA application, as it has been submitted, be denied. There is a very good chance of finding new commercial ore bodies in the 4th rim in the area of the applicants' claims, if there is favorable ground that is unexplored in the area, and if the applicants would want and need DMEA assistance to explore this rim by wagon drilling.

7/21/53 gla

STANDARD FORM NO. 64

# Office Memorandum • UNITED STATES GOVERNMENT

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

DATE: July 16, 1953

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

SUBJECT: Field Team report, DMEA docket 2631 (uranium) K. M. Andrews and Donald Andrews, applicants, Nucla, Colo.; Andrews and Andrews claims, Secs. 22, 23, 26, 27 and 28, T. 48 N., R. 18 W., Montrose Couhty, Colorado.

## Review and Comment

The Field Team report concerning exploration on the property identified above has been reviewed and discussed with H. D. Keiser, Bureau of Mines member, Uranium Commodity Committee and J. O. Hosted, Atomic Energy Commission member.

## Proposal

The applicant proposed to do 12,000 feet of bulldozer stripping and 14,280 feet of diamond drilling to find uranium deposits in sandstone beds in the upper and lower parts of Saltwash member of the Morrison Formation.

## Comment

Examination by the Field Team disclosed that the proposed rim stripping was aimed at uncovering the lowest ore bearing sandstone of the Morrison, already fairly well exposed naturally. Ore bodies in this sandstone on the applicants property are small, a few tens of tons. Elsewhere on general region this sandstone also is not generally favorable for large ore bodies. The drilling proposed by the applicant was designed to test this lower sandstone as well as the top sandstone in part of the property. Ore deposits in the top sandstone are several hundred tons in size.

The field team concludes that the objective of exploring the lowest sandstone is unsound, because ore bodies in it are small and widely scattered and that Government assistance for exploration with this objective should be denied.

They point out, however, that, the applicant's best chance of finding ore are in the top sandstone, which could be effectively explored by wagon drilling. Both before and after applying for assistance the applicant has done some drilling of this kind with reported favorable results. The Field Team comments on this work as follows: "Subject to an appraisal of the results of all the applicants' wagon drilling in this area it is believed that DMEA should favorably receive any sound and intelligent proposal by the applicants for assistance to explore the 4th rim by wagon drilling."

## Recommendations

The conclusions of the Field Team with respect to the work proposed by the applicant appear sound, and I concur that the application as filed should be denied. In view, of the Field Team's opinion, however, that some wagon drilling might be warranted, I recommend that prior to formal denial the present report be returned to the Field Team with the request that a small scale exploration project mentioned by the Field Team be discussed with the applicant. If the discussion reaches a suitable conclusion, I suggest that the report be revised and resubmitted.

Copy to E. Wm. Ellis (2)

IN REPLY REFER TO:

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

Wm. Ellis, DMEA Member
Uranium Commodity Committee

July 16, 1953

Arthur P. Butler, Jr., USGS Member
Uranium Commidity Committee
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Copy to E. Wm. Ellis (2)

7/14/53 gla

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 13 1953

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

July 10, 1953

Memorandum

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

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Final Report, DMEA Docket 2631, Andrews & Andrews, Martin Mesa, Montrose County, Colorado.

I have reviewed the subject report and discussed it with Arthur P. Butler, Geological Survey Member, and Joseph O. Hosted, representative of the Atomic Energy Commission.

I concur with the Field Team that the application as filed should be denied, but prior to its formal denial I recommend that the subject report be returned to the Field Team with the request that the smaller-scale exploration project that may warrant an exploration loan be discussed with the applicant, and that, if such discussions reach a suitable conclusion, the report be revised accordingly and resubmitted.

The copy of the report in my possession will be forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto; it may be collected through that office if so desired.

H. D. Keiser

H. D. Keiser

6/30/53 gla

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

224 New Customhouse
Denver 2, Colorado

June 23, 1953.

Memorandum

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

From: Field Team, Region IV

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In the event that the applicants wish to plan a new and modified exploration program and furnish the necessary information to support it we would recommend giving it consideration.

We recommend that this application be denied.

W. H. King
W. H. King

E. N. Harshman
E. N. Harshman
For A. H. Koschmann

Enclosures

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

200 New Customhouse
Denver 2, Colorado

June 9, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

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

Enclosures (11)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

June 5, 1953

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From: R. P. Fischer
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I concur fully with Boardman's recommendation and suggestion.

R. P. Fischer

R. P. Fischer
Acting District Supervisor

Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, Secretary

Get 7/2.9/53

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

# DMEA DOCKET 2631, K. M. Andrews and Donald Andrews mining claims, Martin Mesa area, Paradox district, Montrose County, Colorado

## Uranium

R. L. Boardman, Geologist
U. S. Geological Survey

June 1953

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DMEA DOCKET 2631

K. M. Andrews and Donald Andrews mining claims,
MARTIN MESA AREA, PARADOX DISTRICT,
MONTROSE COUNTY, COLORADO

## INTRODUCTION AND SUMMARY

K. M. Andrews and Donald Andrews of Nucla, Colo., have applied to the Defense Minerals Exploration Administration for a loan to explore for uranium on several of their mining claims in the Martin Mesa area, Paradox district, Montrose County, Colo. (fig. 1).

The claims were examined on May 26, 1953, by R. L. Boardman, geologist, U. S. Geological Survey, and S. W. Hazen, Jr., and R. R. McLellan, engineers, U. S. Bureau of Mines. The claims lie in parts of secs. 22, 23, 26, 27, and 28, T. 48 N., R. 18 W., New Mexico principal meridian. They are accessible by 4 miles of truck trail that crosses the Dolores River and joins Colorado Highway 141 about 9 miles northwest of Uravan. At least 1 mile of the truck trail is extremely rough and includes very steep grades and sharp turns.

The applicants propose 14,280 feet of diamond-drilling and 12,000 feet of rim stripping to explore for uranium in 16 mining claims. The total cost of the proposed exploratory work, including access road building, technical supervision, and smaller incidentals was estimated by the applicants to be $55,130.00.

As a result of the field examination, it is believed that the applicants' proposals for exploratory work (1) are unrealistic for the several reasons described in this report, and (2) have very little possibility of discovering commercial ore that would have a value commensurate with the cost of the proposed work. Because of these conclusions, it is recommended that the application, as it has been submitted, be denied. The possibility of Government participation in an alternative small-scale plan of exploration by wagon drilling is discussed briefly.

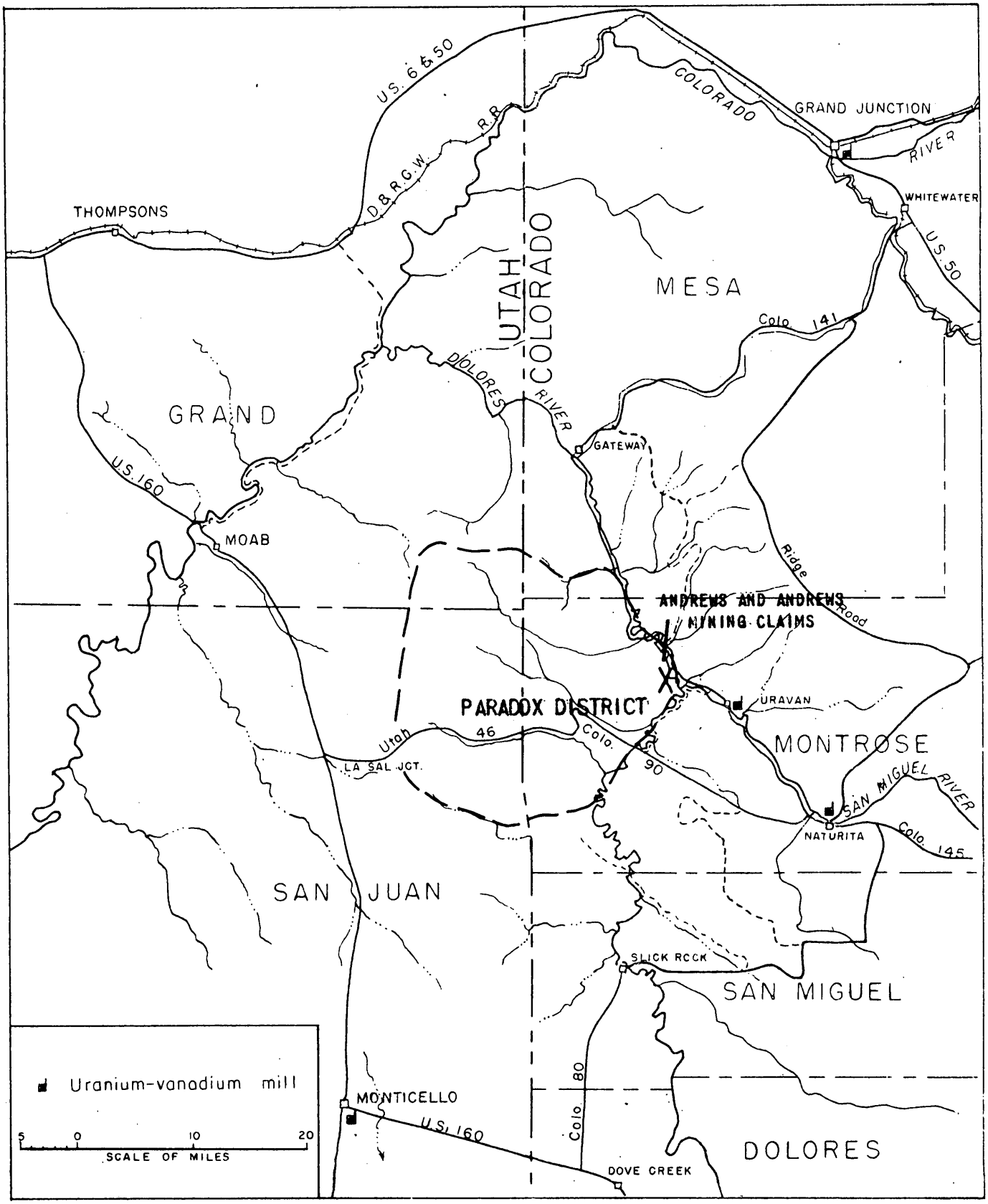


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING THE APPROXIMATE LOCATION OF THE K.M. ANDREWS AND DONALD ANDREWS MINING CLAIMS, MARTIN MESA AREA, PARADOX DISTRICT, MONTROSE COUNTY, COLORADO

A copy of Plate 1 of the applicants' brochure showing the location of the claims examined, reported ore occurrences, and the areas of proposed exploration is included as figure 2 in this report.

## GEOLOGY

The rocks exposed in the area included in the 16 claims consist of interbedded sandstone and mudstone strata of the Salt Wash member of the Jurassic Morrison formation. The Salt Wash member, in this area, attains a maximum thickness of about 300 feet, although the upper part of the Salt Wash has been eroded in much of the area. There are at least four distinct light-brown and red-brown sandstone beds or lenses of the Salt Wash that are exposed. They range in thickness from a few feet to about 40 feet, and form nearly vertical rims. The sandstone lenses are separated by predominantly red-brown mudstone beds as much as 50 feet thick. The mudstone beds form relatively steep slopes at the outcrop. Some gray-green mudstone is present in contact with the bottom (1st rim) and top (4th rim) sandstone lenses where the sandstone is mineralized.

The strata in this part of the Martin Mesa area strike about N. 40° W. and dip about 4° to 5° NE toward the axis of the northwest-trending San Miguel syncline.

In the area examined, mineralized material was observed in the 1st and 4th Salt Wash sandstone rims. No mineralized material was seen or has been reported in this area in the intervening 2nd and 3rd sandstone rims.

## ORE DEPOSITS

Uranium-vanadium ore has been produced from several deposits in the top (4th) Salt Wash sandstone rim on two of the applicants' sixteen claims examined (Crown Prince and Badger), and from one small deposit in the bottom (1st) sandstone rim on a third claim (Wildcat No. 2), (fig. 2).

The Crown Prince deposit consists of thin tabular ore bodies which thicken locally to form N and NW trending rolls. The bodies range from 5 to 20 feet wide, 25 to 100 feet long, and 1 to 2 feet thick. The Badger deposits consist of similar although smaller ore bodies and fewer rolls. The deposits in both claims contain remnants of what were probably richly mineralized logs. Abundant carbonaceous material is also present. The production from the Crown Prince workings probably has been about 300 to 400 short tons and from the Badger workings, 200 to 300 short tons. The grade of the ore produced from the Crown Prince and Badger may have averaged as much as 0.5 percent $U_3O_8$ and 3.0 percent $V_2O_5$, based on the applicants' production data since 1948. Very little reserves are present in either the Crown Prince or Badger workings.

The Wildcat No. 2 deposit, currently being mined, is a small tabular mass trending NW. To date, production from this deposit has been about 10 to 15 tons from about 50 feet of workings. The applicants have leased this deposit to a third party, and report that 162 pounds of uranium was produced from the deposit through July 1952. At the time of this field examination, the Wildcat No. 2 deposit appeared to be nearly mined out.

The uranium and vanadium minerals in all of the deposits examined are typical of those of the carnotite deposits of the Colorado Plateau. Copper minerals are relatively abundant with the uranium and vanadium minerals, particularly in the Wildcat No. 2 workings.

## PROPOSED EXPLORATION

In the discussion that follows, it is necessary to keep in mind a fundamental observation that bears directly on the appraisal of the applicants' proposed exploration. Uranium-vanadium production from the lowest (1st) Salt Wash sandstone rim throughout the Plateau has been very small, amounting to less than 5 percent of the total Plateau uranium-vanadium production. (It is erroneously stated in the applicants' brochure that extensive drilling on the Plateau has developed the largest ore bodies on the 1st rim.) There are no significant deposits in the 1st rim either in or near this part of the Martin Mesa area; there are several minor prospects in this rim which have yielded very small quantities of ore. Actually, the top Salt Wash sandstone rim contains the most productive deposits in the Plateau, and it is believed to offer much more promise for discovery of commercial ore in this part of the Martin Mesa area than any of the three lower rims.

The applicants have proposed 12,000 feet of rim stripping along the lowest (1st) Salt Wash sandstone rim (fig. 2). Nearly all of the 1st sandstone rim is exposed in most of the area to be explored; the sandstone crops out in nearly vertical faces 20 to 40 feet or more thick. The proposed stripping will uncover at most, only very small sections of the 1st rim; nearly all of the bulldozing would have to be done along the steep talus-covered slopes below that rim. It is believed that there is little likelihood of finding new commercial ore bodies by the proposed rim stripping. Also, it is believed that the stripping should more

appropriately be considered access road building, as it is unrealistic as an exploration proposal. The stripping would provide access to the ten shows of mineralized material (fig. 2) reported by the applicants, but these deposits likely are small, similar to the Wildcat No. 2 deposit, and the value of the ore might not be commensurate with the cost of the stripping.

Approximately 2,800 feet of the proposed rim stripping in the Wilson-Crown Prince area as shown on figure 2 would be off of the applicants' claims.

The applicants also have proposed 13,020 feet of diamond drilling in the Crown Prince-Badger area and 1,260 feet of diamond drilling in the Red Rock area (fig. 2). Forty percent of the footage in both areas would be used in offset drill holes should mineralized material be discovered.

The drill holes in the Crown Prince-Badger area are proposed on 100-foot centers on a line parallel to the sandstone rims, and are planned to average 300 feet in depth in order to penetrate all four Salt Wash sandstone beds. This plan is unsound and unrealistic because it is believed that the deposits that may exist in the 1st, 2nd, and 3rd sandstone rims in this area are small, very erratically distributed, and not likely either to be found by holes on 100-foot centers or to be of commercial size.

The drill holes in the Red Rock area are proposed on 200-foot centers on a line parallel to the rims, and are planned to average 150 feet in depth in order to penetrate the 1st and 2nd sandstone rims. The top two sandstone rims have been eroded in this area. The appraisal of this plan of drilling is similar to the appraisal of the drilling proposed in the Crown Prince-Badger area, and it is not considered sound or realistic.

Diamond drilling on any of the applicants' claims in this part of the Martin Mesa area presents a difficult and expensive task because of the water haulage problem. The water for drilling must be hauled from the Dolores River a distance of 4 miles over a rough road that includes sharp curves and very steep grades.

For the foregoing reasons it is believed inadvisable for the DMEA to enter into a contract with the applicants to do the exploration they propose. The applicants' best chance of finding commercial ore bodies by exploring their claims in this part of the Martin Mesa area is by exploring the 4th sandstone rim, where that rim is believed to be favorable for ore. The exploration can be done satisfactorily and most economically by wagon drilling. According to their brochure, the applicants wagon-drilled 45 holes in the Crown Prince-Badger area in 1951; 28 of these holes are reported to have penetrated ore. Some additional wagon drilling was done in this area in 1952 by the applicants, subsequent to their application for DMEA assistance. Subject to an appraisal of the results of all the applicants' wagon drilling in this area, it is believed that the DMEA should favorably receive any sound and intelligent proposal by the applicants for assistance to explore the 4th rim by wagon drilling. The applicants should propose a specific plan for this drilling, if they are amenable to such a suggestion and need assistance to do the work.

## CONCLUSIONS AND RECOMMENDATIONS

A DMEA (uranium) field examination was made of several mining claims in the Martin Mesa area, Montrose County, Colo. The claims belong to K. M. Andrews and Donald Andrews.

