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

224 New Customhouse
Denver 2, Colorado

October 13, 1953

Memorandum

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

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3089 (Uranium), Manol Claims, McKinley County, New Mexico

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

We believe that the DMEA should be exceedingly cautious when approving drilling contracts in this area owing to the lack of surface indications that would serve to delimit the favorable areas. The extremely close drilling required approaches development rather than exploration. The size of the anticipated discoveries seems to require the application of all available methods which offer some chance of reducing the total costs of the exploratinn.

The applicant proposes to have the drilling performed by the Four Corners Exploration Company, an organization in which the applicant, F. O. Manol, owns a half interest.

The applicant's amended application proposes to confine the exploration work to Lot 3 and the adjoining N 1/2 of the E 1/2 of SW-1/4 Sec. 10. His original application requested $79,819.40 to drill 160 acres and the amended application asks for $73,559.54 to drill only 80 acres.

We believe that the project will disclose a significant amount of uranium, however, the applicant has withdrawn a large area in the amended application. The withdrawn area and the 80 acres adjoining the project on the south, which is also owned by the applicant, will profit by the proposed exploration. Therefore, we do not believe it is in the best interests of the Government to approve this application unless the applicant is willing to subordinate his adjoining holdings.

If, however, the Commodity Committee believes that this type of program can be justified under the DMEA regulations we recommend that a short form contract be prepared on a unit cost basis of not more than $1.00 per foot of hole drilled.

John F. Shaw
John F. Shaw
for W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

cc: WHStorms w/copy of Report of Examination
~~MPSharide w/copy of Report of Examination~~
RPFischer w/copy of Report of Examination
EEGordon w/copy of Report of Examination
AHKoschmann w/copy of Report of Examination
DMEA w/copy of Report of Examination
Mining Division w/copy of Report of Examination

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

October 15, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3089 (Uranium), Manol Claims, McKinley County, New Mexico.

Enclosed are eleven copies of the Engineering Report on the subject docket.

The applicant's original application requested $79,819.40 to drill an area comprising 160 acres. His amended application requests $73,559.54 to drill one half that area or 80 acres. Adjoining ground held by the applicant would be benefited by the proposed exploration but would not be subordinated.

We do not believe it is in the best interests of the Government to approve this application ubless the applicant will subordinate his adjoining ground.

John F. Shaw
For W. H. King

Enclosures

UNITED STATES
Department of the Interior
Geological Survey
P. O. Box 360
Grand Junction, Colo.

October 8, 1953.

Memorandum

To: A. H. Koschmann and W. H. King, Region IV

From: R. P. Fischer, Acting Supervisor, Colorado Plateau District

Subject: DMEA 3089, Revised application F. O. Manol, McKinley County, N. M.

The original application was received in early August and a joint field examination was made by J. D. Strobell and Lloyd Farnham on August 11. Strobell's report on this examination was transmitted to Denver on August 21. This report outlined a tentative plan of exploration, subject to review and possible modification after Manol's revised application was received,

The revised application was received in Grand Junction on September 28, along with a copy of Farnham's report regarding the revised application. This was discussed with Strobell during his visit to Grand Junction on October 2. On October 5 a letter was received from Storms, and attached to it was a statement of explanation from Farnham regarding a minor point of confusion in Farnham's report.

After a review of Strobell's report of August 21, and Farnham's report on the revised application, it is my personal opinion that the two reports are sufficiently compatible so that no additional report from Strobell is needed. The exploration proposed by the two reports is identical in general plan. Strobell's report, however, included drilling in the N 1/2, SE 1/4, sec. 30 as well as the N 1/2, SW 1/4, sec. 30; whereas, the revised application requests exploration only in the N 1/2, SW 1/4, sec. 30; thus Strobell's report deals with twice as much ground and equivalent amount of drilling than the revised application.

I will not request Strobell to prepare any addition comments regarding the Manol application unless you request me to do so.

Returned herewith is one copy of Farnham's report on the revised application and the copy of the revised application, both of which were sent to me by Storms with the request that we transmit them to King's office.

/s/ R. P. Fischer
Acting Supervisor
Colorado Plateau District

Enclosures (2)
Farnham's Rpt. and
Revised application to King

Mining Division
Date Rec'd.
SEP 28 1953
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

September 25, 1953

Air Mail

Memorandum

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

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject ; Report on Docket DMEA-3089, F. O. Manol's Uranium Property, McKinley County, N. Mex.

Enclosed are original and 9 copies of a report on the above property by L. L. Farnham of the Bureau of Mines. One copy was sent to Dick Fischer and he will send it on to you. A separate section on Geology will be submitted by J. D. Strobell of the Geological Survey.

As the chance of discovering a substantial quantity of uranium ore by drilling from the surface seems good, the examiner has recommended that an exploration loan be granted the applicant. I concur with this recommendation.

The original brochure is enclosed. The amended application has been sent to the Geological Survey at Grand Junction, Colo.

Walter R. Storms

Walter R. Storms

CC W. H. King (10)
R. P. Fischer
DMEA-3089
DF

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

August 24, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3089, Manol claims, McKinley County, New Mexico

Enclosed are 10 copies of the geologic report by J. D. Strobell, Jr. of the U. S. Geological Survey covering the above docket.

Because of circumstances, which are briefly explained in this report, final recommendations will have to await receipt of the applicant's revised proposal.

E. N. Harshman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (10)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

August 21, 1953

Memorandum

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

From: R. P. Fischer
Colorado Plateau District Office

Subject: DMEA 3089, Manol claims, McKinley County, New Mexico

Transmitted herewith are 10 copies of a geologic report on the Manol claims, McKinley County, New Mexico. Mr. Manol has applied for assistance to explore for uranium ore on these claims. The work is estimated to cost $79,819.40.

The attached report was prepared by J. D. Strobell, Jr. and is based on a field examination made jointly on August 11 with Lloyd Farnham, Bureau of Mines. The field examiners also conferred with the applicant and with P. L. Melancon, AEC.

The area seems to offer a good chance of finding uranium deposits by exploration, and it is recommended that the general plan of exploration suggested in this report receive favorable consideration by DMEA. Because of circumstances, which are briefly explained in this report, the applicant will submit a revised proposal, which should be reviewed before final approval and detailed specifications for a contract are prepared.

I concur with the conclusions and recommendations of the report.

R. P. Fischer

R. P. Fischer
Acting District Supervisor

Enclosures 10

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-3089, F. O. Manol's Uranium Property

McKinley County, New Mexico

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

September 1953

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By L. L. Farnham[1]

Late in July 1953, F. O. Manol applied to the Defense Minerals Exploration Administration, under the Production Act of 1950, as amended, for an exploration loan amounting to $78,819.40. The application was docketed as DMEA-3089. The property was visited by the examiners[2] on August 11, 1953. Early in September 1953, the applicant submitted a revised application in which he requested a loan of $73,559.54 for the purpose of exploring an 80-acre tract for possible uranium deposits by means of 72,360 feet of rotary air drilling. The property is about 16 miles north of the town of Grants, N. Mex.

Uranium mineralization in the Grants district, first detected in 1950, occurs in the Todilto limestone and the Morrison sandstone, both of Jurassic age. The subject property, so far as known, is underlain by the Todilto limestone. Erosion has removed the overlying Morrison formation. In the district Todilto limestone ranges from 8 to 20 feet in thickness and dips about 4° in a northeasterly direction. The uranium ore bodies found in the limestone are irregular tabular masses that vary greatly in size, shape, and grade. On adjoining land, in close proximity to the subject property, 26 ore bodies have been found distributed erratically within an area of about 600 acres. Some of these deposits contain but a few tens of tons of ore and others contain upwards of 10,000 tons. To date, the applicant has mined

---

1/ Mining Engineer, U. S. Bureau of Mines

2/ Farnham, L. L., U. S. Bureau of Mines; J. D. Strobell, U. S. Geological Survey.

about 7,500 tons of ore, averaging somewhat more than 0.20 percent U_3O_8, from 3 separate ore bodies found on 60 acres immediately south of the area proposed for exploration. The subject property has not been explored and the ore bearing limestone is completely covered with from 20 to 140 feet of overburden.