The uranium deposits in the area examined are in the 1st and 4th sandstone rims of Salt Wash member of the Jurassic Morrison formation. No deposits are reported in the 2nd and 3rd sandstone rims. The major production from the area has been from deposits in the top (4th) rim where tabular ore bodies thicken locally to form rolls. The production from workings examined in this rim is estimated to be 500 to 700 short tons that may have averaged as much as 0.5 percent $U_3O_8$ and 3.0 percent $V_2O_5$. Very little reserves are present in these workings. The deposits in the bottom (1st) rim are believed to be small (a few tons to at most a few tens of tons) and very erratically distributed, based on the production and workings of the only deposit mined in this rim in the area examined, as well as on the size of deposits in this rim elsewhere on the Plateau.

The applicants propose (1) rim stripping (12,000 feet) of the 1st rim, (2) 13,020 feet of diamond drilling to test all four rims, and (3) an additional 1,260 feet of diamond drilling to test the 1st and 2nd rims. Because deposits in the 1st, 2nd, and 3rd rims are likely to be small and spotty, and because of the improbability of finding new commercial ore bodies in any of the bottom three sandstone rims, it is recommended that the DMEA application, as it has been submitted, be denied. There is a very good chance of finding new commercial ore bodies in the 4th rim in the area of the applicants' claims, if there is favorable ground that is unexplored in the area, and if the applicants would want and need DMEA assistance to explore this rim by wagon drilling.

DOCKET

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

224 New Customhouse
Denver 2, Colorado

April 6, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

Mr. Donald A. Andrews
Box 77
Nucla, Colorado

Re: Docket DMEA-2631

Dear Mr. Andrews:

This will acknowledge receipt of your letter dated April 1 stating that you have acquired a lease from the Atomic Energy Commission on your claims covered by the conflicting oil and gas lease.

We are this day sending your application to the field examiners who will notify you prior to the field examination so that you or your representative may be present at the time of the field examination.

Please forward this office a signed copy of your lease with the Atomic Energy Commission.

Very truly yours,

W. H. King

W. H. King
Executive Officer, DMEA
Field Team, Region IV

HMC:jp
cc Subject
Chron
Sec. to Oper. Committee (2)
WMTraver
AHKoschmann

4/10/53 gla

224 New Customhouse
Denver 2, Colorado

April 6, 1953

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Defense Minerals Administration
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APR 9 1953

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Field Team, Region IV

HMC:jp
cc Subject
Chron
Sec. to Oper. Committee (2)
WMTraver
AHKoschmann

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

224 New Customhouse
Denver 2, Colorado

March 20, 1953

Mr. Keith M. Andrews
Mr. Donald Andrews
P. O. Box 77
Nucla, Colorado

Re: DMEA Docket 2631

Gentlemen:

On August 26, 1952, we requested you to submit proof of valid title to your 30 unpatented mining claims in the Martin-Mesa Area, Montrose County, Colorado.

Will you please advise if you are making an effort to clear the title to your claims, and if you are still interested in DMEA assistance and exploration.

Yours very truly,

W. H. King

W. H. King
Executive Officer
DMEA Field Team

HMC:ld

cc: Mittendorf
Traver
Koschmann
Subject
Chron.

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

224 New Customhouse
Denver 2, Colorado

March 20, 1953

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Mr. Donald Andrews
P. O. Box 77
Nucla, Colorado

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Yours very truly,

W. H. KING

W. H. King
Executive Officer
DMEA Field Team

HMC:ld

cc: Mittendorf
Traver
Koschmann
Subject
Chron.

9/2/52 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 29 1952

224 New Customhouse
Denver 2, Colorado

August 26, 1952

Mr. Keith M. Andrews
Mr. Donald Andrews
P. O. Box 77
Nucla, Colorado

Re: DMEA Docket 2631
(Uranium)

Dear Sirs:

We should like to call your attention to the fact that when filings are made on the public domain for oil and gas leases the land is automatically withdrawn from the filing of mining claims.

A check of the records in the Bureau of Land Management indicates that many of your locations are in conflict with oil and gas leases, which would invalidate your locations if the oil and gas leases are of prior date. If your locations are of prior date you may petition the Bureau of Land Management to have these claims withdrawn from the oil and gas leases.

We will hold your application pending your decision as to your willingness to amend the application for exploration on those claims which are valid locations, or until you submit proof of clear title to your claims.

Very truly yours,

John F. Shaw

John F. Shaw for
W. H. King
Executive Officer
Field Team, Region IV

HMC:oc
cc: Secretary to the Oper. Comm. (2)
Subject
Chron.
AHKoschmann (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

22h New Customhouse
Denver 2, Colorado

DEPARTMENT OF THE INTERIOR
Bureau of Land Management
RECEIVED
AUG 29 1952

August 26, 1952

Mr. Keith M. Andrews
Mr. Donald Andrews
P. O. Box 77
Nucla, Colorado

Re: DMEA Docket 2631

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Very truly yours,

John F. Shaw for
W. H. King
Executive Officer
Field Team, Region IV

HMC:oc
cc: Secretary to the Oper. Comm. (2)
Subject
Chron.
AHKoschmann (2)

700
FILE COPY
SURNAME:

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

AUG 11 1952

Mr. Keith M. Andrews
Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Re: Docket No. DMEA-2631 (Uranium)
Martin Mesa Area
Montrose County, Colorado

Dear Mr. Andrews:

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

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
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 (fw) 8/11/52

Acting Administrator

EWEllis/gla 8-6-52
cc to: Adm. Reading File
Docket
Mr. Ellis
DMEA Field Team, Region IV (2)

700
FILE COPY
SURNAME:

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

Ellis

AUG 1 2 1952

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

Re: Docket No. DMEA-2631 (Uranium)
Andrews & Andrews
Martin Mesa Area
Montrose County, Colorado

Dear Mr. King:

The captioned application is referred to your office for a field examination. One complete copy of the application and supporting data was forwarded to you under separate cover.

Copies of memorandums from A. P. Butler, Jr., dated July 30, and H. D. Keiser, dated August 4, 1952, are attached for consideration by the Field Team.

If the field examination indicates the recommendation of a project, a breakdown of the costs should be carefully determined. Furthermore, since the area appears to be more favorable to small ore bodies than to the occurrence of large deposits, it is suggested that the stripping and drilling proposed by the Applicant be given careful consideration.

Sincerely yours,

cc
8/11/52
(245)

(signed) FRANK E. JOHNSON

Chairman, Operating Committee

APPROVED:

C. N. Johnson
Member, Bureau of Mines

D. M. Lemmon
Member, Geological Survey

EWEllis/gla 8-6-52

cc to: Adm. Reading File
Operating Committee
Docket
Messrs. H. D. Keiser, Rm. 1347
A. P. Butler, Jr., Rm. 3206 GSA
Ellis

8/5/52 gla

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

August 4, 1952

Memorandum

To: Ernest William Ellis, DMEA Member,
Uranium Commodity Committee, Room 4070.

From: H. D. Keiser, Bureau of Mines Member,
Uranium Commodity Committee

Subject: DMEA docket 2631, Andrews & Andrews, P. O. Box 77,
Nucla, Colorado.

I have reviewed the application included in the subject docket and discussed it with Arthur P. Butler, Geological Survey Member.

It is recommended that the application be referred to the field team for investigation and report, with the suggestion that the team consult Mr. Lowell Hilpert, Geological Survey, and Mr. Ernest Gordon, Atomic Energy Commission, Grand Junction, Colo.

It is further recommended that the field team be asked to report specifically as to whether all the rim stripping and drilling proposed is advisable initially, and whether the estimated cost of $2.50 per foot for diamond drilling, specified in the application, is a realistic estimate.

H. D. Keiser

H. D. Keiser

Attachment

STANDARD FORM NO. 64

8/5/5 rgla

# Office Memorandum • UNITED STATES GOVERNMENT

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

DATE: July 30, 1952

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

SUBJECT: DMEA Docket 2631 (Uranium), Andrews & Andrews, Applicant: Badger, Crown Prince, Red Rock, and other claims, Martin Mesa, Montrose County, Colorado.

The application identified in the subject above is by all odds the best prepared and most informative one from the Colorado Plateau area that has come to my attention. Although the applicants' property is in a part of the uranium-bearing region where the general character of the ore-bearing formation is not especially favorable for the occurrence of numerous or large ore bodies, the data presented in the application suggests that some additional ore may be found in small ore bodies similar to those now being mined. Whether or not the type of exploration proposed by the applicant is the best way of finding any concealed ore on his property, and whether or not the amount is appropriate to the possibility, can only be determined by review of the problem in the field. I suggest, therefore, that the application be forwarded to the field team for review.

Although the application is informative and well drawn, it is worth noting that the inference made in paragraph (B), Item 2, Form M. F. 100, about the favorability of Martin Mesa does not conform with what is known about the general distribution of the most favorable ground for ore, and that the 1st Rim as defined by the applicant is not generally the most favorable horizon for ore bodies, as the applicant implies in Item 12, Form M. F. 100. I suggest that the field team consult with the staffs of the Geological Survey and the AEC at Grand Junction, Colorado for the benefit of their information and suggestions, not only with respect to geologic information but also with respect to costs of drilling and other forms of exploration that may be pertinent to this application. Good geologic guidance would promote the effectiveness of the proposed exploration, but I doubt that the necessary guidance would require enough of a geologist's time to make the cost $1,800.00

I believe that the maps furnished by the applicant are an adequate bases and the only additional mapping that might be needed would be a more precise indication of known mineral occurrences.

Arthur P. Butler Jr.

A. P. Butler, Jr.

Enclosure

EXPLORATION

Subject: DMEA-2631
Re: Exploration Loan
Badger Claims, etc.
July 28, 1952

Mr. Keith M. Andrews
Andrews & Andrews
P. O. Box 77
Nucla, Colorado

My dear Mr. Andrews:

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

Your application was assigned Docket Number DMEA-2631 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-2631 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Chief, Operation's Control
and Statistics Division

7862

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

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

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

*Not To Be Filled in by Applicant*

Docket No. DMEA-2531
Metal or Mineral
Date Received 7-28-52
Amount $
Participation (Government %)

Name and address of applicant

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Date July 25-1952

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

## INSTRUCTIONS

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

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

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

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

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

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

2. (*a*) What metals or minerals do you expect to find?

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

16—64067-2

JUL 28 1952

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

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

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

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

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

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

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

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

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

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

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

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

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

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

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

## CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

| | |
|---|---|
| ---------- (Name of company) | By ---------- (Signature of authorized official) |
| ---------- (Date) | ---------- (Title) |

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Form M. F. 103

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1.

(a) The property consists of 30 unpatented mining claims acquired through purchase and location.

Following is a list of the claims involved and the method of acquisition:

| Name of Claim | Method of acquisition |
|---|---|
| Badger | Q. C. D.* |
| Basin 1 to 6 | Location |
| Cedar Ridge | Location |
| Crown Prince | Q. C. D. |
| Princess | Location |
| Protector | Q. C. D. |
| Red Rock 1 to 8 | Location |
| Wildcat | Location |
| Wildcat 1 to 7 | Location |
| Wilson 1 to 3 | Q. C. D. |

*Quit Claim Deed

* July 15, 1945 E. J. Davis to Gifford C. Templeton and Keith M. Andrews all rights & titles to Badger and Crown Prince Mining Claims. Recorded Book 305 Page 467

September 2, 1947 J. J. Jackson to Keith M. Andrews and Barney A. Huford all rights and title to Wilson Mining Claims 1, 2 and 3 and the Protector Mining Claim. Recorded Book 322 Page 175.

December 12, 1947 Gifford C. Templeton to B. A. Huford all rights and title to the Badger and Crown Prince. Recorded Book 322 Page 223.

December 1, 1949 B. A. Huford to Keith M. Andrews all rights and title to the Crown Prince, Badger, Protector and Wilson Nos. 1, 2 and 3. Recroded Book 322 Page 506.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1. (a) Continued

There are 4 mining areas that have produced in recent years, namely: Crown Prince (Plate 2) Badger ( Plate 3) Old Badger (Plate 4) and Wildcat. These areas are also indicated on the general map of the property (Plate 1).

We have concentrated our efforts in the past few years to the Badger and Crown Prince workings, the Wildcat was operated under lease.

(b) Not applicable.

(c) The claims occupy portions of Sec. 22, 23, 26, 27, and 28 T. 48 N. R. 18 W. (unsurveyed) N. M. P. M.

Form M. F. 103

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Nucla, Colorado

2. (a) We expect to find uranium bearing rock.

(b) Martin Mesa on which these claims are situated, is an isolated, relatively undeveloped plateau on the north side of Paradox Valley. The U. S. G. S. aerial maps of the region clearly show that Long Park, Martin Mesa and Carpenter Ridge would form a continuous land mass all equidistant from Paradox Valley except for the interruption occasioned by the Dolores River cut and the break of Red Canyon. From the history of parallel marginal zones on each side of Gyp and Paradox Valley, it is safe to assume that Martin Mesa would be as productive as any comparable area if exploration and development had been carried to the same advanced state. Due to the erosional features mentioned, Martin Mesa is isolated to wheeled vehicles for about 4 months of the year and not entirely safe during heavy icing weather. The only approach at present is via a ford across the Dolores River, located a short distance south of the mouth of Mesa Creek. The A. E. C. has recommended an access road be constructed along the westerly bank of the Dolores River extending south from the Roc Creek bridge to a junction with the present road where it emerges from the ford. This road is assured although the date of construction is probably late 1952.

Geologically, Martin Mesa has four recognized ore horizons, all within the Salt Wash member of the Morrison Formation. These mineralized horizons are generally designated as Rims and referred to by number. The 1st Rim being the lowest in the column and lying roughly 25 feet above the Summerville or "Red Beds". In drill exploration, these "Red Beds"are considered to be below all mineralized horizons and as they are quite distinctive, are readily recognized by the drill operator. In reference to the "Red Beds", the 2nd Rim lies 150 feet higher, the 3rd, 200 feet and the 4th, 250 feet.

On Martin Mesa, the 1st Rim covers an area equal to the area of the Mesa itself. The 2nd, 3rd and 4th Rims have been partially eroded, forming isolated buttes. There has been virtually no development

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Nucla, Colorado

2. (b) Continued

of the 1st or 2nd Rims within the area we own. It is possible to walk along these horizons and by so doing 12 ore occurences have been located, giving a total of 242 feet of mineralization. To develop these showings, dozer roads must be constructed.

On the adjoining Farmer Boy Claims, the 2nd Rim has been explored and is productive. In the same area, the 1st Rim has been explored only in a couple of places. The 3rd and 4th Rims, lying so close together are difficult to separate. We believe the Crown Prince and Badger workings to be in the 4th Rim. Likewise, the highest Farmer Boy workings are 4th Rim. If this is true, we cannot ascribe any working or ore showings to the 3rd Rim.

There are four methods of exploration adaptable to this ground. 1st--Rim stripping by dozer at some 60¢ per foot. 2nd--Wagon drilling where the necessary depth of hole does not exceed 125 feet at $1.10 per ft. 3rd--Diamond drilling at $2.50 per ft and 4th--Drifting at some $15.00 per ft. We believe drifting to be too expensive and slow for this project. Ore can be found and sufficiently blocked out by using a combination of stripping and drilling and no high cost drifting need be charged against exploration.

A sufficient number of ore occurences have been located to justify the development program we herewith present.

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3. Proposed work and estimated cost.

(a) We propose to explore the Crown Prince and Wild-cat-Red Rock areas by rim stripping and diamond drilling. The stripping is to be along the trace of the 1st Rim, the drilling to be a row of vertical holes parallel to the rim and so located that all horizons are cut. The accompanying map shows the areas and pattern of the exploration. In addition to the preliminary pattern of holes, an additional footage of 40% is allowed for offset drilling around holes which penetrate favorable zones.

Zone 1--Crown Prince area.

(a) Rim stripping of 1st Rim, starting from the "spring" on the Wilson No. 1 Claim and following the ore horizon in a southwesterly direction for a distance of 7000 ft. There are 6 ore occurences in this zone that have been exposed through natural erosion. The stripping we propose will make these ore bodies available to mining and will uncover sections of the horizon that are now covered by talus.

Cost: 7000 ft @ 60¢ per ft. Total $ 4,200.00

(b) Diamond drilling parallel to the rims. For this phase, we propose a string of 31 holes spaced at 100 ft. intervals. These holes will average 300 ft. in depth and will cut the 4 recognized ore horizons of the district. A local drill contractor has quoted a figure of $2.50 per ft. for this drilling. In the case of ore intercepts, a certain amount of offset drilling is anticipated. For this, we have estimated an additional 40% of drilling will be needed.

Cost of drilling:

| | |
|---|---|
| 31 holes 300 ft. deep @ $2.50 per ft. | $23,250.00 |
| plus 40% for offset drilling | 9,300.00 |
| Direct drill costs | $32,550.00 |
| Drill site preparation: | |
| 2 days for D6 Cat @ $80.00 per day | 160.00 |
| Total direct cost for Zone 1 | $32,710.00 |

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3. (a) Continued:

Since July 1946, this area has produced 30,569 pounds of $V_2O_5$ and 6,880 pounds of $U_3O_8$. All this production from the very limited areas depicted on the accompanying sketches. Wherever we have been able to explore ahead of our mining operation, we have increased our ore reserves.

Zone 2--Wildcat-Red Rock area.

(a) Rim stripping.
We have stripped 800 ft. of the 1st Rim in this zone and propose to advance this for an additional 5000 ft. Our work to date located and developed one ore body which has produced 132.5 pounds of $U_3O_8$. This production does not limit or indicate the size of the ore body but merely states production figures as of this writing.
Cost:

| | |
|---|---|
| 5000 ft. @ 60¢ per ft. | $ 3,000.00 |

(b) We propose a limited amount of diamond drilling behind the main ore shows on the Red Rock Claims Nos. 2 and 3. These holes will average 150 ft. in depth and should be spaced on 200 ft. centers. Six holes are thought to be sufficient at this time.

Direct cost of drilling:

| | |
|---|---|
| 6 holes of 150 ft. @ $2.50 per ft. | $ 2,250.00 |
| Plus 40% for offset drilling | 900.00 |
| | $ 3,150.00 |

Drill site preparation has been roughed in. One days dozer work will complete it.
Cost:

| | |
|---|---|
| 1 day D6 Cat @ $80.00 | $ 80.00 |
| Total cost for Zone 2 | $ 3,230.00 |

Aside from the 132 pounds of $U_3O_8$ produced by us, as stated, we have no knowledge of the production from this area. Years ago some rather extensive work was performed on what we now call our Red Rock No. 2 Claim. As to grade or quantity, we have no record. Our reason for including an exploration program of this area at this time is based upon our knowledge of uranium occurence in this district and the firm conviction that lack of exploration is the only reason for the small production.

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3. (a) Continued.

Access Road:

As stated in Form M. F. 100, the Atomic Energy Commission has recommended the construction of 4 miles of year around road to connect with our existing mine road. Our present road winds from the Dolores River level to the top of Martin Mesa in a series of switchbacks that must be eliminated before any sustained development program can be undertaken. Since our road was first constructed in 1939, additional work has been done. From one of these latter developments, a road can be cut through the "slick-rim" that will completely eliminate the worst section of our present road. This proposed new road is identified on the accompanying map as"new construction."

Cost:

| | |
|---|---|
| Dozer, powder and labor | $ 3,000.00 |

3. (b) Time required to start and complete project.

The access road just described is the only preparatory work required. We estimate the road can be completed in 6 days.

The rim stripping and diamond drilling can run concurrently. The average monthly rate for diamond drilling is estimated to be 1250 ft. The total maximum footage proposed is 14,280 ft or 12 drill months. The local contractor who will do our drilling will put 2 drills on our property which means the project will run for 6 months.

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5. List facilities and cost of repairs.

(a) A two-room combination cook shack and sleeping quarters (12x18)
(b) 2 small tool sheds (9x12)

These facilities are in good condition and are adequate for 4 men. As all work is to be contracted and due to the short distance to the homes of the contractors, there is no provision made in this estimate for additional housing.

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Nucla, Colorado

6. List and estimated cost of additional facilities.

There is no necessity for additional buildings.

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7. List of operating equipment to be rented, purchased or furnished by owners.

All work is to be contracted with the contractor furnishing all equipment. We do not propose to buy or rent any additional equipment.

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8. Itemized schedule of labor, wages, etc.

All labor will be furnished by contractor. Supervision will cost $500.00 plus $50 travel allowance per month.

| | |
|---|---|
| $550.00 x 6 | $ 3,300.00 |

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Nucla, Colorado

9. List with estimated cost of materials, engineering, utilities, etc.

Materials and supplies are to be furnished by each contractor. Engineering will be on a part time basis at a cost of $4.00 per hour. We estimate 60 hours per month.

| | |
|---|---|
| 60 hrs. @ $4.00 for 6 mos. | $ 1,440.00 |
| Accounting will be on a part time basis at a cost of $250.00 per mo. | |
| $250.00 for 6 mos. | 1,500.00 |
| Geologic supervision will be part time at $300.00 per mo. | |
| $300.00 for 6 mos. | 1,800.00 |
| Assaying $75.00 per mo. | |
| $75.00 for 6 mos | 450.00 |
| | $ 5,190.00 |

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Nucla, Colorado

9. (continued)

Recapitulation of Items 3 to 9.

Zone 1

| | |
|---|---|
| Rim stripping | $ 4,200.00 |
| Diamond Drilling | 32,550.00 |
| Drill site preparation | 160.00 |

Zone 2

| | |
|---|---|
| Rim stripping | 3,000.00 |
| Diamond Drilling | 3,150.00 |
| Drill site preparation | 80.00 |
| Access road | 3,000.00 |
| Supervision | 3,300.00 |
| Engineering | 1,440.00 |
| Bookkeeping | 1,500.00 |
| Geology | 1,800.00 |
| Assaying | 450.00 |
| Contingencies | 500.00 |
| Total | $55,130.00 |

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10. Owners' investment.

(a) We are prepared to invest $6,000.00.

(b) This amount is sufficient to meet our cost of the project.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

11. Conditions not sufficiently brought out by foregoing questions.

Indicated by not stressed is the geological favorable location of Martin Mesa. Mining and exploration have rather recently shown the strong band of mineralization paralleling Gypsum and Paradox Valleys. Exploration by diamond drills have filled in some gaps that until now have seemed to be blanks.

The position of Martin Mesa in relation to Paradox Valley coupled with the wide spread mineralization as evidenced by the Ore Shows means that the area is worthy of extensive exploration.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

# GENERAL TECHNICAL DATA
# FOR USE UNDER THE
# DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2581

Date received 7-28-52

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Name and address of applicant

Date July 25, 1952

## INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

## GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
RECEIVED
JUL 30 1952

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

| Name and Address (a) | Official Title (If officer is also director indicate by "D") (b) | Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c) | Estimated Net Worth Outside of Interest in Applicant (d) | Number of Shares Held in Applicant Corporation | | Life Insurance Carried for Benefit of Applicant | |
|---|---|---|---|---|---|---|---|
| | | | | Common (e) | Preferred (f) | Amount (g) | Net Cash Surrender Value After Loans (h) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Total | | x x x x x | | | x x x x x | x x x x x |

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

**For Corporate Applicants**

| Item | Authorized (a) | Outstanding (b) | Par Value (c) | Number of Shares Outstanding (d) | Dividend Rate Last Paid* (e) |
|---|---|---|---|---|---|
| Common stock | $ | $ | $ | | |
| Preferred stock | $ | $ | $ | | |

*Indicate period covered.

10. Production:

| Item | Kind of Product (a) | 1948 Total (b) | 1949 Total (c) | 1950 Total (d) | Present Average Monthly (e) |
|---|---|---|---|---|---|
| 1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.) | | | | | |
| 2. Quantity of product processed (specify unit of measure and type of process) | | | | | |
| 3. Quantity and grade of product sold or shipped (specify units of measure) | | | | | |

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral [illegible]osit briefly. Accompany the application by [illegible] available report on the geology and ore reserves.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1. Materials produced:

(a) The chief mine product is uranium oxide.

(b) The byproduct is vanadium oxide.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

2. The mine is an underground Uranium-Vanadium mine.

(a) There are no linear feet of shafts.

(b) See (d)

(c) There are no linear feet of tunnels or adits.

(d) There is in excess of 1200 feet of all classes of headings. All face advance has been on ore and in most instances, the faces have been advanced as stoping.

There is no water in any of the mine workings. During 8 months of 1951, two men mined, shipped and sold 212,431 pounds of ore containing 2641 pounds of $U_3O_8$ and 10,438 pounds of $V_2O_5$. There are sufficient ore exposures to justify estimating a potential of 50 tons a day production without the installation of any special equipment.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

3. Location of Mine.

(a) It is 9 miles Northwest of the U. S. V. Mill at Uravan, Colorado.

(b) It is in the Paradox Mining District (Martin Mesa Area).

(c) It lies in portions of Sec. 22, 23, 26, 27, 28, T. 48 N. R 18 W N. M. P. M.

(d) It is in Montrose County, Colorado.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

4. Ownership and Operation of property.

(a) The property is not in operation at this date. Work is suspended temporarily due to high water in the Dolores River, making the ford (the only access to the mine) impassable.

(b) We are operating the property as owners.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

5. Years of production.

(a) Uranium or vanadium has been produced from the ground now embraced by our claims since early in the '20s. The present owners have produced steadily since 1946. Prior to our acquisition, the former owner had shipped since 1939. Production prior to 1939 is indicated by old dumps.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

6. Experience of Operators.

(a) The applicants, Keith M. Andrews, has had 12 years uranium mining experience, largely confined to this one property. The other applicant, Donald Andrews, has had 5 years uranium production experience. His business experience includes several years management of the Nucla Flying Service.

(b) The owners manage the operation and intend to rely upon consulting geologists and engineers for aid in technical problems.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

7. History:

(a) Until 1951, all exploration was confined to probing ore exposures along the rim outcrops. In this manner, commercial ore has been developed on 7 claims. In addition to these explored ore showings, there are at least 10 other outcrops that have been located but not tested. In each case, the cost of road construction to the shows have been beyond our economic means.

During 1951, with the advent of the bonus program of the A. E. C. we were able to sink a few wagon drill holes into the 4th Rim ore horizon ahead of our mining faces. On our Crown Prince Claim, 12 of 19 holes penetrated ore. On our Badger Claim, 16 out of 26 holes penetrated ore. We now know several of our holes failed to reach the ore horizon by about 12 feet. Our equipment was only effective for an average depth of 35 feet. We fully intend to pursue this type of exploration during 1952 but with equipment capable of sufficient depth to explore the 4th Rim horizon in the immediate vicinity of our Crown Prince and Badger workings. In addition to our wagon drilling program, we also stripped 800 feet of the 1st Rim on our Wildcat Claims. In so doing, we developed one ore body which produced 132.5 pounds of $U_3O_8$. The mine can be reached by car or truck only when the Dolores River is sufficiently low to permit fording. Generally the water drops by the 1st of July and the ford is passable until the next spring run-off, or as sometimes happens, until a thick ice forms during a short stretch in the winter.

(b) The only other drilling ever performed on the Mesa was on an adjoining property known as the Farmer Boy which lies about $\frac{1}{2}$ mile north of our Badger Mine. Tony Scala, the present owner, contracted for some 30 holes on a Mesa point $1\frac{1}{2}$ miles north of the Badger workings. We do not have the logs or pattern of these holes but have been told 10 penetrated ore which was deemed sufficient encouragement to warrant holding the property. Scala, who has a very fine producing property in Bull Canyon, says he has no intention of further exploration of the Farmer Boy until the A. E. C.'s access road to Martin Mesa is built.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

7. History (continued)

(c) There are no reports on the property available to me. On two different occasions, the Engineering Department of the Colorado Raw Materials Office of the A. E. C. have made examinations of Martin Mesa in connection with investigations: 1st, for an access road and, 2nd for Certification of our claims for bonus payment. I am informed these reports are available to you.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

8. Names and address of officers, etc.

(a) Keith M. Andrews, P. O. Box 77, Nucla, Colorado) co-owners
Donald Andrews P. O. Box 77, Nucla, Colorado )

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

9. Capital Stock Issues:

Not applicable.

Applicant: Andrews & Andrews
Box 77
Nucla, Colorado

10. Production:

| Item | Kind of product | 1948 Total | 1949 Total | 1950 Total | Present Average Monthly |
|---|---|---|---|---|---|
| 1. Quantity of product mined (short tons) | Crude Ore | 33.8 | 119.7 | 68.0 | 15.0 |
| 2. Quantity of product processed | Not applicable | | | | |
| 3. Quantity and grade of product sold or shipped (short tons) | % $V_2O_5$ | 5.2 | 3.2 | 2.5 | 4.9 |
| | % $U_3O_8$ | 1.06 | .75 | .38 | 1.20 |

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

11. We do contemplate a change in the present average monthly rate of production. See attached application Form M. F. 103.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

12. Ore or Mineral Reserves:

(a) Within the scope of our operation, we have found the 4th Rim to be the host of high grade "trees" while the 1st Rim ore tends to be confined to channel filling. Elsewhere on the Plateau, extensive drilling has developed the largest ore bodies on the 1st Rim.

Every ore show represented on the accompanying map (Plate 1) is of sufficient size and grade to warrant exploration by drifting. They are similar in every respect to ore shows in more accessible areas that have led miners into ore bodies that are still producing after years of exploitation.

To our knowledge, there is not another area on the Plateau that is as well mineralized but as little developed.

(b) Ore reserves

| Horizon | Claim | Positive* | Indicated* | Inferred* | Total |
|---|---|---|---|---|---|
| 4th | Crown Prince | 100 | 50 | | 150 |
| 4th | Badger | 150 | 75 | | 225 |
| 1st | all claims | | | 850 | 850 |
| | | | Total all classes | | 1225 |

* Positive ore--Ore penetrated by 2 or more holes.

Indicated--Good formation (drill hole data) but no mineralization.

Inferred--Rim exposures were allowed 25 ft of depth.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

13. Access Roads.

It is 4 miles from the mine to junction with State Highway 141 along the Dolores River, thence 9 miles to Uravan over a good gravel-surfaced road. The 4 miles of mine road is a typical uranium field truck road.

The Colorado Raw Materials Office of the A. E. C. has recommended that the Bureau of Public Roads build a 4 mile access road along the western bank of the Dolores River, starting at the Roc Creek Bridge and running south to junction with our present road as it emerges from the ford. Such a road will make our property easily accessible for year round operation.

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14. Water Supply:

Culinary water is supplied by a perennial spring which flows about 2 gallons per minute. Water for extensive drilling must be hauled from the Dolores River (4 miles.)

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Nucla, Colorado

15. Power:

All power must be generated on the property.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

16. Labor:

The property is operated by owners with no employees.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

17. Equipment and Facilities:

Our present equipment consists of:

1. L-R 105 compressor
2. Leroi Tract-Air compressor 105 cu. ft.
3. Cleveland Wagon Drill with steel & tools
4. L-R Jackhammer with jackleg & column
5. 3/4 ton Chevrolet pick-up
6. Universal Jeep
7. Water Tanks
8. Mine rail & car
9. 400' of 1" pipe
10. Miscellaneous small tools
11. Light Trailer
12. 100' of pressure hose

Buildings:

1. A two-room combination cook shack and bedroom (12x18)
2. Two small tool sheds
3. Two ore bins

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

18. There are no particular conditions or circumstances affecting our operations that are not described above.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

**TOTAL ORE OR MINERAL RESERVES**

| Ore or Mineral Reserve | Estimated Tons (a) | Metal or Mineral Content Per Ton (Grade) (b) | Gross Value Per Ton (c) | Recoverable Unit Value Per Ton (d) | Estimated Cost of Production Per Ton (e) |
|---|---|---|---|---|---|
| Measured (proved) | | | | | |
| Indicated (probable) | | | | | |

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, even or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

**CERTIFICATION**

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Andrews & Andrews
(Name of company)

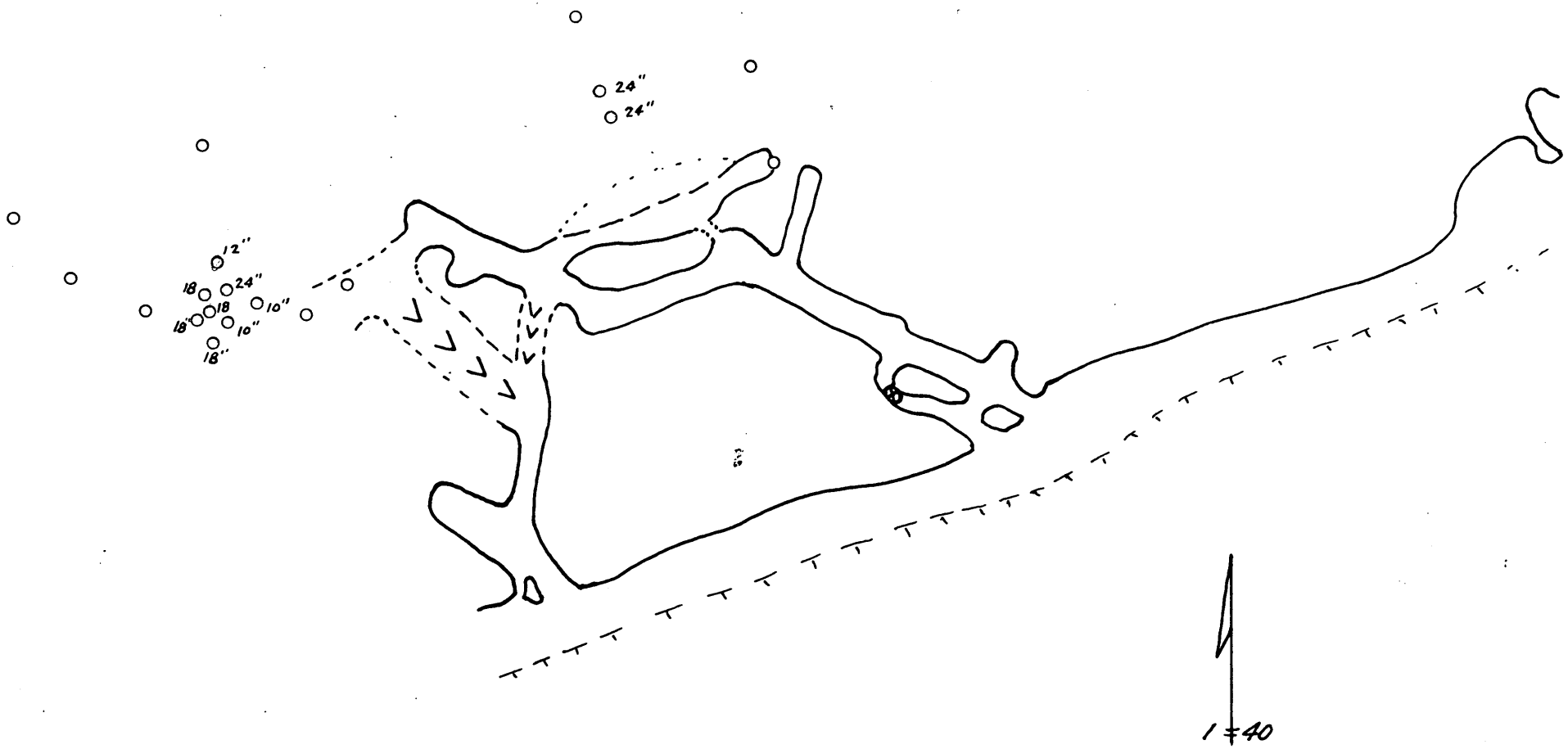
By Keith M. Andrews
(Signature of authorized official)

July 25 - 1952
(Date)

Co-Owner
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1




19 HOLES - 12 IN ORE

PLATE- 2

CROWN PRINCE

ANDREWS & ANDREWS
NUCLA, COLO.