In the revised application the applicant proposed to explore an 80-acre tract by 72,360 feet of rotary air drilling in 900 holes spaced from 25 to 200 feet apart. This work was estimated to cost $73,559.54. Over one half of the 900 holes proposed by the applicant was spaced 25 feet apart which would appear more of the nature of development than of exploration. It was the opinion of the examiners that this large amount of proposed drilling was excessive for the purposes of an exploratory project. Consequently an alternative program was recommended which involved 27,000 feet of rotary air drilling in 362 holes spaced from 25 to 200 feet apart. This work was estimated to cost $28,627.

The area proposed for exploration in the revised application appears to offer a favorable chance for the discovery of additional uranium ore. Therefore it is recommended that a loan amounting to not more than $28,627 be approved.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS MCKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

REGION IV

DMEA 3098 (Uranium)

F. O. Manol
Sec. 30, T. 13 N., R. 9 W., Grants District
McKinley County, New Mexico

Geologic Report

By

J. D. Strobell, Jr., Geologist
U. S. Geological Survey

August 1953

DMEA DOCKET 3089 (Uranium)

F. O. MANOL Sec. 30, T. 13 N., R. 9 W. GRANTS DISTRICT
MCKINLEY COUNTY, NEW MEXICO

INTRODUCTION AND SUMMARY

Application has been made (DMEA 3089) for government assistance in exploring for uranium on the F. O. Manol property in the Grants District, McKinley County, N. Mex. The proposed work is estimated to cost $79,819.40. The application has been reviewed in Washington, and the property was examined August 11, 1953, by Lloyd Farnham of the Bureau of Mines, Tucson, Ariz., and J. D. Strobell, Jr. of the Geological Survey, Grand Junction, Colo. The examiners also conferred with the applicant and with P. E. Melancon, District Geologist of the U. S. Atomic Energy Commission, Grants, N. Mex.

The applicant and his partners hold under lease in section 30, T. 13 N., R. 9W., the following plots:

S ½ of NE ¼ of Sec. 30
N ½ of NE ¼ " " "
E ½ of SW ¼ " " "
Lots 3 & 4 of SW ¼ of Sec. 30

This area is shown in figure 1. The description given in the application is correct as recorded in the original deed (1923) at Santa Fe, N. Mex., and mineral rights are included in the deed. [1]

---

[1] John X. Combo, AEC, oral communication

The area seems to offer a good chance of finding uranium deposits by exploration, and it is recommended that the general plan of exploration suggested in this report receive favorable consideration by DMEA. Because of circumstances, which are briefly explained in this report, the applicant will submit a revised proposal, which should be reviewed before final approval and detailed specifications for a contract are prepared.

GEOLOGY

In the Grants district, uranium deposits occur in the Todilto limestone and Morrison sandstone beds of Jurassic age and in the overlying Cretaceous rocks. The Manol property is underlain by the Todilto limestone, which the applicant proposes to test by drilling. The Todilto caps cliffs of the underlying Entrada sandstone and forms a broad bench where the overlying Summerville formation has been removed by erosion. The stripping off of the Summerville formation was accompanied or followed by erosion and locally complete removal of the Todilto limestone. The remaining limestone ranges up to 20 or 25 feet in thickness and is covered by a veneer of dune sand and alluvium, which may also locally conceal remnants of the Summerville formation. In the area of proposed exploration, the limestone is entirely covered by 25 to 150 feet of overburden, which thickens eastward across the property. The overburden consists predominantly of wind blown and fluiral sand only slightly indurated, but probably also includes increasing amounts of calcareous silty sandstone of the Summerville formation toward the east.

ORE DEPOSITS

Uraniferous minerals locally coat bedding planes and joint surfaces of the limestone, are disseminated in blebs and crystals in the matrix, and are associated with coarsely crystalline carbonates in veinlets. Such minerals are locally present in sufficient amounts to form ore bodies of irregular plan and thickness without sharply defined limits. Controls of their localization are not well understood. They occur at all positions between the top and bottom of the limestone, and may be present even where the limestone is partly removed by recent erosion. There is evidence of localization along the axial portion of minor folds, and the influence of dominant joint directions is in places apparent, both of which factors tend to produce narrow elongate ore bodies. The ore-bodies range in size from small tabular masses covering a few square feet to large bodies several hundred feet across. The thickness ranges from 1 foot or less up to as much as 14 feet. The largest known bodies contain a couple of hundred thousand tons of ore. The average grade of the ore shipped from the limestone in the district is a little more than .20 percent U_3O_8.

There are 25 or 26 known ore bodies in the immediate vicinity of the area of proposed exploration. Four of these are known from surface exposures; the applicant and the Santa Fe Railroad found the others by drilling. These known bodies are estimated to contain from 25 to 10,000 tons of ore apiece, and the total indicated reserves (before mining) were probably on the order of 80,000 tons.

The applicant has already found about 10,000 tons of ore on his property and has shipped about 6,500 tons averaging between .20 and .25 percent U_3O_8. The property is considered to be favorably situated and to afford a good chance for finding more ore.

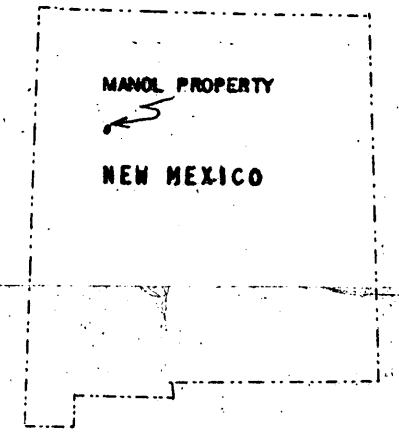
The size and distribution of the known deposits can be considered representative of the deposits expected in the area to be explored. Based on this information, which is largely company-confidential, the average ore-body contains about 3,000 tons, and about eight bodies would be expected in the area to be drilled. It thus appears that the proposed exploration has a favorable chance of finding 20,000 to 30,000 tons of ore.

The known deposits also afford estimates of the size of the target deposits and guides to the spacing of drill holes. They range in size from as little as 25 feet in diameter up to 100 by 800 feet. Most of them exhibit a marked elongation, the length being several times the width. They are, however, surrounded by a zone in which radioactivity is considerably higher than the radiation background of the containing limestone. Such zones of increased radioactivity may extend as much as 100 feet beyond the limits of ore. In order to find the expected ore, primary drilling on 100-foot centers would be necessary. If, however, advantage be taken of the radioactive halo, primary drilling could be done on 200-foot centers. Radiometric logging of the drill-holes would give this advantage. The size of the anticipated discoveries seems to require the application of all available methods which offer some chance of reducing the total costs of the exploration.

PROPOSED EXPLORATION

The applicant proposes to explore only parts of his property with federal assistance at the present time, namely the N½ of the SW¼ and the N½ of the SE¼ of Section 30. (See figure 1.) He is willing to subject only ore found in this area to royalty payments under the necessary lien. It is likely that ore known at present in other parts of the property will be mined out completely before any ore found in this area with government assistance is produced. Control of sales of ore that may result from the proposed drilling can very likely be worked out to the government's satisfaction.

The applicant proposed to rely upon radiometric logging of the wide-spaced drill holes by the Atomic Energy Commission to determine the relative favorability of the ground and to base the location of closely spaced holes upon the Commission's determinations. This practice is strongly advocated by the examiners, but they and the operator were informed by Mr. Melancon of the Commission that his capacity to perform this service is limited. In addition to his committments to Commission projects, he can probably handle only one or possibly two other projects in the district with the equipment and personnel at his disposal. As three other DMEA applicantions for exploration in the district have already been recommended (at least one of which, DMEA 3044, has been approved) the free logging service of the Commission can not definitely be assumed to be available for use in exploring the Manol property.