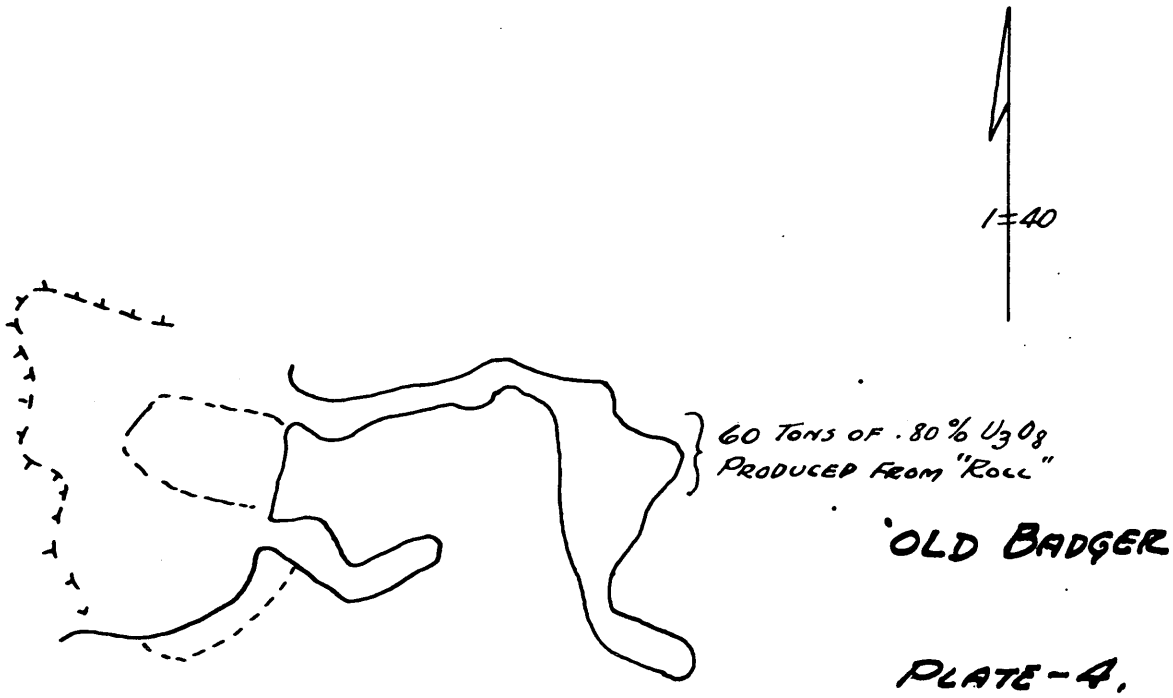
1 = 40

PLATE - 3

BADGER

1 - Hit crack @ 27' No Return
2 - No Ore - good formation @ 35'
3 - Hit crack - No Ore.
4 - Short
5 - 35' deep - Good ore - upper horiz.
6 - 42' " - Too shallow
7 - Drilled to top layer - 24" ore
8 - Good formation - No ore
9 - No ore @ 35'
10 - " " - Not deep enough.

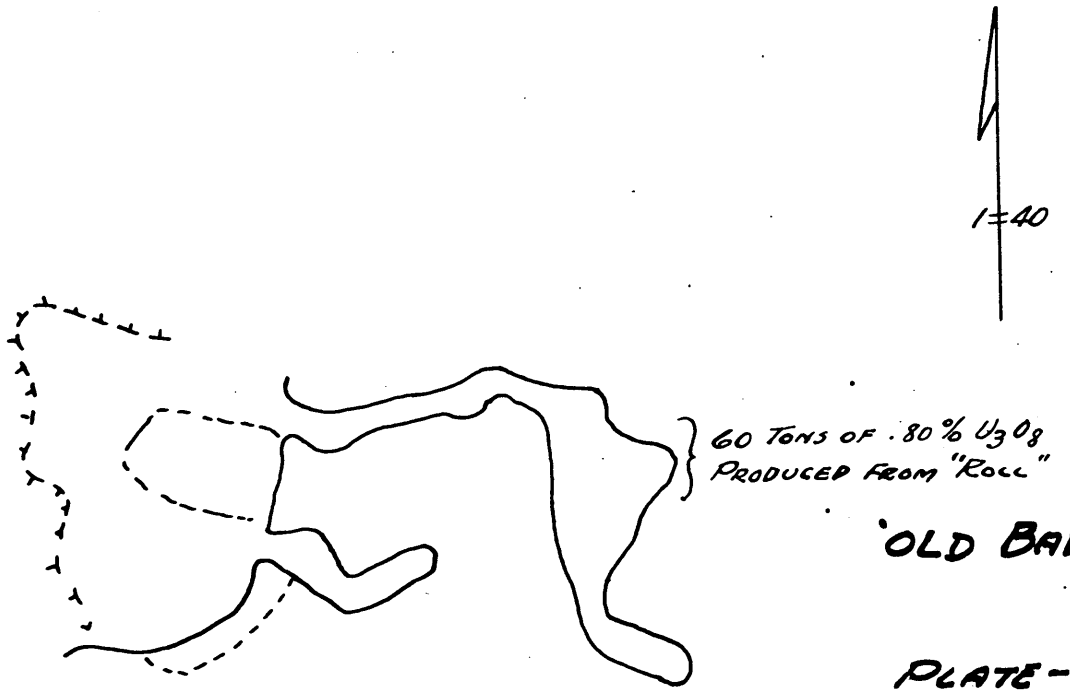
ANDREWS & ANDREWS
NUCLA, COLO.




OLD BADGER

PLATE-4.

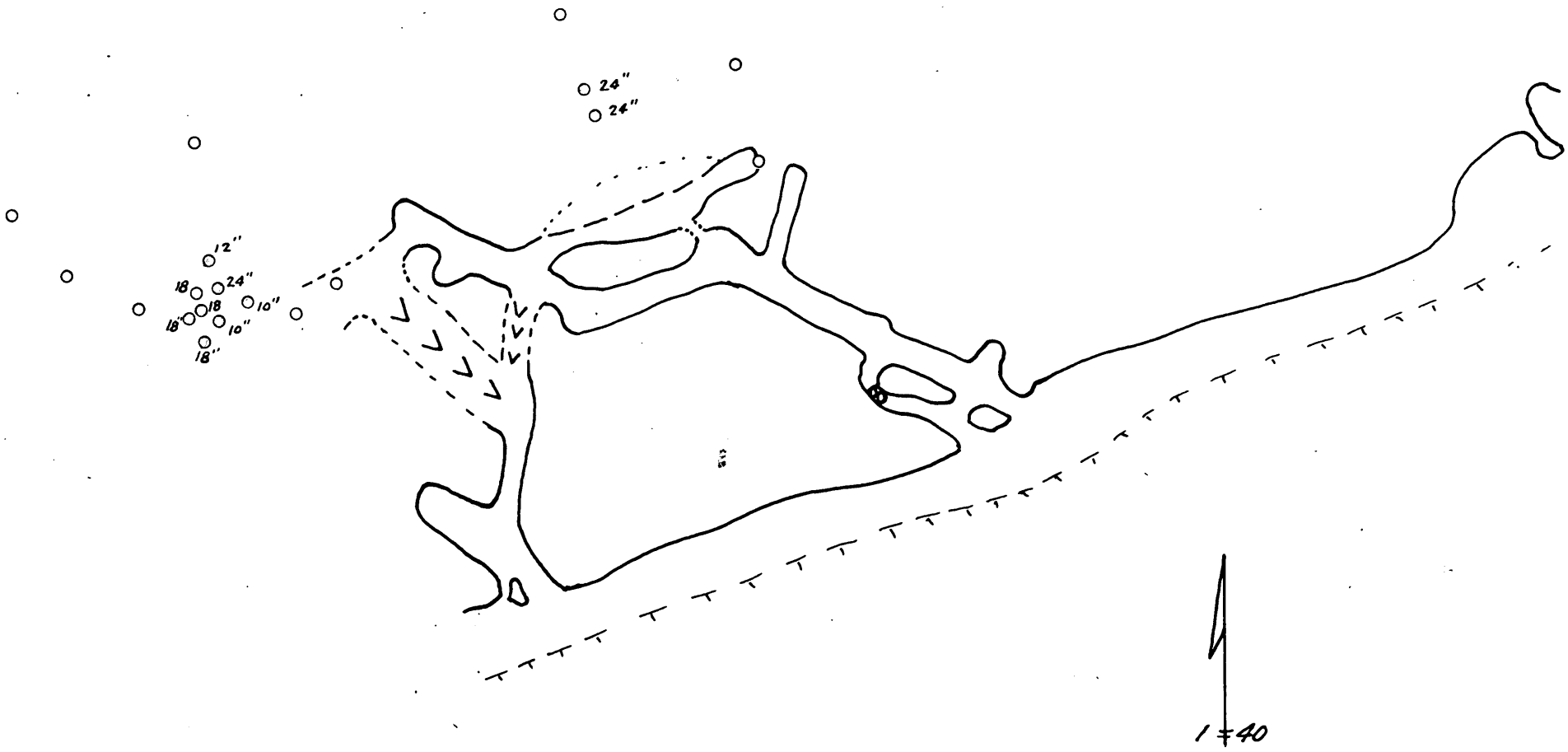
ANDREWS & ANDREWS
NUCLA, COLO.




OLD BADGER

PLATE-4.

ANDREWS & ANDREWS
NUCLA, COLO.

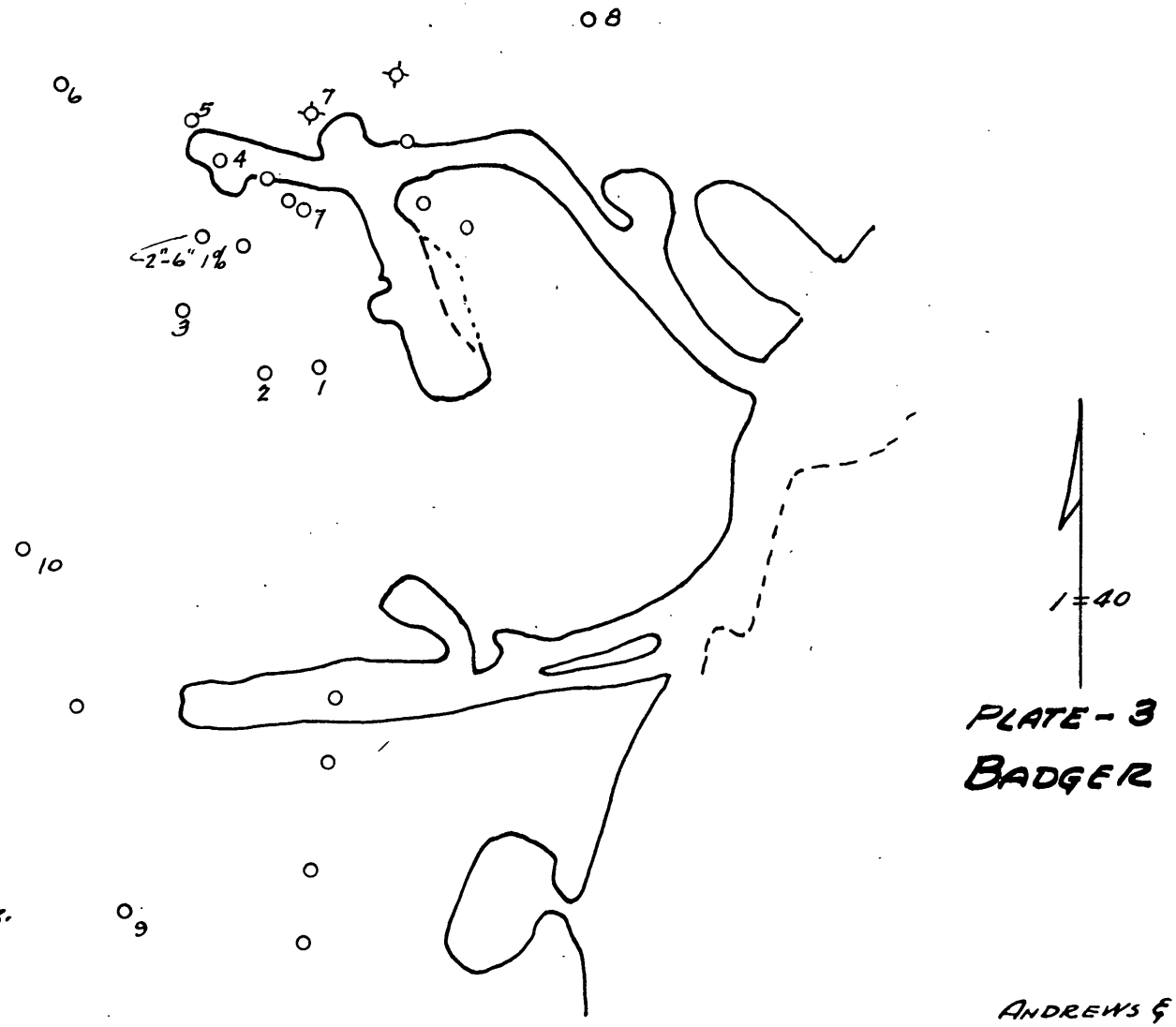



19 HOLES - 12 IN ORE

PLATE- 2

CROWN PRINCE

ANDREWS & ANDREWS
NUCLA, COLO.




1 - Hit crack @27' No Return
2 - No Ore - good formation @35'
3 - Hit crack - No Ore.
4 - Short
5 - 35' deep - Good ore - upper horiz.
6 - 42' " - Too shallow
7 - Drilled to top layer - 24" ore
8 - Good formation - No ore
9 - No ore @35'
10 - " " - Not deep enough.

PLATE - 3
BADGER

ANDREWS & ANDREWS
NUCLA, COLO.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

# GENERAL TECHNICAL DATA
# FOR USE UNDER THE
# DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2631

Date received 7-28-52

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Name and address of applicant

Date July 25, 1952

## INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

## GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 28 1952

5. Number of years in production _____
   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

| Name and Address (a) | Official Title (If officer is also director indicate by "D") (b) | Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c) | Estimated Net Worth Outside of Interest in Applicant (d) | Number of Shares Held in Applicant Corporation | | Life Insurance Carried for Benefit of Applicant | |
|---|---|---|---|---|---|---|---|
| | | | | Common (e) | Preferred (f) | Amount (g) | Net Cash Surrender Value After Loans (h) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Total | | x x x x x | | | x x x x x | x x x x x |

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

**For Corporate Applicants**

| Item | Authorized (a) | Outstanding (b) | Par Value (c) | Number of Shares Outstanding (d) | Dividend Rate Last Paid* (e) |
|---|---|---|---|---|---|
| Common stock | $ | $ | $ | | |
| Preferred stock | $ | $ | $ | | |

*Indicate period covered.

10. Production:

| Item | Kind of Product (a) | 1948 Total (b) | 1949 Total (c) | 1950 Total (d) | Present Average Monthly (e) |
|---|---|---|---|---|---|
| 1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.) | | | | | |
| 2. Quantity of product processed (specify unit of measure and type of process) | | | | | |
| 3. Quantity and grade of product sold or shipped (specify units of measure) | | | | | |

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by an available report on the geology and ore reserves.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1. Materials produced:

(a) The chief mine product is uranium oxide.

(b) The byproduct is vanadium oxide.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

2. The mine is an underground Uranium-Vanadium mine.

(a) There are no linear feet of shafts.

(b) See (d)

(c) There are no linear feet of tunnels or adits.

(d) There is in excess of 1200 feet of all classes of headings. All face advance has been on ore and in most instances, the faces have been advanced as stoping.

There is no water in any of the mine workings. During 8 months of 1951, two men mined, shipped and sold 212,431 pounds of ore containing 2641 pounds of $U_3O_8$ and 10,438 pounds of $V_2O_5$. There are sufficient ore exposures to justify estimating a potential of 50 tons a day production without the installation of any special equipment.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

5. Location of Mine.

(a) It is 9 miles Northwest of the U. S. V. Mill at Uravan, Colorado.

(b) It is in the Paradox Mining District (Martin Mesa Area).

(c) It lies in portions of Sec. 22, 25, 26, 27, 28, T. 48 N. R 18 W N. M. P. M.

(d) It is in Montrose County, Colorado.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

4. Ownership and Operation of property.

(a) The property is not in operation at this date. Work is suspended temporarily due to high water in the Dolores River, making the ford (the only access to the mine) impassable.

(b) We are operating the property as owners.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

5. Years of production.

(a) Uranium or vanadium has been produced from the ground now embraced by our claims since early in the '20s. The present owners have produced steadily since 1946. Prior to our acquisition, the former owner had shipped since 1959. Production prior to 1959 is indicated by old dumps.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

6. Experience of Operators.

(a) The applicants, Keith M. Andrews, has had 12 years uranium mining experience, largely confined to this one property. The other applicant, Donald Andrews, has had 5 years uranium production experience. His business experience includes several years management of the Nucla Flying Service.

(b) The owners manage the operation and intend to rely upon consulting geologists and engineers for aid in technical problems.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

7. History:

(a) Until 1951, all exploration was confined to probing ore exposures along the rim outcrops. In this manner, commercial ore has been developed on 7 claims. In addition to these explored ore showings, there are at least 10 other outcrops that have been located but not tested. In each case, the cost of road construction to the shows have been beyond our economic means.

During 1951, with the advent of the bonus program of the A. E. C. we were able to sink a few wagon drill holes into the 4th Rim ore horizon ahead of our mining faces. On our Crown Prince Claim, 12 of 19 holes penetrated ore. On our Badger Claim, 16 out of 26 holes penetrated ore. We now know several of our holes failed to reach the ore horizon by about 12 feet. Our equipment was only effective for an average depth of 55 feet. We fully intend to pursue this type of exploration during 1952 but with equipment capable of sufficient depth to explore the 4th Rim horizon in the immediate vicinity of our Crown Prince and Badger workings. In addition to our wagon drilling program, we also stripped 800 feet of the 1st Rim on our Wildcat Claims. In so doing, we developed one ore body which produced 152.5 pounds of $U_3O_8$. The mine can be reached by car or truck only when the Dolores River is sufficiently low to permit fording. Generally the water drops by the 1st of July and the ford is passable until the next spring run-off, or as sometimes happens, until a thick ice forms during a short stretch in the winter.

(b) The only other drilling ever performed on the Mesa was on an adjoining property known as the Farmer Boy which lies about ½ mile north of our Badger Mine. Tony Scala, the present owner, contracted for some 50 holes on a Mesa point 1½ miles north of the Badger workings. We do not have the logs or pattern of these holes but have been told 10 penetrated ore which was deemed sufficient encouragement to warrant holding the property. Scala, who has a very fine producing property in Bull Canyon, says he has no intention of further exploration of the Farmer Boy until the A. E. C.'s access road to Martin Mesa is built.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

7. History (continued)

(c) There are no reports on the property available to me. On two different occasions, the Engineering Department of the Colorado Raw Materials Office of the A. E. C. have made examinations of Martin Mesa in connection with investigations: 1st, for an access road and, 2nd for Certification of our claims for bonus payment. I am informed these reports are available to you.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

8. Names and address of officers, etc.

(a) Keith M. Andrews, P. O. Box 77, Nucla, Colorado)
Donald Andrews P. O. Box 77, Nucla, Colorado ) co-owners

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

P. Capital Stock Issues:

Not applicable.

Applicant: Andrews & Andrews
Box 77
Nucla, Colorado

10. Production:

| Item | Kind of product | 1948 Total | 1949 Total | 1950 Total | Present Average Monthly |
|---|---|---|---|---|---|
| 1. Quantity of product mined (short tons) | Crude Ore | 53.8 | 119.7 | 68.0 | 15.0 |
| 2. Quantity of product processed | Not applicable | | | | |
| 3. Quantity and grade of product sold or shipped (short tons) | % $V_2O_5$ | 5.2 | 5.2 | 2.5 | 4.9 |
| | % $U_3O_8$ | 1.06 | .75 | .38 | 1.20 |

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

11. We do contemplate a change in the present average monthly rate of production. See attached application Form M. F. 105.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

12. Ore or Mineral Reserves:

(a) Within the scope of our operation, we have found the 4th Rim to be the host of high grade "trees" while the 1st Rim ore tends to be confined to channel filling. Elsewhere on the Plateau, extensive drilling has developed the largest ore bodies on the 1st Rim.

Every ore show represented on the accompanying map (Plate 1) is of sufficient size and grade to warrant exploration by drifting. They are similar in every respect to ore shows in more accessible areas that have led miners into ore bodies that are still producing after years of exploitation.

To our knowledge, there is not another area on the Plateau that is as well mineralized but as little developed.

(b) Ore reserves

| Horizon | Claim | Positive* | Indicated* | Inferred* | Total |
|---|---|---|---|---|---|
| 4th | Crown Prince | 100 | 50 | | 150 |
| 4th | Badger | 150 | 75 | | 225 |
| 1st | all claims | | | 850 | 850 |
| | | | Total all classes | | 1225 |

* Positive ore--Ore penetrated by 2 or more holes.

Indicated--Good formation (drill hole data) but no mineralization.

Inferred--Rim exposures were allowed 25 ft of depth.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

13. Access Roads.

It is 4 miles from the mine to junction with State Highway 141 along the Dolores River, thence 9 miles to Uravan over a good gravel-surfaced road. The 4 miles of mine road is a typical uranium field truck road.

The Colorado Raw Materials Office of the A. E. C. has recommended that the Bureau of Public Roads build a 4 mile access road along the western bank of the Dolores River, starting at the Roc Creek Bridge and running south to junction with our present road as it emerges from the ford. Such a road will make our property easily accessible for year round operation.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

14. Water Supply:

Culinary water is supplied by a perennial spring which flows about 2 gallons per minute. Water for extensive drilling must be hauled from the Dolores River (4 miles.)

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

15. Power:

All power must be generated on the property.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

16. Labor:

The property is operated by owners with no employees.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

17. Equipment and Facilities:

Our present equipment consists of:

1. L-R 105 compressor
2. Leroi Tract-Air compressor 105 cu. ft.
3. Cleveland Wagon Drill with steel & tools
4. L-R Jackhammer with jackleg & column
5. 3/4 ton Chevrolet pick-up
6. Universal Jeep
7. Water Tanks
8. Mine rail & car
9. 400' of 1" pipe
10. Miscellaneous small tools
11. Light Trailer
12. 100' of pressure hose

Buildings:

1. A two-room combination cook shack and bedroom (12x18)
2. Two small tool sheds
3. Two ore bins

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

18. There are no particular conditions or circumstances affecting our operations that are not described above.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

**TOTAL ORE OR MINERAL RESERVES**

| Ore or Mineral Reserve | Estimated Tons (a) | Metal or Mineral Content Per Ton (Grade) (b) | Gross Value Per Ton (c) | Recoverable Unit Value Per Ton (d) | Estimated Cost of Production Per Ton (e) |
|---|---|---|---|---|---|
| Measured (proved) | | | | | |
| Indicated (probable) | | | | | |

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

**CERTIFICATION**

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Andrews & Andrews
(Name of company)

By Keith M. Andrews
(Signature of authorized official)

July 25, 1952
(Date)

Co. Owner
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

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

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

*Not To Be Filled in by Applicant*

Docket No. DMEA-2651
Metal or Mineral
Date Received 7-28-52
Amount $
Participation (Government %)

Name and address of applicant

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Date July 25, 1952

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

## INSTRUCTIONS

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

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

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

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

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

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

2. (*a*) What metals or minerals do you expect to find?

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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JUL 28 1952

16—64067-2

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

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

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

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

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

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

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

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

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

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

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

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

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

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

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

## CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Form M. F. 108

Applicant: Andrews & Andrews
P. O. Box 77
Hugle, Colorado

1.

(a) The property consists of 30 unpatented mining claims acquired through purchase and location.

Following is a list of the claims involved and the method of acquisition:

| Name of Claim | Method of acquisition |
|---|---|
| Badger | Q. C. D.* |
| Basin 1 to 6 | Location |
| Cedar Ridge | Location |
| Crown Prince | Q. C. D. |
| Princess | Location |
| Protector | Q. C. D. |
| Red Rock 1 to 8 | Location |
| Wildcat | Location |
| Wildcat 1 to 7 | Location |
| Wilson 1 to 5 | Q. C. D. |

*Quit Claim Deed

* July 15, 1945 E. J. Davis to Gifford C. Templeton and Keith M. Andrews all rights & titles to Badger and Crown Prince Mining Claims. Recorded Book 305 Page 467

September 2, 1947 J. J. Jackson to Keith M. Andrews and Barney A. Huford all rights and title to Wilson Mining Claims 1, 2 and 5 and the Protector Mining Claim. Recorded Book 322 Page 175.

December 12, 1947 Gifford C. Templeton to B. A. Huford all rights and title to the Badger and Crown Prince. Recorded Book 322 Page 225.

December 1, 1949 B. A. Huford to Keith M. Andrews all rights and title to the Crown Prince, Badger, Protector and Wilson Nos. 1, 2 and 5. Recorded Book 322 Page 506.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1. (a) Continued

There are 4 mining areas that have produced in recent years, namely: Crown Prince (Plate 2) Badger ( Plate 3) Old Badger (Plate 4) and Wildcat. These areas are also indicated on the general map of the property (Plate 1).

We have concentrated our efforts in the past few years to the Badger and Crown Prince workings, the Wildcat was operated under lease.

(b) Not applicable.

(c) The claims occupy portions of Sec. 22, 23, 26, 27, and 28 T. 48 N. R. 18 W. (unsurveyed) N. M. P. M.

Form M. F. 103

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

2. (a) We expect to find uranium bearing rock.

(b) Martin Mesa on which these claims are situated, is an isolated, relatively undeveloped plateau on the north side of Paradox Valley. The U. S. G. S. aerial maps of the region clearly show that Long Park, Martin Mesa and Carpenter Ridge would form a continuous land mass all equidistant from Paradox Valley except for the interruption occasioned by the Dolores River cut and the break of Red Canyon. From the history of parallel marginal zones on each side of Gyp and Paradox Valley, it is safe to assume that Martin Mesa would be as productive as any comparable area if exploration and development had been carried to the same advanced state. Due to the erosional features mentioned, Martin Mesa is isolated to wheeled vehicles for about 4 months of the year and not entirely safe during heavy icing weather. The only approach at present is via a ford across the Dolores River, located a short distance south of the mouth of Mesa Creek. The A. F. C. has recommended an access road be constructed along the westerly bank of the Dolores River extending south from the Roc Creek bridge to a junction with the present road where it emerges from the ford. This road is assured although the date of construction is probably late 1952.

Geologically, Martin Mesa has four recognized ore horizons, all within the Salt Wash member of the Morrison Formation. These mineralized horizons are generally designated as Rims and referred to by number. The 1st Rim being the lowest in the column and lying roughly 25 feet above the Summerville or "Red Beds". In drill exploration, these "Red Beds" are considered to be below all mineralized horizons and as they are quite distinctive, are readily recognized by the drill operator. In reference to the "Red Beds", the 2nd Rim lies 150 feet higher, the 3rd, 200 feet and the 4th, 250 feet.

On Martin Mesa, the 1st Rim covers an area equal to the area of the Mesa itself. The 2nd, 3rd and 4th Rims have been partially eroded, forming isolated buttes. There has been virtually no development

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2. (b) Continued

of the 1st or 2nd Rims within the area we own. It is possible to walk along these horizons and by so doing 12 ore occurences have been located, giving a total of 242 feet of mineralization. To develop these showings, dozer roads must be constructed.

On the adjoining Farmer Boy Claims, the 2nd Rim has been explored and is productive. In the same area, the 1st Rim has been explored only in a couple of places. The 3rd and 4th Rims, lying so close together are difficult to separate. We believe the Crown Prince and Badger workings to be in the 4th Rim. Likewise, the highest Farmer Boy workings are 4th Rim. If this is true, we cannot ascribe any working or ore showings to the 3rd Rim.

There are four methods of exploration adaptable to this ground. 1st--Rim stripping by dozer at some 60¢ per foot. 2nd--Wagon drilling where the necessary depth of hole does not exceed 125 feet at $1.10 per ft. 3rd--Diamond drilling at $2.50 per ft and 4th--Drifting at some $15.00 per ft. We believe drifting to be too expensive and slow for this project. Ore can be found and sufficiently blocked out by using a combination of stripping and drilling and no high cost drifting need be charged against exploration.

A sufficient number of ore occurences have been located to justify the development program we herewith present.

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8. Proposed work and estimated cost.

(a) We propose to explore the Crown Prince and Wild-cat-Red Rock areas by rim stripping and diamond drilling. The stripping is to be along the trace of the 1st Rim, the drilling to be a row of vertical holes parallel to the rim and so located that all horizons are cut. The accompanying map shows the areas and pattern of the exploration. In addition to the preliminary pattern of holes, an additional footage of 40% is allowed for offset drilling around holes which penetrate favorable zones.

Zone 1—Crown Prince area.

(a) Rim stripping of 1st Rim, starting from the "spring" on the Wilson No. 1 Claim and following the ore horizon in a southwesterly direction for a distance of 7000 ft. There are 6 ore occurences in this zone that have been exposed through natural erosion. The stripping we propose will make these ore bodies available to mining and will uncover sections of the horizon that are now covered by talus.
Cost: 7000 ft @ 60¢ per ft. Total $ 4,200.00

(b) Diamond drilling parallel to the rims. For this phase, we propose a string of 51 holes spaced at 100 ft. intervals. These holes will average 500 ft. in depth and will cut the 4 recognized ore horizons of the district. A local drill contractor has quoted a figure of $2.50 per ft. for this drilling. In the case of ore intercepts, a certain amount of offset drilling is anticipated. For this, we have estimated an additional 40% of drilling will be needed.
Cost of drilling:

| | |
|---|---|
| 51 holes 500 ft. deep @ $2.50 per ft. | $23,250.00 |
| plus 40% for offset drilling | 9,300.00 |
| Direct drill costs | $32,550.00 |
| Drill site preparation: | |
| 2 days for D6 Cat @ $80.00 per day | 160.00 |
| Total direct cost for Zone 1 | $32,710.00 |

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3. (e) Continued:

Since July 1948, this area has produced 50,500 pounds of $V_2O_5$ and 8,880 pounds of $U_3O_8$. All this production from the very limited areas depicted on the accompanying sketches. Wherever we have been able to explore ahead of our mining operation, we have increased our ore reserves.

Zone 2—Wildcat-Red Rock area.

(a) Rim stripping.
We have stripped 800 ft. of the 1st Rim in this zone and propose to advance this for an additional 5000 ft. Our work to date located and developed one ore body which has produced 132.5 pounds of $U_3O_8$. This production does not limit or indicate the size of the ore body but merely states production figures as of this writing.
Cost:

| | |
|---|---|
| 5000 ft. @ 60¢ per ft. | $ 3,000.00 |

(b) We propose a limited amount of diamond drilling behind the main ore shows on the Red Rock Claims Nos. 2 and 5. These holes will average 150 ft. in depth and should be spaced on 200 ft. centers. Six holes are thought to be sufficient at this time.

Direct cost of drilling:

| | |
|---|---|
| 6 holes of 150 ft. @ $2.50 per ft. | $ 2,250.00 |
| Plus 40% for offset drilling | 900.00 |
| | $ 3,150.00 |

Drill site preparation has been roughed in. One days dozer work will complete it.
Cost:

| | |
|---|---|
| 1 day D6 Cat @ $80.00 | $ 80.00 |
| Total cost for Zone 2 | $ 3,250.00 |

Aside from the 132 pounds of $U_3O_8$ produced by us, as stated, we have no knowledge of the production from this area. Years ago some rather extensive work was performed on what we now call our Red Rock No. 2 Claim. As to grade or quantity, we have no record. Our reason for including an exploration program of this area at this time is based upon our knowledge of uranium occurence in this district and the firm conviction that lack of exploration is the only reason for the small production.

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5. (a) Continued.

Access Road:

As stated in Form M. F. 100, the Atomic Energy Commission has recommended the construction of 4 miles of year around road to connect with our existing mine road. Our present road winds from the Dolores River level to the top of Martin Mesa in a series of switchbacks that must be eliminated before any sustained development program can be undertaken. Since our road was first constructed in 1959, additional work has been done. From one of these latter developments, a road can be cut through the "slick-rim" that will completely eliminate the worst section of our present road. This proposed new road is identified on the accompanying map as "new construction."

Cost:

| | |
|---|---|
| Dozer, powder and labor | $ 5,000.00 |

5. (b) Time required to start and complete project.

The access road just described is the only preparatory work required. We estimate the road can be completed in 6 days.

The rim stripping and diamond drilling can run concurrently. The average monthly rate for diamond drilling is estimated to be 1250 ft. The total maximum footage proposed is 14,280 ft or 12 drill months. The local contractor who will do our drilling will put 2 drills on our property which means the project will run for 6 months.

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5. List facilities and cost of repairs.