T. 13 N., R. 9 W. N.M.P.M.

SECTION 30

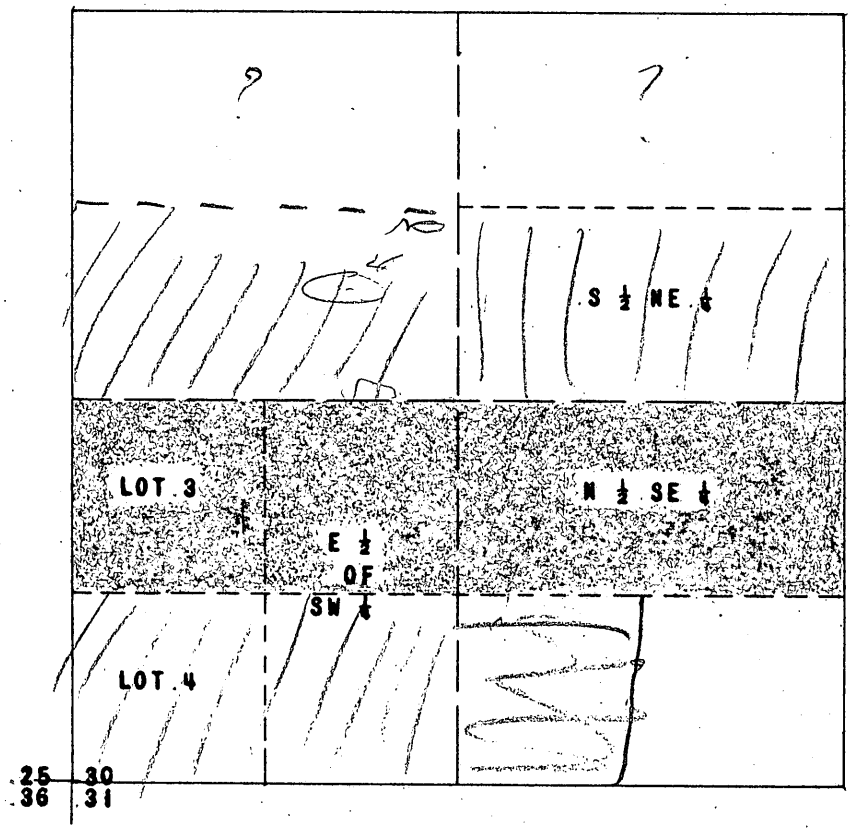


Figure 1. SKETCH MAP OF MANOL PROPERTY; SHADED AREA TO BE EXPLORED.
D.M.E.A. DOCKET 3089

In view of this changed situation, Mr. Manol wishes to revise his proposal and application to include radiometric logging obtained elsewhere, and also to modify to some extent the spacing of holes and the area to be explored. It is his intent to submit a revised application in the immediate future, which is expected to agree closely with the recommendations contained in this report. Until his revised proposal is reviewed, our final recommendations cannot be given.

RECOMMENDED EXPLORATION

Owing to the overburden which covers the ore-bearing limestone in the area to be explored, the sites for the first drill holes must be arbitrarily selected. It is recommended that the initial or primary holes be drilled on 200-foot grid-coordinate intersections and logged by in-hole radiation-detection equipment, which should detect ore deposits or the radioactive halo around deposits. Holes showing abnormally high radiation should be off-set by additional closer-spaced drilling. If no hole-logging device is available, samples for radiometric scanning would have to be collected from each hole, and the costs would be considerably increased.

Two other considerations seem to recommend the wider-spaced initial drilling. (1) There are indications from drilling already done by the applicant that in parts of the area to be explored the Todilto limestone may possibly have been removed by recent erosion. Wide-spaced drilling would indicate broad areas where the limestone is still present and warn of its absence in certain other areas.

(2) In the eastern half of the area, ore would have to be mined by underground methods, and larger reserves would be required to justify mining. In the central part of the area, thick deposits of sand cover the limestone, but underground mining is not possible, so increased stripping costs in this part of the area would also require larger reserves to justify mining.

In as much as the drilling is done in order to obtain a sample of the covered rocks, it seems necessary to require off-set holes to be sampled, because radiometric logging should not be relied on soley to determine grade. Samples should be collected and preserved in 2-foot runs throughout the entire thickness of the limestone in each offset hole. Radiometric logging of the hole and/or radiometric scanning of the samples can be used to select the samples to be assayed chemically for U_3O_8. All potentially ore-grade samples should be assayed.

Because the ore bodies are narrow elongated masses mostly less than 100 feet wide, this primary drilling on 200-foot centers is not very likely to intersect ore-grade material. It should, however, intersect the halo of high radioactivity surrounding an ore body. Subsequent drilling will be required to further outline and test any such favorably radioactive ground and to locate ore-grade material within it. Judging by the distribution of the known deposits on adjacent ground, about 10 percent of the area will merit testing by closely spaced drilling, and 2 or 3 percent may be underlain by ore-grade material.

All holes should be drilled completely through the limestone and well into the underlying sandstone to prevent caving from covering up the lower part of the limestone in the hole. Two feet below the base of the limestone may be sufficient in holes less than 50 feet deep, but 5 feet should be allowed in the deeper holes.

CONCLUSIONS

Exploration for uranium on part of the Manol property appears to have a good chance of finding 20,000 to 30,000 tons of ore averaging between .20 and .25 percent U_3O_8. In about 2/3 of the area of expected exploration high mining costs can be anticipated as underground mining or stripping of thick overburden would be required. If exploration is undertaken, primary drill-hole spacing of 200 feet and radiometric logging of the holes is recommended. It would be advantageous to log the off-set holes also, but they must in any event be sampled through the entire thickness of the limestone. Samples of potential ore grade as determined by the logging or radiometric scanning should be assayed chemically.

Final recommendations will have to await receipt of the applicants revised proposal.

DMEA-3089, F. O. MANOL'S URANIUM PROPERTY
McKINLEY COUNTY, N. MEX.

Engineering Report

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

September 1953

DMEA-3089, F. O. MANOL'S URANIUM PROPERTY
McKINLEY COUNTY, NEW MEXICO

CONTENTS

Engineering report	Page
Introduction	1
Acknowledgments	1
Location and Physical features	1
History and production	2
Ownership and extent	2
Description of the deposits	3
Proposed exploration	4
Sampling	8
Estimated cost of project	9
Proposed financing	10
Conclusions and recommendations	11

ILLUSTRATIONS

Figure		Following page
1	Location map	1
2	Adjacent ore bodies	2
3	Topographic and structural contour map	2

INTRODUCTION

Late in July 1953, F. O. Manol applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for an exploration loan amounting to $79,819.40. The application was docketed as DMEA-3089. The funds requested were for the purpose of exploring portions of a 160-acre tract for uranium by means of some 83,000 feet of rotary air drilling. The property was visited by the examiners[1/] on August 11, 1953. Early in September 1953, the applicant revised the original application in which he requested $73,559.54 for the purpose of exploring an 80-acre tract with 900 holes, totaling 72,360 feet of drilling.

ACKNOWLEDGMENTS

Special thanks are due Paul E. Melancon, supervising geologist of the Atomic Energy Commission of Grants, N. Mex., for his cooperation in supplying the examiners with much needed information.

LOCATION AND PHYSICAL FEATURES

The F. O. Manol property is situated about 16 miles northeast of Grants, N. Mex. in the SW¼ of Sec. 30, T. 13 N., R. 9 W., McKinley County, N. Mex. It can be reached from Grants by traveling west on U. S. Highway 66 for 3.2 miles, thence northward on State Highway 53 for 10.8 miles to a branch road running westward. The area proposed for exploration then can be reached by traveling for 1.3 miles westward on this branch road (figure 1).

1/ Farnham, L. L., U. S. Bureau of Mines;
Strobell, J. D., U. S. Geological Survey.

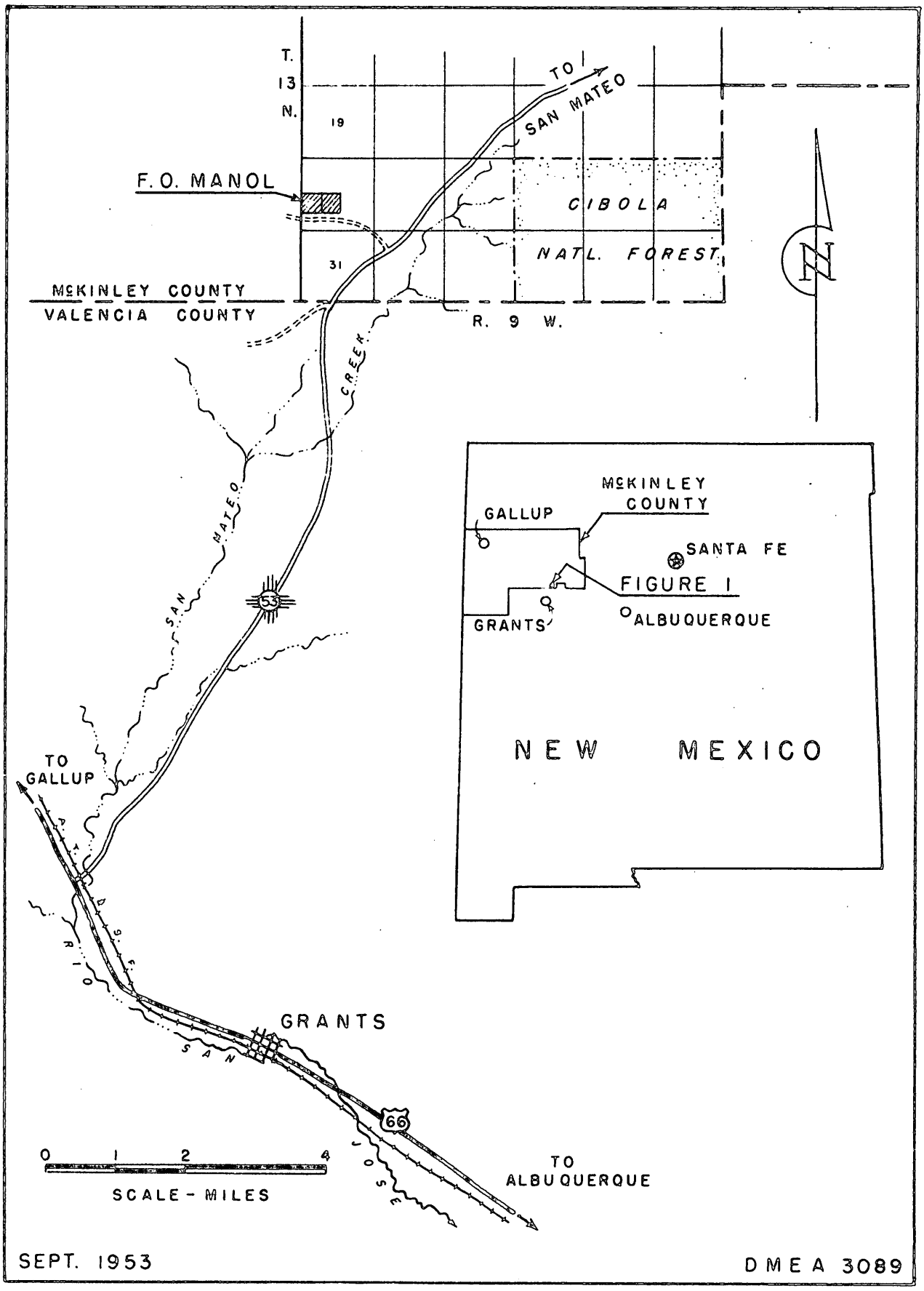


FIGURE 1. - LOCATION MAP - F. O. MANOL LEASE
McKINLEY COUNTY, NEW MEXICO

The project area, covering about 80 acres, lies within a gentle sloping alluvium-covered valley. Altitude above sea level ranges from a maximum of 6,890 feet in the southwest corner of the tract to a low of 6,840 feet on its eastern side (figure 3).

HISTORY AND PRODUCTION

The first mining activity in the area was started in 1950 following the initial discovery of uranium ores in the Grants district. The area covered in this application has not been explored and has had no production. The applicant has mined about 7,500 tons of ore, averaging over 0.20 percent U_3O_8, from 3 ore bodies found on a 60-acre tract adjoining the area of the proposed exploration (figure 2).

OWNERSHIP AND EXTENT

The applicant and his partners hold under lease the following acreage:

S½ of NE¼	of Sec.	30, T. 13 N.,	R. 9 W.
N½ of NE¼	" "	30, T. 13 N.,	R. 9 W.
E½ of SW¼	" "	"	"
Lots 3 and 4[2]	"	"	"

In the revised application, Governmental assistance was requested only for Lot 3 and N½ of the E½ of the SW¼ of Sec. 30.

A copy of the applicant's lease was not submitted with the application and nothing is known concerning the ownership of the land nor the terms of the lease agreement.

2/ These lots comprise the W½ of the SW¼ of Sec. 30.