(a) A two-room combination cook shack and sleeping quarters (12x18)
(b) 2 small tool sheds (9x12)

These facilities are in good condition and are adequate for 4 men. As all work is to be contracted and due to the short distance to the homes of the contractors, there is no provision made in this estimate for additional housing.

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6. List and estimated cost of additional facilities.

There is no necessity for additional buildings.

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7. List of operating equipment to be rented, purchased or furnished by owners.

All work is to be contracted with the contractor furnishing all equipment. We do not propose to buy or rent any additional equipment.

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3. Itemized schedule of labor, wages, etc.

All labor will be furnished by contractor. Supervision will cost $500.00 plus $50 travel allowance per month.

$550.00 x 6 $ 3,300.00

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9. List with estimated cost of materials, engineering, utilities, etc.

Materials and supplies are to be furnished by each contractor. Engineering will be on a part time basis at a cost of $4.00 per hour. We estimate 60 hours per month.

| | |
|---|---|
| 60 hrs. @ $4.00 for 6 mos. | $ 1,440.00 |
| Accounting will be on a part time basis at a cost of $250.00 per mo. | |
| $250.00 for 6 mos. | 1,500.00 |
| Geologic supervision will be part time at $500.00 per mo. | |
| $500.00 for 6 mos. | 1,800.00 |
| Assaying $75.00 per mo. | |
| $75.00 for 6 mos | 450.00 |
| | $ 5,190.00 |

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9. (continued)

Recapitulation of Items 3 to 9.

Zone 1

| | |
|---|---|
| Rim stripping | $ 4,200.00 |
| Diamond Drilling | 32,550.00 |
| Drill site preparation | 160.00 |

Zone 2

| | |
|---|---|
| Rim stripping | 3,000.00 |
| Diamond Drilling | 3,150.00 |
| Drill site preparation | 80.00 |
| Access road | 3,000.00 |
| Supervision | 3,500.00 |
| Engineering | 1,440.00 |
| Bookkeeping | 1,500.00 |
| Geology | 1,800.00 |
| Assaying | 450.00 |
| Contingencies | 500.00 |
| Total | $55,130.00 |

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10. Owners' investment.

(a) We are prepared to invest $6,000.00.

(b) This amount is sufficient to meet our cost of the project.

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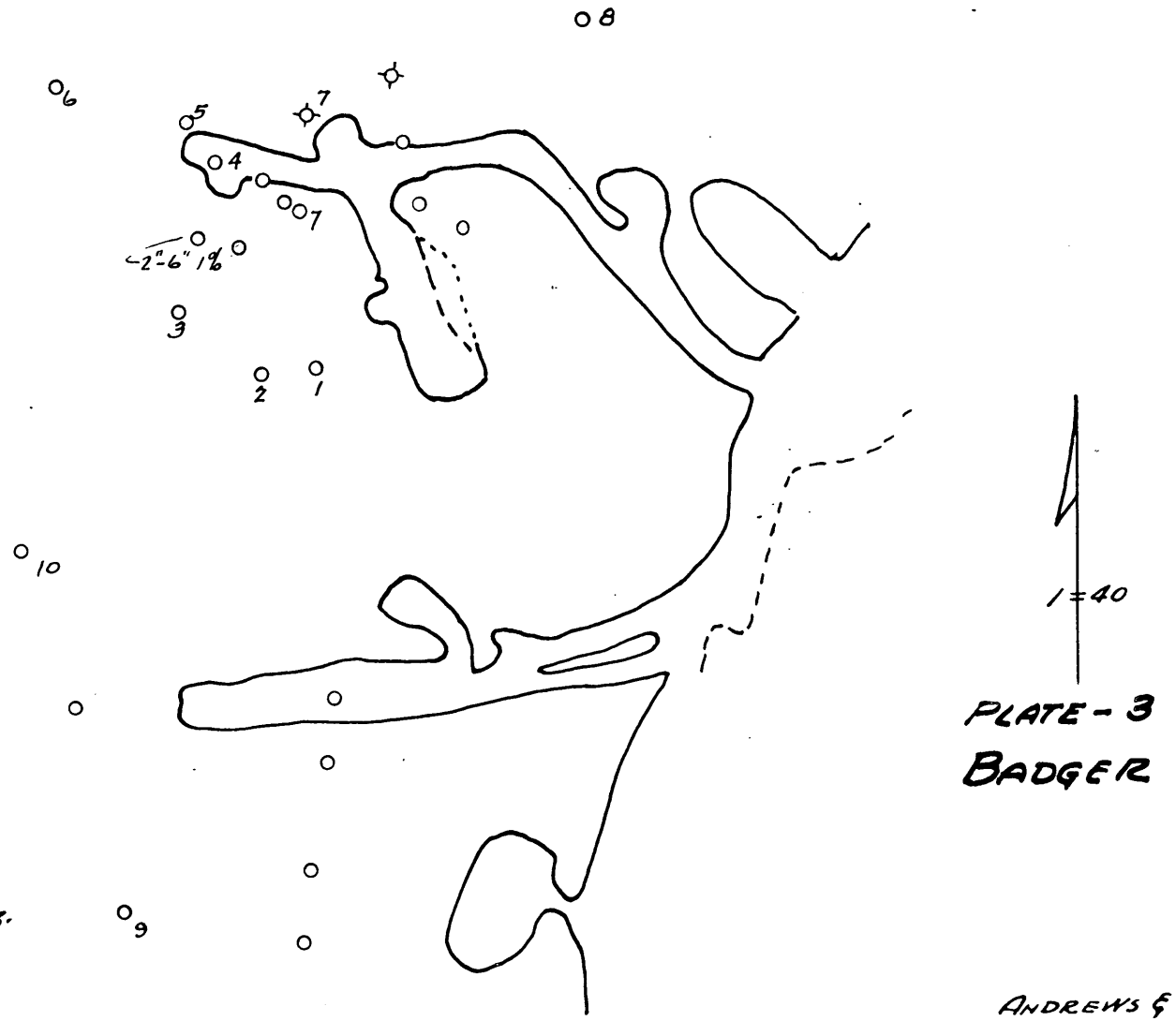
11. Conditions not sufficiently brought out by foregoing questions.

Indicated by not stressed is the geological favorable location of Martin Mesa. Mining and exploration have rather recently shown the strong band of mineralization paralleling Gypsum and Paradox Valleys. Exploration by diamond drills have filled in some gaps that until now have seemed to be blanks.

The position of Martin Mesa in relation to Paradox Valley coupled with the wide spread mineralization as evidenced by the Ore Shows means that the area is worthy of extensive exploration.



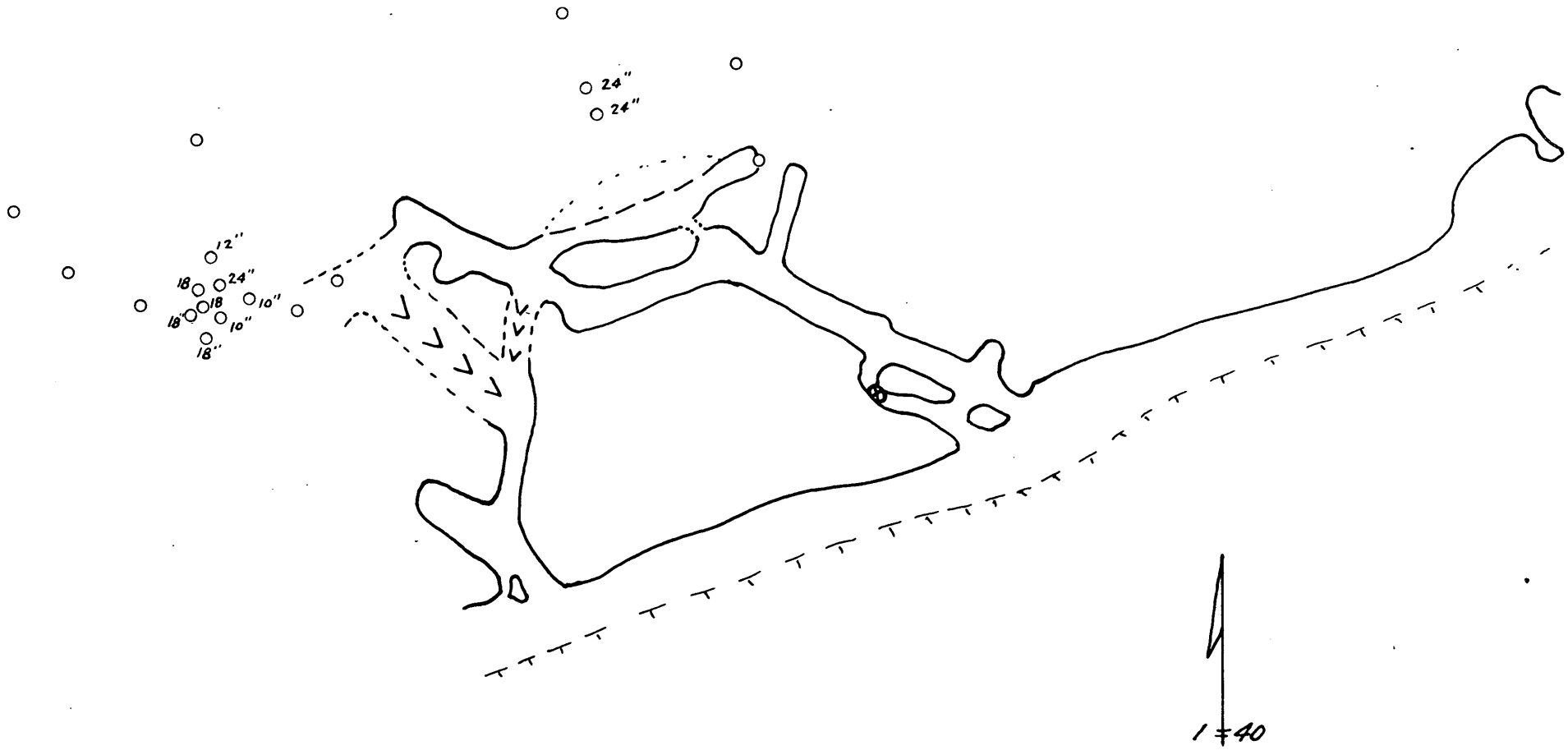

1 - Hit crack @ 27' No Return
2 - No Ore - good formation @ 35'
3 - Hit crack - No Ore.
4 - Short
5 - 35' deep - Good ore - upper horiz.
6 - 42' " - Too shallow
7 - Drilled to top layer - 24" ore
8 - Good formation - No ore
9 - No ore @ 35'
10 - " " - Not deep enough.

PLATE - 3

BADGER

ANDREWS & ANDREWS

NUCLA, COLO.

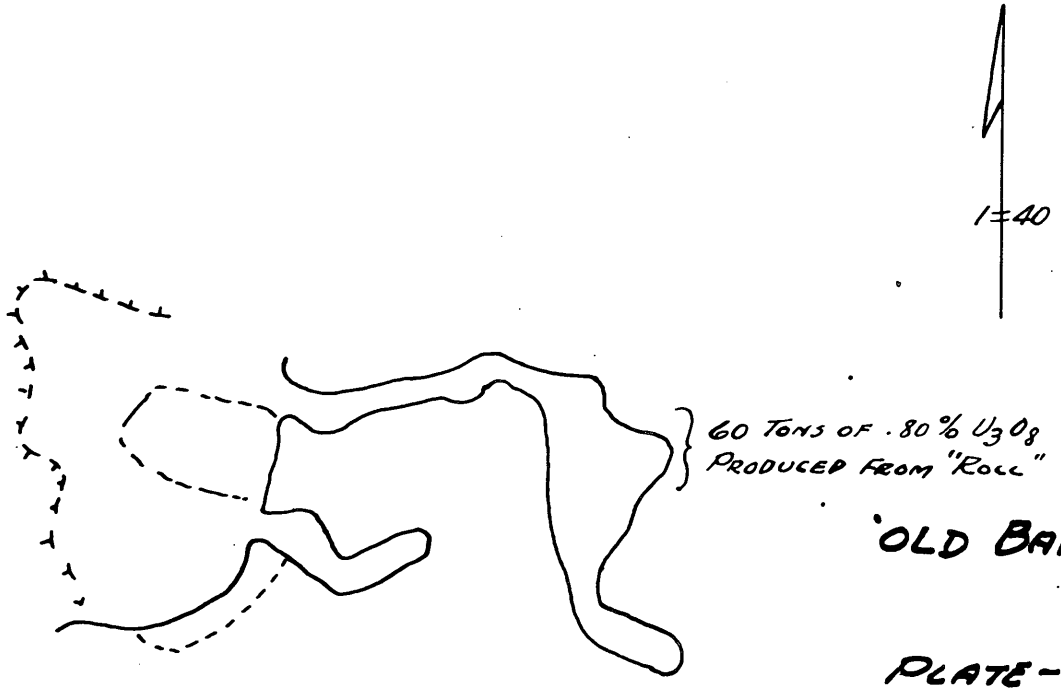



19 HOLES - 12 IN ORE

PLATE- 2

CROWN PRINCE

ANDREWS & ANDREWS
NUCLA, COLO.




OLD BADGER

PLATE-4.

ANDREWS & ANDREWS
NUCLA, COLO.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

# GENERAL TECHNICAL DATA
# FOR USE UNDER THE
# DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2631

Date received 7-28-52

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Name and address of applicant

Date July 25, 1952

## INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

## GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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5. Number of years in production .....

   If not in production or operation, estimated date when production will begin .....
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

| Name and Address (a) | Official Title (If officer is also director indicate by "D") (b) | Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c) | Estimated Net Worth Outside of Interest in Applicant (d) | Number of Shares Held in Applicant Corporation | | Life Insurance Carried for Benefit of Applicant | |
|---|---|---|---|---|---|---|---|
| | | | | Common (e) | Preferred (f) | Amount (g) | Net Cash Surrender Value After Loans (h) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Total | | x x x x x | | | x x x x x | x x x x x |

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

**For Corporate Applicants**

| Item | Authorized (a) | Outstanding (b) | Par Value (c) | Number of Shares Outstanding (d) | Dividend Rate Last Paid* (e) |
|---|---|---|---|---|---|
| Common stock | $ | $ | $ | | |
| Preferred stock | $ | $ | $ | | |

*Indicate period covered.

10. Production:

| Item | Kind of Product (a) | 1948 Total (b) | 1949 Total (c) | 1950 Total (d) | Present Average Monthly (e) |
|---|---|---|---|---|---|
| 1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.) | | | | | |
| 2. Quantity of product processed (specify unit of measure and type of process) | | | | | |
| 3. Quantity and grade of product sold or shipped (specify units of measure) | | | | | |

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by an available report on the geology and ore reserves.

Form M. F. 100

Applicant: Andrews & Andrews
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Nucla, Colorado

1. Materials produced:

(a) The chief mine product is uranium oxide.

(b) The byproduct is vanadium oxide.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

2. The mine is an underground Uranium-Vanadium mine.

(a) There are no linear feet of shafts.

(b) See (d)

(c) There are no linear feet of tunnels or adits.

(d) There is in excess of 1200 feet of all classes of headings. All face advance has been on ore and in most instances, the faces have been advanced as stoping.

There is no water in any of the mine workings. During 8 months of 1951, two men mined, shipped and sold 212,431 pounds of ore containing 2641 pounds of $U_3O_8$ and 10,458 pounds of $V_2O_5$. There are sufficient ore exposures to justify estimating a potential of 50 tons a day production without the installation of any special equipment.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

5. Location of Mine.

(a) It is 9 miles Northwest of the U. S. V. Mill at Uravan, Colorado.

(b) It is in the Paradox Mining District (Martin Mesa Area).

(c) It lies in portions of Sec. 22, 23, 26, 27, 28, T. 48 N. R 18 W N. M. P. M.

(d) It is in Montrose County, Colorado.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

4. Ownership and Operation of property.

(a) The property is not in operation at this date. Work is suspended temporarily due to high water in the Dolores River, making the ford (the only access to the mine) impassable.

(b) We are operating the property as owners.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

5. Years of production.

(a) Uranium or vanadium has been produced from the ground now embraced by our claims since early in the '20s. The present owners have produced steadily since 1946. Prior to our acquisition, the former owner had shipped since 1959. Production prior to 1959 is indicated by old dumps.

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Nucla, Colorado

6. Experience of Operators.

(a) The applicants, Keith M. Andrews, has had 12 years uranium mining experience, largely confined to this one property. The other applicant, Donald Andrews, has had 5 years uranium production experience. His business experience includes several years management of the Nucla Flying Service.

(b) The owners manage the operation and intend to rely upon consulting geologists and engineers for aid in technical problems.

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Nucla, Colorado

7. History:

(a) Until 1951, all exploration was confined to probing ore exposures along the rim outcrops. In this manner, commercial ore has been developed on 7 claims. In addition to these explored ore showings, there are at least 10 other outcrops that have been located but not tested. In each case, the cost of road construction to the shows have been beyond our economic means.