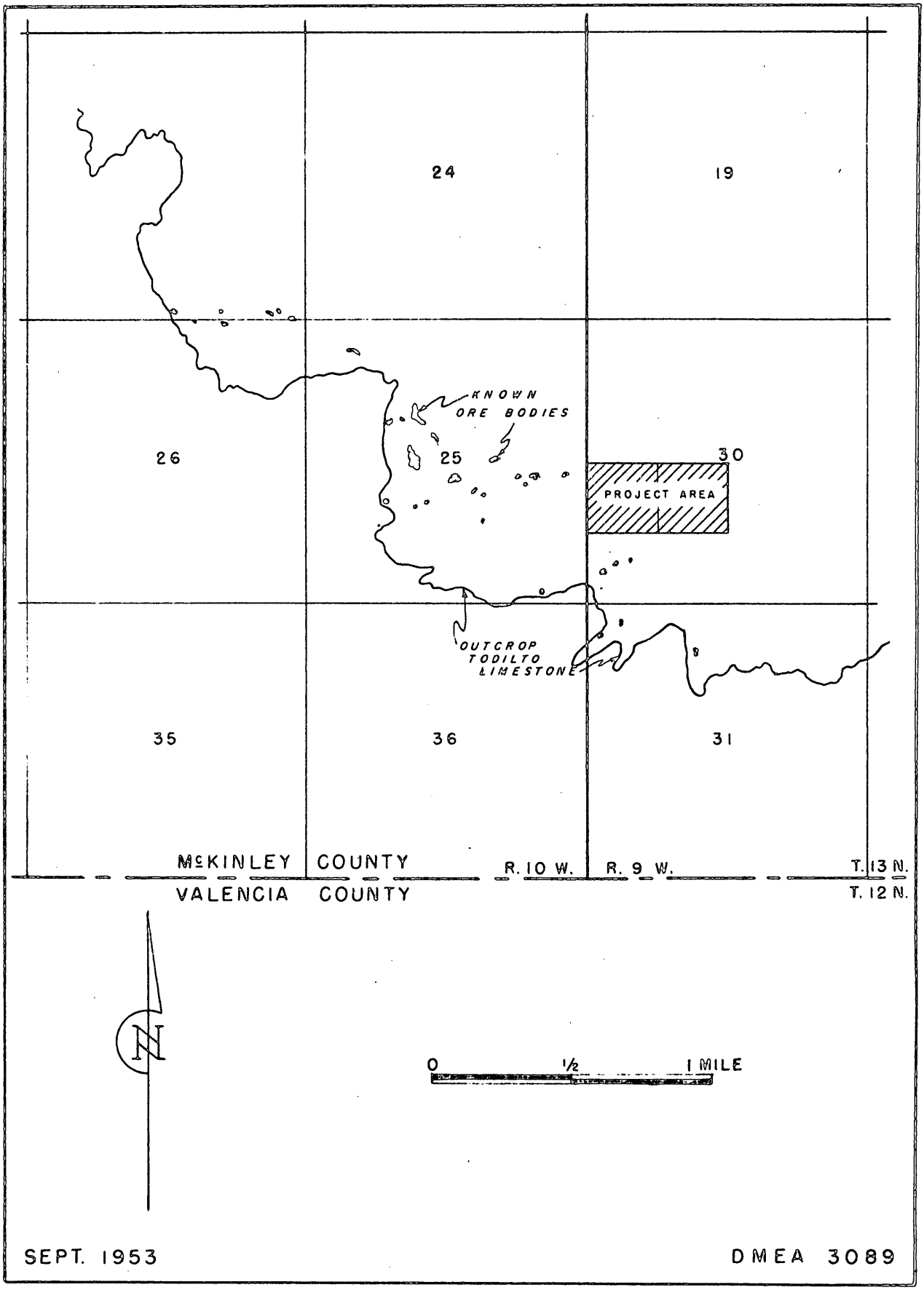
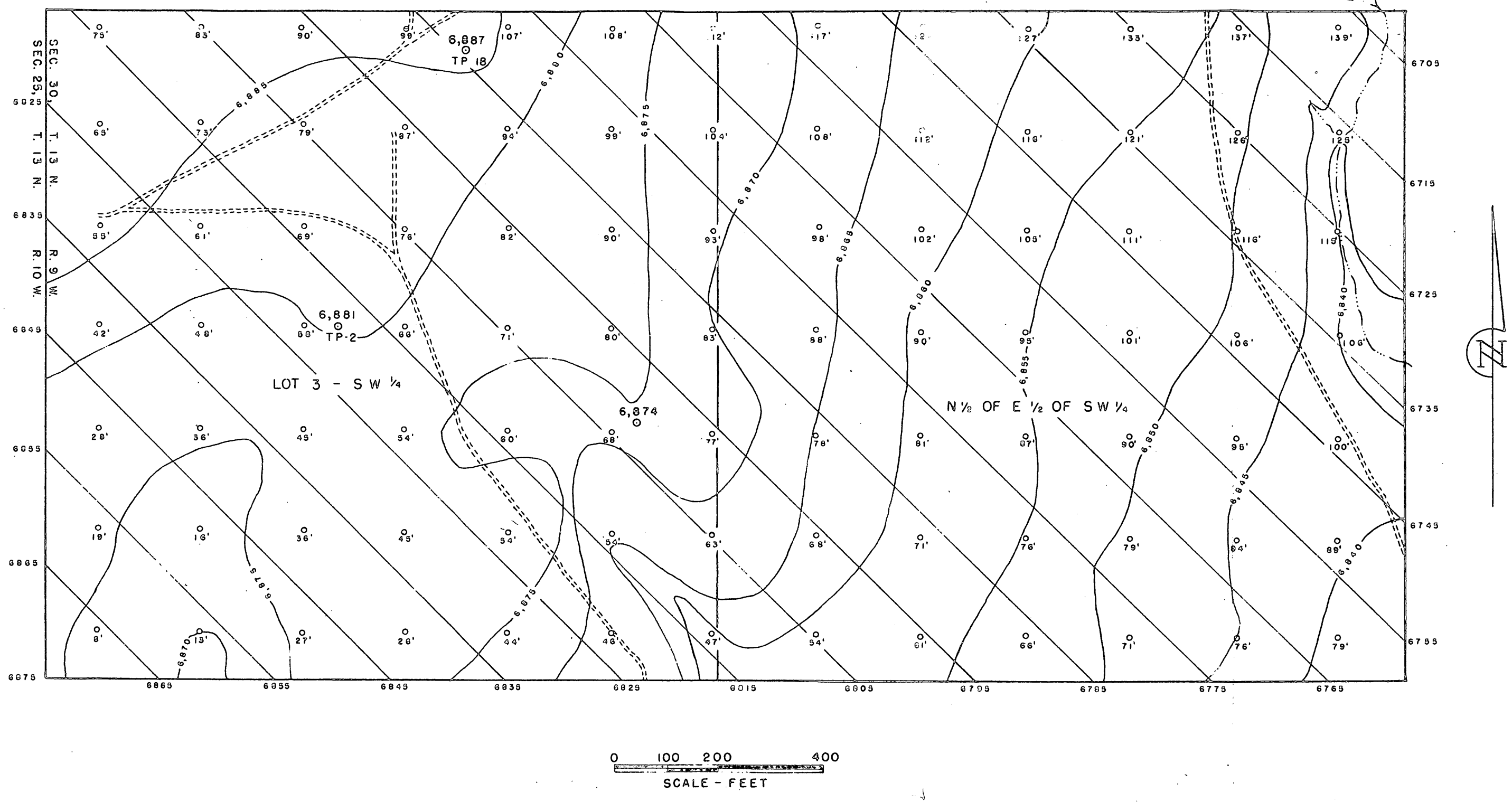


FIGURE 2. - LOCATION OF KNOWN ORE BODIES IN VICINITY OF PROPOSED EXPLORATION (F. O. MANOL)
McKINLEY COUNTY, NEW MEXICO



DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT. 1953

DMEA 3089

FIGURE 3. - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE TO BASE OF LIMESTONE)

F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

DESCRIPTION OF THE DEPOSITS

Uranium mineralization in the Grants district occurs in the Todilto limestone and in certain sandstone beds of the Morrison formation. The subject property is underlain by the Todilto limestone which in the area of the proposed drilling is completely covered by 20 to 140 feet of overburden. The productive limestone ranges from 8 to 20 feet in thickness and dips about 4° to the northeast. The ore bodies are irregular tabular masses distributed very erratically within the limestone. They range in thickness from a foot to as much as 14 feet and vary greatly in size, shape and grade.

About 26 separate ore bodies have been found in close proximity to the area proposed for exploration (figure 2). The total ore reserves indicated by these discoveries have been estimated to be of the order of 80,000 tons, or an average of about 3,000 tons per ore body. It was necessary to explore approximately 600 acres in order to outline the 26 ore bodies.

On this basis the 80 acres under consideration could be expected to contain from 3 to 4 ore bodies of 3,000 tons each, or a total of from 10,000 to 12,000 tons of ore. However, because of the great variance in the size of the deposits and their unpredictable distribution, the 80 acres in question could contain much more than 12,000 tons, and likewise could contain very much less.

PROPOSED EXPLORATION

In the revised application it was proposed to confine the work to lot 3 and the adjoining N½ of the E½ of Sec. 30 (figure 3). The proposals, with cost estimates as set forth in the application, are as follows:

SUPPLEMENT TO INSTRUCTION NUMBER 6
of DMEA Form MF-103

Estimate:

(a) Independent Contracts	Quantity	Unit Cost	Total
Drilling Test Holes 0 to 100 ft.	65,448 ft.	$.50	$32,724.00
Drilling Test Holes 101 to 200 ft.	6,912 ft.	1.00	6,912.00
Blowing & Catching Drill Hole Cuttings for Assay Purposes	13,950 ft.	.50	6,975.00
Radiometric Log of Test Holes	45,000 ft.	.15	6,750.00
Radiometric Scan of Test Holes	27,360 ft.	.07	1,915.20
Radiometric Assay Cuttings, this includes collecting, mixing, pulverizing, and assaying.	3,987 ea.	1.00	3,987.00
Contingencies	Lump Sum		2,000.00
Supervision, Geologic Consultation, Mine Evaluation, Surveying and Laying-out Grids, Accounting, and equipment and supplies, etc. incidental to these services.	72,360 ft.	.15	10,854.00
			72,117.20
New Mexico School Tax 2%			1,442.34
Total Maximum Cost of Project			$73,559.54

The applicant proposes to have the above drilling performed by the Four Corners Exploration Co. This is a new organization in which the applicant, F. O. Manol, owns a half interest. The other partner

is a geologist who formerly was employed in the Grant's office of the Atomic Energy Commission. The company has a Failing 1500 Rotary rig and is expecting the delivery of a mobile radiometric hole logging device in the near future.