During 1951, with the advent of the bonus program of the A. E. C. we were able to sink a few wagon drill holes into the 4th Rim ore horizon ahead of our mining faces. On our Crown Prince Claim, 12 of 19 holes penetrated ore. On our Badger Claim, 16 out of 26 holes penetrated ore. We now know several of our holes failed to reach the ore horizon by about 12 feet. Our equipment was only effective for an average depth of 35 feet. We fully intend to pursue this type of exploration during 1952 but with equipment capable of sufficient depth to explore the 4th Rim horizon in the immediate vicinity of our Crown Prince and Badger workings. In addition to our wagon drilling program, we also stripped 800 feet of the 1st Rim on our Wildcat Claims. In so doing, we developed one ore body which produced 132.5 pounds of $U_3O_8$. The mine can be reached by car or truck only when the Dolores River is sufficiently low to permit fording. Generally the water drops by the 1st of July and the ford is passable until the next spring run-off, or as sometimes happens, until a thick ice forms during a short stretch in the winter.

(b) The only other drilling ever performed on the Mesa was on an adjoining property known as the Farmer Boy which lies about ½ mile north of our Badger Mine. Tony Scala, the present owner, contracted for some 30 holes on a Mesa point 1½ miles north of the Badger workings. We do not have the logs or pattern of these holes but have been told 10 penetrated ore which was deemed sufficient encouragement to warrant holding the property. Scala, who has a very fine producing property in Bull Canyon, says he has no intention of further exploration of the Farmer Boy until the A. E. C.'s access road to Martin Mesa is built.

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Nucla, Colorado

7. History (continued)

(c) There are no reports on the property available to me. On two different occasions, the Engineering Department of the Colorado Raw Materials Office of the A. E. C. have made examinations of Martin Mesa in connection with investigations: 1st, for an access road and, 2nd for Certification of our claims for bonus payment. I am informed these reports are available to you.

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Nucla, Colorado

8. Names and address of officers, etc.

(a) Keith M. Andrews, P. O. Box 77, Nucla, Colorado) co-owners
Donald Andrews P. O. Box 77, Nucla, Colorado )

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

9. Capital Stock Issues:

Not applicable.

Applicant: Andrews & Andrews
Box 77
Nucla, Colorado

10. Production:

| Item | Kind of product | 1948 Total | 1949 Total | 1950 Total | Present Average Monthly |
|---|---|---|---|---|---|
| 1. Quantity of product mined (short tons) | Crude Ore | 55.8 | 119.7 | 68.0 | 15.0 |
| 2. Quantity of product processed | Not applicable | | | | |
| 3. Quantity and grade of product sold or shipped (short tons) | % $V_2O_5$ | 5.2 | 3.2 | 2.5 | 4.9 |
| | % $U_3O_8$ | 1.06 | .75 | .58 | 1.20 |

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Nucla, Colorado

11. We do contemplate a change in the present average monthly rate of production. See attached application Form M. F. 105.

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Nucla, Colorado

12. Ore or Mineral Reserves:

(a) Within the scope of our operation, we have found the 4th Rim to be the host of high grade "trees" while the 1st Rim ore tends to be confined to channel filling. Elsewhere on the Plateau, extensive drilling has developed the largest ore bodies on the 1st Rim.

Every ore show represented on the accompanying map (Plate 1) is of sufficient size and grade to warrant exploration by drifting. They are similar in every respect to ore shows in more accessible areas that have led miners into ore bodies that are still producing after years of exploitation.

To our knowledge, there is not another area on the Plateau that is as well mineralized but as little developed.

(b) Ore reserves

| Horizon | Claim | Positive* | Indicated* | Inferred* | Total |
|---|---|---|---|---|---|
| 4th | Crown Prince | 100 | 50 | | 150 |
| 4th | Badger | 150 | 75 | | 225 |
| 1st | all claims | | | 850 | 850 |
| | | | Total all classes | | 1225 |

* Positive ore--Ore penetrated by 2 or more holes.

Indicated--Good formation (drill hole data) but no mineralization.

Inferred--Rim exposures were allowed 25 ft of depth.

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Nucla, Colorado

15. Access Roads.

It is 4 miles from the mine to junction with State Highway 141 along the Dolores River, thence 9 miles to Uravan over a good gravel-surfaced road. The 4 miles of mine road is a typical uranium field truck road.

The Colorado Raw Materials Office of the A. E. C. has recommended that the Bureau of Public Roads build a 4 mile access road along the western bank of the Dolores River, starting at the Roc Creek Bridge and running south to junction with our present road as it emerges from the ford. Such a road will make our property easily accessible for year round operation.

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Nucla, Colorado

14. Water Supply:

Culinary water is supplied by a perennial spring which flows about 2 gallons per minute. Water for extensive drilling must be hauled from the Dolores River (4 miles.)

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P. O. Box 77
Nucla, Colorado

15. Power:

All power must be generated on the property.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

16. Labor:

The property is operated by owners with no employees.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

17. Equipment and Facilities:

Our present equipment consists of:

1. L-R 105 compressor
2. Leroi Tract-Air compressor 105 cu. ft.
3. Cleveland Wagon Drill with steel & tools
4. L-R Jackhammer with jackleg & column
5. 3/4 ton Chevrolet pick-up
6. Universal Jeep
7. Water Tanks
8. Mine rail & car
9. 400' of 1" pipe
10. Miscellaneous small tools
11. Light Trailer
12. 100' of pressure hose

Buildings:

1. A two-room combination cook shack and bedroom (12x18)
2. Two small tool sheds
3. Two ore bins

Applicant: Andrews & Andrews
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Nucla, Colorado

18. There are no particular conditions or circumstances affecting our operations that are not described above.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

**TOTAL ORE OR MINERAL RESERVES**

| Ore or Mineral Reserve | Estimated Tons (a) | Metal or Mineral Content Per Ton (Grade) (b) | Gross Value Per Ton (c) | Recoverable Unit Value Per Ton (d) | Estimated Cost of Production Per Ton (e) |
|---|---|---|---|---|---|
| Measured (proved) | | | | | |
| Indicated (probable) | | | | | |

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, even or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

**CERTIFICATION**

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Andrews & Andrews
(Name of company)

By Keith M. Andrews
(Signature of authorized official)

July 25, 1952
(Date)

Co-Owner
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

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

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

*Not To Be Filled in by Applicant*

Docket No. DMEA-26 21
Metal or Mineral
Date Received 7-28-52
Amount $
Participation (Government %)

Name and address of applicant

Andrews & Andrews
P. O. Box 77
Nucla, Colorado

Date July 25, 1952

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

## INSTRUCTIONS

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

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

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

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

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

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

RECEIVED
JUL 28 1952

2. (*a*) What metals or minerals do you expect to find?

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

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

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

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

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

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

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

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

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

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

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

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

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

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

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

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

## CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

| | | |
|---|---|---|
| (Name of company) | By | (Signature of authorized official) |
| (Date) | | (Title) |

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Form M. F. 105

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1.

(a) The property consists of 50 unpatented mining claims acquired through purchase and location.

Following is a list of the claims involved and the method of acquisition:

| Name of Claim | Method of acquisition |
|---|---|
| Badger | Q. C. D.* |
| Basin 1 to 6 | Location |
| Cedar Ridge | Location |
| Crown Prince | Q. C. D. |
| Princess | Location |
| Protector | Q. C. D. |
| Red Rock 1 to 8 | Location |
| Wildcat | Location |
| Wildcat 1 to 7 | Location |
| Wilson 1 to 5 | Q. C. D. |

*Quit Claim Deed

* July 15, 1945 E. J. Davis to Gifford C. Templeton and Keith M. Andrews all rights & titles to Badger and Crown Prince Mining Claims. Recorded Book 505 Page 467

September 2, 1947 J. J. Jackson to Keith M. Andrews and Barney A. Huford all rights and title to Wilson Mining Claims 1, 2 and 5 and the Protector Mining Claim. Recorded Book 522 Page 175.

December 12, 1947 Gifford C. Templeton to B. A. Huford all rights and title to the Badger and Crown Prince. Recorded Book 522 Page 225.

December 1, 1949 B. A. Huford to Keith M. Andrews all rights and title to the Crown Prince, Badger, Protector and Wilson Nos. 1, 2 and 5. Recorded Book 522 Page 506.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

1. (a) Continued

There are 4 mining areas that have produced in recent years, namely: Crown Prince (Plate 2) Badger ( Plate 3) Old Badger (Plate 4) and Wildcat. These areas are also indicated on the general map of the property (Plate 1).

We have concentrated our efforts in the past few years to the Badger and Crown Prince workings, the Wildcat was operated under lease.

(b) Not applicable.

(c) The claims occupy portions of Sec. 22, 23, 26, 27, and 28 T. 48 N. R. 18 W. (unsurveyed) N. M. P. M.

Form M. F. 105

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

2. (a) We expect to find uranium bearing rock.

(b) Martin Mesa on which these claims are situated, is an isolated, relatively undeveloped plateau on the north side of Paradox Valley. The U. S. G. S. aerial maps of the region clearly show that Long Park, Martin Mesa and Carpenter Ridge would form a continuous land mass all equidistant from Paradox Valley except for the interruption occasioned by the Dolores River cut and the break of Red Canyon. From the history of parallel marginal zones on each side of Gyp and Paradox Valley, it is safe to assume that Martin Mesa would be as productive as any comparable area if exploration and development had been carried to the same advanced state. Due to the erosional features mentioned, Martin Mesa is isolated to wheeled vehicles for about 4 months of the year and not entirely safe during heavy icing weather. The only approach at present is via a ford across the Dolores River, located a short distance south of the mouth of Mesa Creek. The A. F. C. has recommended an access road be constructed along the westerly bank of the Dolores River extending south from the Roc Creek bridge to a junction with the present road where it emerges from the ford. This road is assured although the date of construction is probably late 1952.

Geologically, Martin Mesa has four recognized ore horizons, all within the Salt Wash member of the Morrison Formation. These mineralized horizons are generally designated as Rims and referred to by number. The 1st Rim being the lowest in the column and lying roughly 25 feet above the Summerville or "Red Beds". In drill exploration, these "Red Beds" are considered to be below all mineralized horizons and as they are quite distinctive, are readily recognized by the drill operator. In reference to the "Red Beds", the 2nd Rim lies 150 feet higher, the 3rd, 200 feet and the 4th, 250 feet.

On Martin Mesa, the 1st Rim covers an area equal to the area of the Mesa itself. The 2nd, 3rd and 4th Rims have been partially eroded, forming isolated buttes. There has been virtually no development

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Nucla, Colorado

2. (b) Continued

of the 1st or 2nd Rims within the area we own. It is possible to walk along these horizons and by so doing 12 ore occurences have been located, giving a total of 242 feet of mineralization. To develop these showings, dozer roads must be constructed.

On the adjoining Farmer Boy Claims, the 2nd Rim has been explored and is productive. In the same area, the 1st Rim has been explored only in a couple of places. The 3rd and 4th Rims, lying so close together are difficult to seperate. We believe the Crown Prince and Badger workings to be in the 4th Rim. Likewise, the highest Farmer Boy workings are 4th Rim. If this is true, we cannot ascribe any working or ore showings to the 3rd Rim.

There are four methods of exploration adapteble to this ground. 1st--Rim stripping by dozer at some 60¢ per foot. 2nd--Wagon drilling where the necessary depth of hole does not exceed 125 feet at $1.10 per ft. 3rd--Diamond drilling at $2.50 per ft and 4th--Drifting at some $15.00 per ft. We believe drifting to be too expensive and slow for this project. Ore can be found and sufficiently blocked out by using a combination of stripping and drilling and no high cost drifting need be charged against exploration.

A sufficient number of ore occurences have been located to justify the development program we herewith present.

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P. O. Box 77
Nucla, Colorado

3. Proposed work and estimated cost.

(a) We propose to explore the Crown Prince and Wild-cat-Red Rock areas by rim stripping and diamond drilling. The stripping is to be along the trace of the 1st Rim, the drilling to be a row of vertical holes parallel to the rim and so located that all horizons are cut. The accompanying map shows the areas and pattern of the exploration. In addition to the preliminary pattern of holes, an additional footage of 40% is allowed for offset drilling around holes which penetrate favorable zones.

Zone 1--Crown Prince area.

(a) Rim stripping of 1st Rim, starting from the "spring" on the Wilson No. 1 Claim and following the ore horizon in a southwesterly direction for a distance of 7000 ft. There are 6 ore occurences in this zone that have been exposed through natural erosion. The stripping we propose will make these ore bodies available to mining and will uncover sections of the horizon that are now covered by talus.
Cost: 7000 ft @ 60¢ per ft. Total $ 4,200.00

(b) Diamond drilling parallel to the rims. For this phase, we propose a string of 51 holes spaced at 100 ft. intervals. These holes will average 300 ft. in depth and will cut the 4 recognized ore horizons of the district. A local drill contractor has quoted a figure of $2.50 per ft. for this drilling. In the case of ore intercepts, a certain amount of offset drilling is anticipated. For this, we have estimated an additional 40% of drilling will be needed.
Cost of drilling:

| | |
|---|---|
| 51 holes 300 ft. deep @ $2.50 per ft. | $25,250.00 |
| plus 40% for offset drilling | 9,300.00 |
| Direct drill costs | $32,550.00 |

Drill site preparation:

| | |
|---|---|
| 2 days for D6 Cat @ $80.00 per day | 160.00 |
| Total direct cost for Zone 1 | $32,710.00 |

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Nucla, Colorado

3. (e) Continued:

Since July 1948, this area has produced 30,580 pounds of $V_2O_5$ and 6,330 pounds of $U_3O_8$. All this production from the very limited areas depicted on the accompanying sketches. Wherever we have been able to explore ahead of our mining operation, we have increased our ore reserves.

Zone 2--Wildcat-Red Rock area.

(a) Rim stripping.
We have stripped 800 ft. of the 1st Rim in this zone and propose to advance this for an additional 5000 ft. Our work to date located and developed one ore body which has produced 152.5 pounds of $U_3O_8$. This production does not limit or indicate the size of the ore body but merely states production figures as of this writing.
Cost:

| | |
|---|---|
| 5000 ft. @ 60¢ per ft. | $ 3,000.00 |

(b) We propose a limited amount of diamond drilling behind the main ore shows on the Red Rock Claims Nos. 2 and 3. These holes will average 150 ft. in depth and should be spaced on 200 ft. centers. Six holes are thought to be sufficient at this time.

Direct cost of drilling:

| | |
|---|---|
| 6 holes of 150 ft. @ $2.50 per ft. | $ 2,250.00 |
| Plus 40% for offset drilling | 900.00 |
| | $ 3,150.00 |

Drill site preparation has been roughed in. One days dozer work will complete it.
Cost:

| | |
|---|---|
| 1 day D6 Cat @ $80.00 | $ 80.00 |
| Total cost for Zone 2 | $ 3,250.00 |

Aside from the 152 pounds of $U_3O_8$ produced by us, as stated, we have no knowledge of the production from this area. Years ago some rather extensive work was performed on what we now call our Red Rock No. 2 Claim. As to grade or quantity, we have no record. Our reason for including an exploration program of this area at this time is based upon our knowledge of uranium occurence in this district and the firm conviction that lack of exploration is the only reason for the small production.

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Nucla, Colorado

2. (e) Continued.

Access Road:

As stated in Form M. P. 100, the Atomic Energy Commission has recommended the construction of 4 miles of year around road to connect with our existing mine road. Our present road winds from the Dolores River level to the top of Martin Mesa in a series of switchbacks that must be eliminated before any sustained development program can be undertaken. Since our road was first constructed in 1958, additional work has been done. From one of these latter developments, a road can be cut through the "slick-rim" that will completely eliminate the worst section of our present road. This proposed new road is identified on the accompanying map as "new construction."

Cost:

| | |
|---|---|
| Dozer, powder and labor | $ 3,000.00 |

5. (b) Time required to start and complete project.

The access road just described is the only preparatory work required. We estimate the road can be completed in 6 days.

The rim stripping and diamond drilling can run concurrently. The average monthly rate for diamond drilling is estimated to be 1250 ft. The total maximum footage proposed is 14,280 ft or 12 drill months. The local contractor who will do our drilling will put 2 drills on our property which means the project will run for 6 months.

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Nucla, Colorado

5. List facilities and cost of repairs.

(a) A two-room combination cook shack and sleeping quarters (12x18)
(b) 2 small tool sheds (9x12)

These facilities are in good condition and are adequate for 4 men. As all work is to be contracted and due to the short distance to the homes of the contractors, there is no provision made in this estimate for additional housing.

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Nucla, Colorado

6. List and estimated cost of additional facilities.

There is no necessity for additional buildings.

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P. O. Box 77
Nucla, Colorado

7. List of operating equipment to be rented, purchased or furnished by owners.

All work is to be contracted with the contractor furnishing all equipment. We do not propose to buy or rent any additional equipment.

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P. O.Box 77
Hugle, Colorado

3. Itemized schedule of labor, wages, etc.

All labor will be furnished by contractor. Supervision will cost $500.00 plus $50 travel allowance per month.

$550.00 x 6 $ 3,300.00

Applicants: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

9. List with estimated cost of materials, engineering, utilities, etc.

Materials and supplies are to be furnished by each contractor. Engineering will be on a part time basis at a cost of $4.00 per hour. We estimate 60 hours per month.

| | |
|---|---|
| 60 hrs. @ $4.00 for 6 mos. | $ 1,440.00 |
| Accounting will be on a part time basis at a cost of $250.00 per mo. | |
| $250.00 for 6 mos. | 1,500.00 |
| Geologic supervision will be part time at $300.00 per mo. | |
| $300.00 for 6 mos. | 1,800.00 |
| Assaying $75.00 per mo. | |
| $75.00 for 6 mos | 450.00 |
| | $ 5,190.00 |

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

9. (continued)

Recapitulation of Items 3 to 9.