A copy of the bid for the proposed drilling, submitted by the Four Corners Exploration Co., is given below:

"Utah Colorado
Arizona New Mexico FOUR CORNERS EXPLORATION COMPANY
P. O. Box 101

Irving Rapaport
F. O. Manol

August 31, 1953
Grants, New Mexico

"F. O. Manol and Associates
Box 246
Grants, New Mexico

Gentlemen:

"Below are our prices to your organization for drilling services, supervisory and geologic services, radiometric logging services, and radiometric assay services as per your request.

"Drilling:

1st 100 feet or any part thereof	$.50 per ft.
2nd 100 feet or any part thereof	1.00 per ft.

"Blowing hole clean and catching cuttings every two feet. $.50 per foot extra over regular prices.

"No charge for standby time on your work.

"Radiometric Logging:

Logging hole furnishing original copy of log to you. $.15 per foot.

"Scanning holes with logging unit but no transcript furnished. $.07 per foot.

"With this service you can log just the suspected ore zones and scan for unexpected mineralization in other zones of the drill holes. Substantial savings can be effected in this manner.

"Radiometric Assaying:
Collecting, mixing, pulverizing; sacking, assaying drill hole cuttings. $1.00 each.

"Supervision:
Supervision, geologic consultation, mine evaluation, surveying and laying-out grids, accounting, and equipment and supplies, etc. incidental to these services. $.15 per foot.

"We believe we are the only organization in the uranium exploration business providing a complete package deal exploration service combining all necessary services into one easy to administer contract.

"Very truly yours,

/s/ Irving Rapaport
Irving Rapaport"

The costs per foot of drilling in the above bid are the same as those charged by the W. T. Myers Drilling Co. for similar contract work.

The applicant's project proposals involved the drilling of 900 holes, having an average depth of 80.4, totaling 72,360 feet, and estimated to cost $73,559.54. It appears that the large amount of drilling would not be necessary for the purpose of determining the presence or absence of worthwhile ore bodies within this 80-acre tract.

Based on the experience of other exploratory operations in the district, the examiner recommends the following procedure as an alternative to that proposed by the applicant.

The entire 80 acres should be drilled with holes spaced 200 feet apart. This phase of the program would require 91 holes (figure 3). In all probability this primary stage would eliminate a portion of the area from further consideration. Experience in the district has shown that about 1 out of 6 holes spaced 100 feet apart might indicate sufficient abnormally high radio-activity so as to merit off-set drilling. Based on this ratio, about 30 of these 182 holes would justify off-setting by 4 holes each, spaced 50 feet apart. Thus, this third phase would require an additional 120 holes, and thereby increase the total to 302 holes at this stage of the work. It would seem that an additional 60 holes spaced no closer than 25 feet would be sufficient to outline, for discovery purposes, any ore bodies indicated by the former holes. On this basis, a total of 362 holes would be required. The average depth of these holes as computed by the examiner was 74.6 feet (figure 3). Hence the total for the project would amount to 27,005 feet of drilling. This is only about one-third of the total footage proposed by the applicant. Nevertheless, 362 holes would seem adequate to explore the area to such an

extent as to indicate whether or not significant ore bodies were present. About one half of the holes proposed by the applicant could be considered to be more of the nature of development than of exploration.

SAMPLING

No samples need be collected from the initial 91 holes (spaced 200 feet apart) if they can be logged radiometrically. The balance of the holes (271) should be logged radiometrically and sampled as well. When the holes enter the top of the limestone, the drill cuttings should be blown from the hole at each 2-foot interval and caught in a suitable collector. If the limestone averages 18 feet thick, there would be 9 samples from each hole. These can be scanned with a standardized Geiger Counter and those that appear of ore grade should be retained for further testing. Since most of the ore is seldom more than 6 feet thick, it is probable that not more than 3 samples from each hole would warrant assaying. On this basis there would not be more than 813 samples that would merit assaying.

The applicant proposed assaying the samples radiometrically, rather than chemically. The examiners discussed this matter with the manager of the Anaconda Copper Mining Co. and the chief mining engineer of the Atchison, Topeka & Santa Fe Railroad Co. Both of those gentlemen were of the opinion that radiometric assaying results on the limestone ores would check very closely with the U_3O_8 content

as determined chemically. In view of this information, it appears that for the purposes of exploration, the radiometric assaying of the drill hole samples would be satisfactory and should be adopted in the case of limestone ores. Radiometric assaying is not satisfactory for the sandstone ores of the district.

ESTIMATED COST OF PROJECT

The depth of the proposed holes averaged 74.6 feet which included 5 feet of drilling below the bottom of the limestone. This extra 5 feet of hole would allow space for any caving that might occur before the hole could be logged radiometrically. The data used by the examiner for computing the depth of the holes was based on information furnished by the Atomic Energy Commission.

A summary of the amount of drilling follows:

Stage 1 and 2 -	182 holes @ 74.6 ft.	13,577 feet
Stage 3	120 holes @ 74.6 ft.	8,952 "
Stage 4	60 holes @ 74.6 ft.	4,476
Total	362 Holes	27,005 feet

Figure 3 indicates that about two thirds of the holes would be less than 100 feet deep and the balance would exceed 100 feet. Thus the drilling cost under the bid of the Four Corners Exploration Co. would be as follows:

exploration would have to produce some 22,000 tons of ore in order to repay the Government loan. Tonnage of this order is not too far out of line with the potential of the area as judged by the results of former exploration in the vicinity.

CONCLUSIONS AND RECOMMENDATIONS

Important uranium deposits have been found immediately to the south and west of the area which the applicant has proposed for exploration. There is no evident reason why similar deposits are not likely to be found on the subject property. One disadvantageous feature of the area proposed for exploration is the amount of cover overlying the productive limestone bed. Over a large portion of this tract, the overburden may be of such thickness as to preclude open pit mining. In such cases much more costly underground methods would be necessary which could result in making some of the smaller or lower grade bodies noneconomic.

The applicant, who will no doubt supervise the operation, has had 2 years of experience in the exploration and mining of uranium ores in the Grants district. If the contract drilling is performed by the Four Corners Exploration Co., Irving Rapaport will supervise the drilling and attend to the technical features of the project. Both Manol and Rapaport are considered to be competent in their respective capacities. The fact that the applicant will be financially interested in the drilling contract may have certain

18,000 feet @ $0.50	$9,000
9,000 " @ 1.00	9,000
Catching samples - 4,878 ft. @ $0.50	2,439
Radiometric logs, 27,000 ft. @ $0.10 3/	2,700
Radiometric assaying, 800 @ $1.00	800
Total cost for 27,000 feet	$23,939
Cost per foot	$0.89

Drilling with this rotary type of equipment, the contractor expects to average between 250 and 300 feet a shift. Thus working 25 shifts a month the work could be completed in about 4.5 months. The other costs of the project based on 4.5 months are given below:

1 Supervisor, 4.5 mos. @ $500	$2,250
1 Sampler, 4.5 mos. @ $300	1,350
Compensation insurance, taxes, etc., 13%	468
Allowance for use of pickup truck @ $60	270
Bookkeeping and office supplies	250
Sample sacks and incidentals	100
	$4,688

Summary of Total Estimated Costs

Contrast drilling	$23,939
Supervision and sampling	4,068
Miscellaneous	620
Total for 27,000 feet	$28,627
Total per foot	$1.06

PROPOSED FINANCING

The project as estimated by the writer would cost $28,627 of which the applicant would furnish one tenth, or $2,862.70, and the Government would provide $25,764.30.

The value of the ore produced by the applicant from the tract immediately south of subject area has averaged about $23 a ton. With ore of this value, at 5 percent royalty, the area proposed for

3/ Based on $0.15 a foot for logging and $0.07 a foot for scanning only.

disadvantages as well as advantages.

As there appears to be a reasonable chance of finding ore on the subject property, it is recommended that a loan amounting to $28,627 be approved. A short form contract is suggested specifying a maximum of 27,000 feet of drilling at a price of $1.06 a foot.

224 New Customhouse
Denver 2, Colorado

February 24, 1954

F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA 3089

Dear Mr. Manol:

This will acknowledge receipt of your letter dated February 18, 1954.