Zone 1

| | |
|---|---|
| Rim stripping | $ 4,200.00 |
| Diamond Drilling | 32,550.00 |
| Drill site preparation | 160.00 |

Zone 2

| | |
|---|---|
| Rim stripping | 3,000.00 |
| Diamond Drilling | 3,150.00 |
| Drill site preparation | 80.00 |
| Access road | 3,000.00 |
| Supervision | 3,500.00 |
| Engineering | 1,440.00 |
| Bookkeeping | 1,600.00 |
| Geology | 1,800.00 |
| Assaying | 450.00 |
| Contingencies | 500.00 |
| Total | $55,130.00 |

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

10. Owners' investment.

(a) We are prepared to invest $6,000.00.

(b) This amount is sufficient to meet our cost of the project.

Applicant: Andrews & Andrews
P. O. Box 77
Nucla, Colorado

11. Conditions not sufficiently brought out by foregoing questions.

Indicated by not stressed is the geological favorable location of Martin Mesa. Mining and exploration have rather recently shown the strong band of mineralization paralleling Gypsum and Paradox Valleys. Exploration by diamond drills have filled in some gaps that until now have seemed to be blanks.

The position of Martin Mesa in relation to Paradox Valley coupled with the wide spread mineralization as evidenced by the Ore Shows means that the area is worthy of extensive exploration.

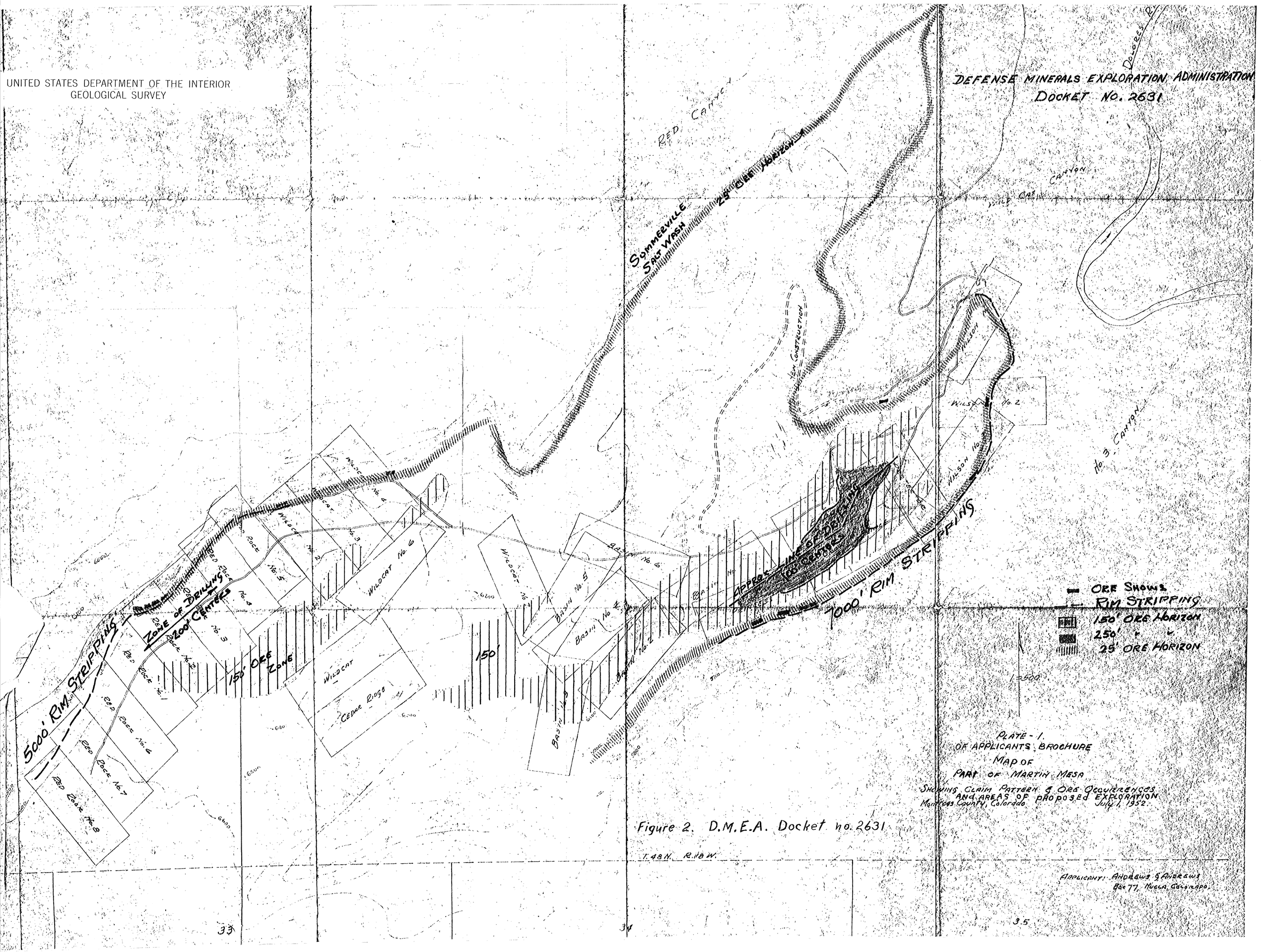


Figure 2. D.M.E.A. Docket no. 2631

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

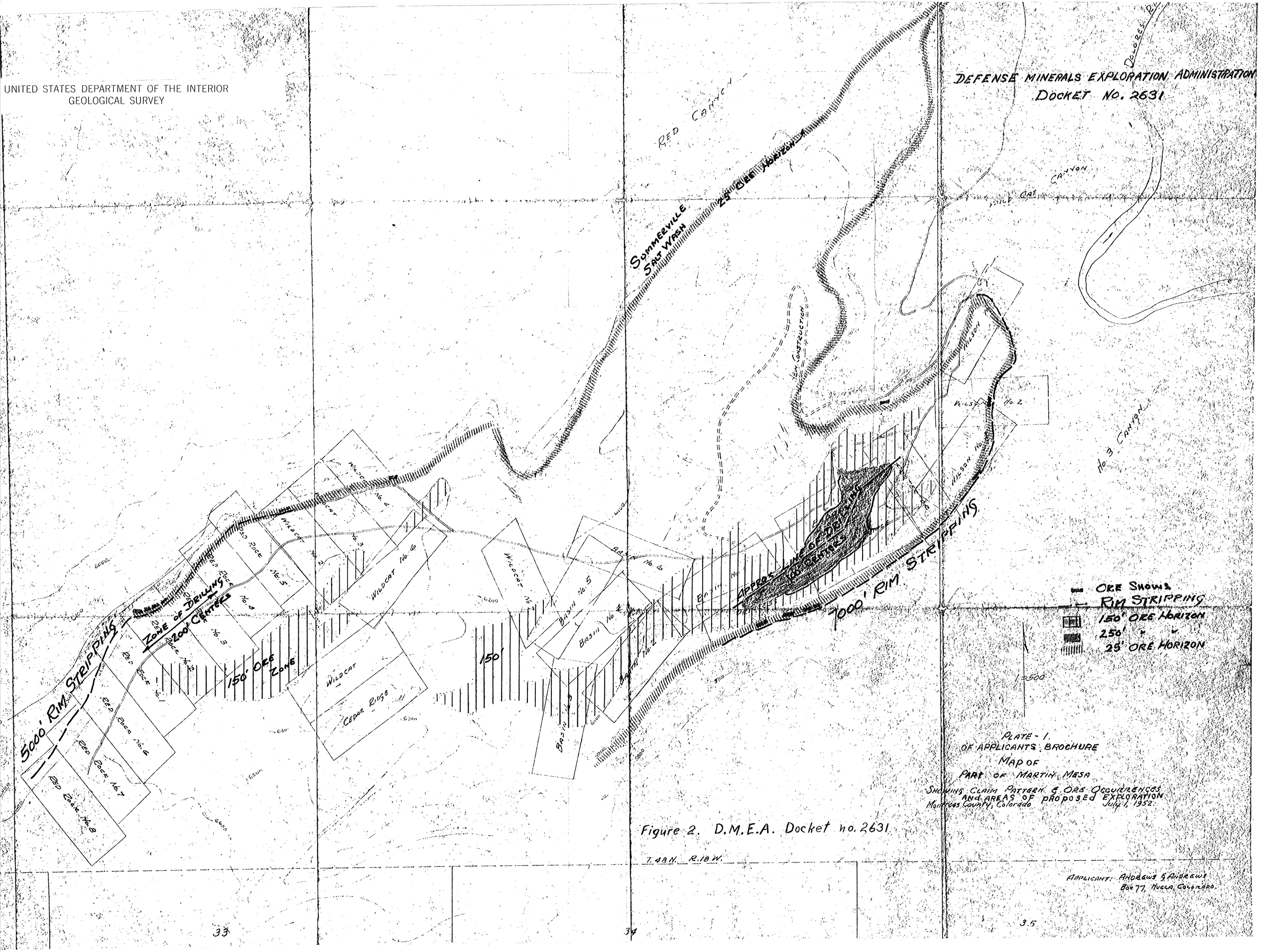


Figure 2. D.M.E.A. Docket no. 2631

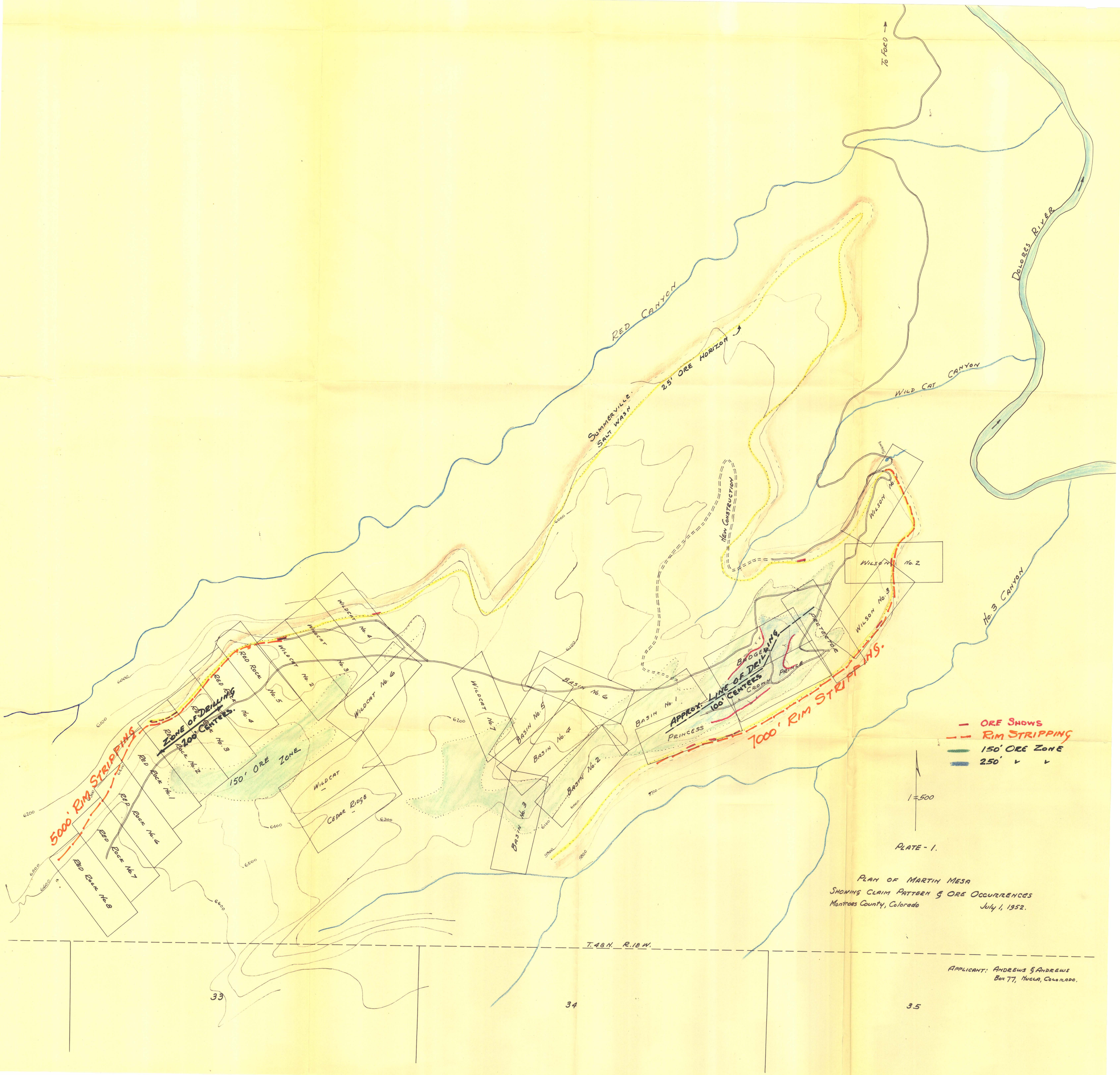


Plate - 1.

Plan of Martin Mesa
Showing Claim Pattern & Ore Occurrences
Montrose County, Colorado
July 1, 1952.

Applicant: Andrews & Andrews
Box 77, Nucla, Colorado.

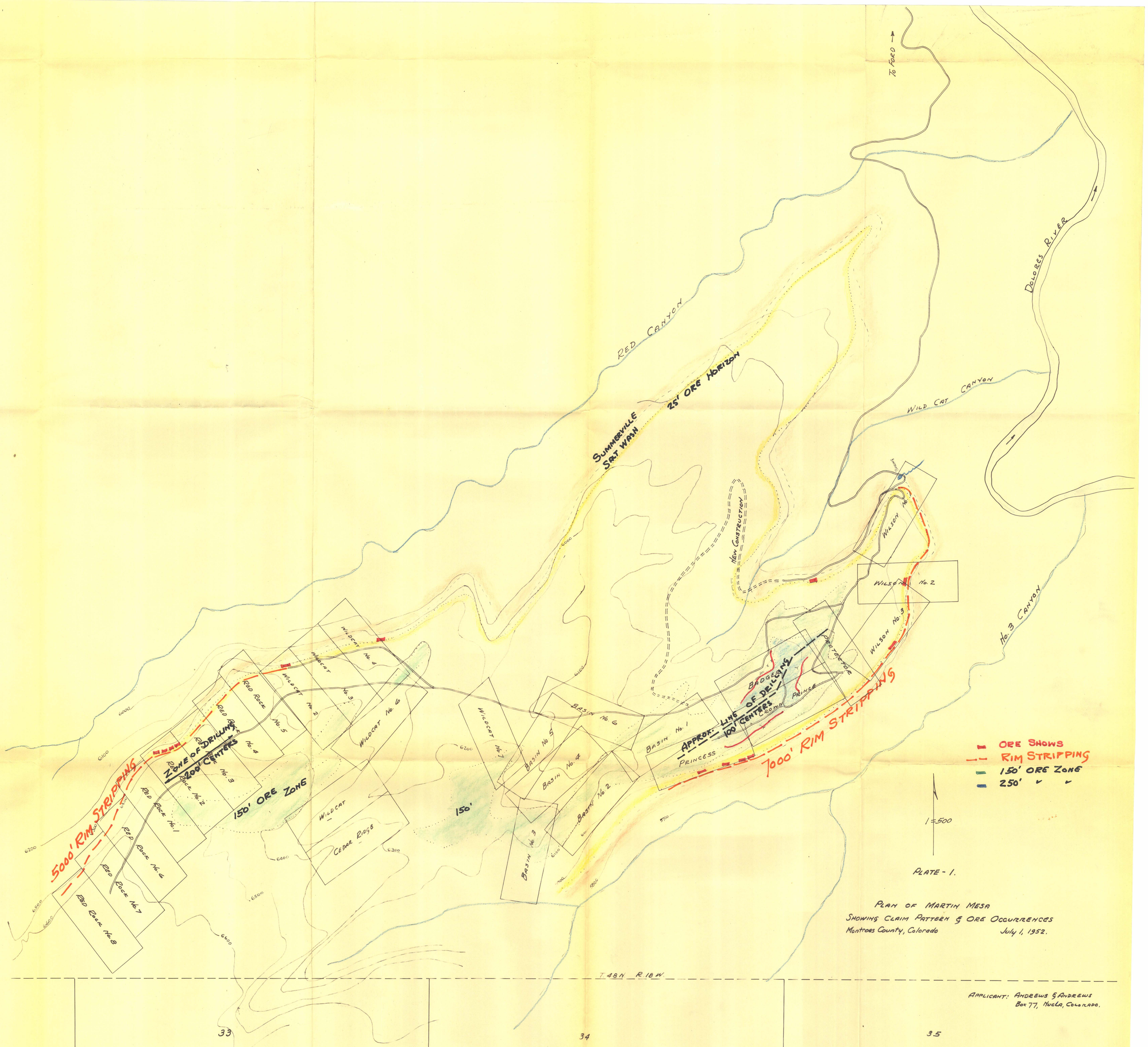


PLATE - 1.

PLAN OF MARTIN MESA
SHOWING CLAIM PATTERN & ORE OCCURRENCES
Montrose County, Colorado July 1, 1952.

APPLICANT: ANDREWS & ANDREWS
Box 77, HUGLA, COLORADO.