We are happy to know that your drilling program has been so successful, and in accordance with your request, we will close this docket as of this date.

Your abstract of title is being returned to you under separate cover by registered mail.

Very truly yours,

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

HMC:es

cc: Docket
Chron.
Mittendorf with enc.
Fischer w/enc.
Koschmann w/enc.
Storms w/enc.
~~Chro~~

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

February 18, 1954

Mining Division
Date Rec'd
FEB 23 1954
BUREAU OF MINES
Denver, Colorado

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. W. H. King
Re: Docket DMEA 3089

Gentlemen:

The subject docket has been taken up with my associates for discussion since the receipt of your last letter.

In view of highly successful results of our own drilling program in the last three months during which we blocked out about a half million dollars worth of ore, including two ore bodies which project into the land covered by the subject docket, we no longer see any need for DMEA assistance at this time. We are now prepared to conduct a more intensive program with our own funds.

In view of the tremendous backlog of work your office must be burdened with we know this decision will be welcomed by you.

Kindly return our abstract at an early date.

Very truly yours,

F O Manol

February 18, 1954

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. W. H. King
Re: Docket DMEA 3089

Gentlemen:

The subject docket has been taken up with my associates for discussion since the receipt of your last letter.

In view of highly successful results of our own drilling program in the last three months during which we blocked out about a half million dollars worth of ore, including two ore bodies which project into the land covered by the subject docket, we no longer see any need for DMEA assistance at this time. We are now prepared to conduct a more intensive program with our own funds.

In view of the tremendous backlog of work your office must be burdened with we know this decision will be welcomed by you.

Kindly return our abstract at an early date.

Very truly yours,

J O Maul

224 New Customhouse
Denver 2, Colorado

February 4, 1954.

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3089

Dear Mr. Manol:

Reference is made to your letter dated January 31, 1954.

In accordance with your request, we are enclosing twelve copies of Owner's Consent to Lien forms.

Very truly yours,

W H King

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

Enclosures

HMC:cwm

cc: Subject
Chron.

Mining Division
Date Recd
FEB 3 - 1954
BUREAU OF MINES
Denver, Colorado

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

January 31, 1954

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Gentlemen:

Please send me 12 "Owner's Consent to Lien" forms as soon as possible. Form MF-203.

Very truly yours,

F O Manol

224 New Customhouse
Denver 2, Colorado

January 12, 1954.

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3069

Dear Mr. Manol:

This will acknowledge receipt of your letter dated December 21, 1953 in which you enclosed a letter from Tom Harley, Jr.

In order to continue to process an exploration project contract the following is required:

1. The Operating Agreement dated July 1, 1952 does not give you the authority to apply for DMEA aid. If you obtain letters from all of the interest holders similar to the one you received from Tom Harley, Jr., your application would be in order, but you could not administer the contract because it does not grant you authority to do and perform all and every act and thing whatsoever requisite and necessary to be done in and about the premises in connection with said contract including the right to make and sign any amendments to the said contract, make monthly progress reports as provided by said contract, to make the final report as required by said contract, to pay DMEA any royalties that may become due under said contract, the authority to receive any money that may be payable to the interest holders by reason of said contract, and giving and granting such other authority to carry out the full intent and purpose of said contract, to all intents and purposes, as the interest holders might or could do if personally present.

All interest holders should agree on the appointment of an operator to act as agent for them and by Power of Attorney grant him authority to do the various acts noted above. Signed Power of Attorney from each interest holder should be forwarded to this office.

2. We will require either signed copies or photostat copies of all assignments (including intermediate assignments) showing that the interest holders in the lease are those persons who execute Powers of Attorney in accordance with the above paragraph.

3. The present lease expires March 24, 1954. A new lease or an amendment to the present lease which will run, unconditionally, for a sufficient term to allow completion of the exploration work specified in the contract should be obtained. Please forward this office a signed copy of the new lease or amendment.

4. The Operating Agreement dated July 1, 1952 provides that the authority of the operator shall be terminable at any time and without notice. An amendment to this Operating Agreement should be made to provide for a definite operator during the period of the DMEA exploration and until the final report is accepted by the DMEA.

5. It is noted that G. P. Roundy and Clarinda Roundy mortgaged the subject property to Albuquerque Production Credit Association on July 8, 1953. Since the present lease will have to be amended, or a new lease obtained, it will be necessary for an authorized official of the Albuquerque Production Credit Corporation to sign and return to this office six copies of the enclosed Form MF-201, Subordination Agreement.

6. We have Owner's Consent to Lien signed by Golden P. Roundy, Clarinda W. Roundy, and W. A. Greer. Please have Bertha Greer, the other owner of record, sign and return to this office the six enclosed copies of Form MF-203, Owner's Consent to Lien.

If all of the above requested data is received by this office by March 1, 1954, we will continue to process the exploration project contract. If we do not receive this data by March 1, 1954, we will presume that you are no longer interested in the exploration project and will close the docket.

Very truly yours,

WH King

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

Enclosures

cc: Administrator, DMEA
WRStorms
RPFischer
AHKoschmann (2)
Docket
Chron.

224 New Customhouse
Denver 2, Colorado

January 12, 1954.

Mr. F. O. Manol
P. O. Box 245
Grants, New Mexico

Re: Docket No. DMEA-300

Dear Mr. Manol:

This will acknowledge receipt of your letter dated December 21, 1953 in which you enclosed a letter from Tom Harley, Jr.

In order to continue to process an exploration project contract the following is required:

1. The Operating Agreement dated July 1, 1952 does not give you the authority to apply for DMEA aid. If you obtain letters from all of the interest holders similar to the one you received from Tom Harley, Jr., your application would be in order, but you could not administer the contract because it does not grant you authority to do and perform all and every act and thing whatsoever requisite and necessary to be done in and about the premises in connection with said contract including the right to make and sign any amendments to the said contract, make monthly progress reports as provided by said contract, to make the final report as required by said contract, to pay DMEA any royalties that may become due under said contract, the authority to receive any money that may be payable to the interest holders by reason of said contract, and giving and granting such other authority to carry out the full intent and purpose of said contract, to all intents and purposes, as the interest holders might or could do if personally present.

All interest holders should agree on the appointment of an operator to act as agent for them and by Power of Attorney grant him authority to do the various acts noted above. Signed Power of Attorney from each interest holder should be forwarded to this office.

2. We will require either signed copies or photostat copies of all assignments (including intermediate assignments) showing that the interest holders in the lease are those persons who execute Powers of Attorney in accordance with the above paragraph.

3. The present lease expires March 24, 1954. A new lease or an amendment to the present lease which will run, unconditionally, for a sufficient term to allow completion of the exploration work specified in the contract should be obtained. Please forward this office a signed copy of the new lease or amendment.

4. The Operating Agreement dated July 1, 1952 provides that the authority of the operator shall be terminable at any time and without notice. An amendment to this Operating Agreement should be made to provide for a definite operator during the period of the DMEA exploration and until the final report is accepted by the DMEA.

5. It is noted that G. P. Roundy and Clarinda Roundy mortgaged the subject property to Albuquerque Production Credit Association on July 8, 1953. Since the present lease will have to be amended, or a new lease obtained, it will be necessary for an authorized official of the Albuquerque Production Credit Corporation to sign and return to this office six copies of the enclosed Form MF-201, Subordination Agreement.

6. We have Owner's Consent to Lien signed by Golden P. Roundy, Clarinda W. Roundy, and W. A. Greer. Please have Bertha Greer, the other owner of record, sign and return to this office the six enclosed copies of Form MF-203, Owner's Consent to Lien.

If all of the above requested data is received by this office by March 1, 1954, we will continue to process the exploration project contract. If we do not receive this data by March 1, 1954, we will presume that you are no longer interested in the exploration project and will close the docket.

Very truly yours,

W. H. KING

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

Enclosures

cc: Administrator, DMEA
WRStorms
RFFischer
AHKoschmann (2)
Docket
Chron.
HMConnors

MF-201
(Revised February 1953)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the holder of a mortgage, ~~claim, lien, or encumbrance~~ identified and described as follows*: SW 1/4 Section 30, T. 13 N., R. 9 W., dated July 8, 1953 and recorded in Book 19 of Mortgages, Page 191, Records of Mc Kinley County, New Mexico upon that certain parcel of ground described in a proposed Exploration Project Contract between F. O. Manol, Operator and Agent for a group of individuals leasing the above described land. and the United States of America;

NOW, THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, does by these presents subordinate all of his right, title, and interest in said mortgage, claim, lien, or encumbrance to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and any amendments thereof, and agrees that the lien and claim of the United States of America under the provisions of said Exploration Project Contract, and any amendments thereof, shall be prior to the undersigned's rights under the provisions of said mortgage, claim, lien, or encumbrance; and

The undersigned agrees to commit no act nor assert any right, title, or interest under said mortgage, claim, lien, or encumbrance that might contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract, and any amendments thereof.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this _____ day of _____, 195__

_____ [SEAL]

_____ [SEAL]

I, _____, certify that I am the _____

(Secretary, etc.) of the corporation named herein; that _____

who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
[CORPORATE SEAL]

*Include date of the instrument, and if recorded, book, page, and county of record.

16—68181-1 U. S. GOVERNMENT PRINTING OFFICE

MF-203
(Revised July ~~1,~~ 1953)

[illegible] ← don't type

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW1/4, N1/2 of E1/2 of SW1/4; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land,

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

_____

_____

_____

Dated this _____ day of _____, 195___.

_____ [Seal]

_____ [Seal]

_____ [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Interior—Duplicating Section, Washington, D. C. 47318

224 New Customhouse
Denver 2, Colorado

December 31, 1953.

Memorandum

To: R. P. Fischer

From: DMEA Field Team, Region IV

Subject: DMEA Docket No. 3089 (Uranium), F. O. Manol and DMEA Docket No. 3190 (Uranium), Richard Vopat, McKinley County, New Mexico.

This is in reply to Strobell's memorandum to you dated December 10, 1953, forwarded to this office with your memorandum of December 14, 1953 concerning the possible confusion between the subject dockets.

DMEA-3089

The area covered by the proposed project measures 1320 x 2640 feet. Adapting the spacing to these measurements by using the engineer examiner's methods we propose that no holes be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries. Stage 1 would then consist of 78 holes spaced 200 feet apart; Stage 2 would consist of 60 offset holes; Stage 3 would consist of 92 additional offset holes where justified at 50 foot intervals. A contract will be prepared authorizing the drilling of 230 holes totaling 17,940 feet. This compares with the applicant's proposed 900 holes and the engineer examiner's figure of 362 holes.

DMEA-3190

A tentative contract will be submitted to the applicant authorizing the drilling of 120 holes totaling 8400 feet. The applicant had requested 532 holes at an estimated expenditure of $37,139.93.

We believe that this will answer Mr. Strobell's questions.

W H King
W. H. King

A. H. Koschmann
A. H. Koschmann

HMC:cwm

cc: Docket (3089)
Docket (3190)
WRStorms; AHKoschmann (2); Chron.

IN REPLY REFER TO:

Mining Division
Date Rec'd.
DEC 15 1953
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 360
Grand Junction, Colo.

December 14, 1953

Memorandum

To: W. H. King and A. H. Koschmann, Region IV

From: R. P. Fischer, Colorado Plateau District Office RPF

Subject: Attachment

Attached is a copy of a memorandum from J. D. Strobell to myself regarding DMEA 3190 and 3089.

This copy is transmitted to you for your information. I have not attempted to review this problem and am unable to make any comment regarding it.

Attachment

RPF/mlr

cc: W. R. Storms

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : R. P. Fischer

DATE: December 10, 1953

FROM : J. D. Strobell, Jr. JDS

SUBJECT: DMEA - 3190 (Vopat) and DMEA - 3089 (Manol)

Study of copies of recent correspondence between the Denver Field Team and the Washington Operating Committee reveals a mix-up between the above dockets.

The Nov. 27, 1953 letter from W. S. Martin of the Operating Committee to W. H. King of the Field Team states in part:

> "Referring to this latter application, and applying the Field Team's method in estimating the work proposed for Docket No. DMEA-3089, we estimate that 162 holes (11,500 feet of drilling) at a cost of $10,000.00, would be more reasonable than the 532 holes at a cost of $37,139.93 proposed by the applicant."

The antecedent of the word "latter" in the opening phrase is DMEA-3190.

We don't have a copy of summary of Vopat's 3190 application, but Manol's revised 3089 application proposed to spend $73,559.54 for 72,360 feet of drilling. The paragraph quoted was, therefore, intended to apply to Vopat's application.

The Field Team, however, interpreted it to apply to Manol's application and on December 2 wrote Manol re docket 3089 that they would consider a modified program providing for 162 holes totalling 11,500 feet of drilling at a cost of $10,000.

This is patently a mistake, as Manol proposed to explore 80 acres. The 162 holes considered by the Field Team would permit only two holes per acre which is not an adequate exploration program for uranium deposits in the Todilto limestone.

I recommend that this be called to the Field Team's attention, so that they can end the shock Mr. Manol must be suffering, because in an earlier paragraph of Martin's letter he says: "The drilling proposed by the Field Team for the area mentioned in application Docket No. DMEA-3089 seems reasonable, although we would prefer not to include the 60 holes drilled on 25 foot spacing unless you believe such close drilling is essential to explore this particular area."

This refers to Farnham's recommended drilling which was to consist of:

1.	91	holes	spaced	200	feet	apart
2.	91	"	"	100	"	"
3.	120	"	"	50	"	"
4.	60	"	"	25	"	"

The Washington office is willing, therefore, to go along with 302 holes on the Manol property, not the 162 offered Manol by the Field Team.

JDS/r

cc: G. J. file(2)
Reading file
3 extras

12/24/53

To: King

For:

Letter from F. O. Manol, re DMEA 3089 enclosing abstract of title and requesting information regarding drilling program

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

Mining Division
Date Rec'd.
DEC 24 1953
BUREAU OF MINES
Denver, Colorado

December 21, 1953

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. W. H. King
re: DMEA Docket No. 3089

Gentlemen:

In reply to your letter of December 2nd, I submit the following information:

The application for exploration assistance under DMEA Docket No. 3089, is by a group venture of persons whose names and addresses are listed in a supplement attached to and made a part of the application. You will note upon reading the supplement that I am an assignee of an undivided one-sixth of the lease on the property in question.

On the 1st day of July, 1952 an agreement was entered into by the other parties and myself wherein I was to operate the property in question, a copy of this agreement is also attached to and made a part of the application. The application therefore, is presented to the Defense Minerals Exploration Administration by the group venture through me as their operator and agent.

no power to apply for DMEA benefits

An abstract of title to the property in question, brought down to date showing the original lease, the various assignments thereof, and the present interestholders in said lease, is enclosed herewith. This abstract was sent to your office once before on September 24 and was returned to me by your office on October 14.

The "Owner's Consent to Lien" signed by the owners of the property and the lessee were transmitted to your Denver office in my letter of October 16, 1953.

Since the operating agreement is terminable at will by any interestholder and requires the consent of the group to the incurrence of expenditures in excess of $500.00 by me, if your office desires I will procure letters of authorization signed by all members of the group authorizing me to proceed with this application to its conclusion. Tom Harley, Jr., who owns an undivided one-sixth interest in the lease, has already sent me a letter of authorization which I am enclosing herewith. If his letter meets with your approval, I will have the other interestholders write similar letters which I will forward to you to be made a part of the application.

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

Regarding your proposal of a revised drilling program of 162 holes totaling 11,500 feet of drilling at a cost of $10,000 I can not accept the program until I am informed of its details, just precisely how the calculations are made. Also I want to know how long will it take to get additional holes when their need becomes evident. This is important because we do not want to be stymied by a long period of inactivity between the original drilling program and the anticipated subsequent offset drilling.

Very truly yours,

F O Manol

HARLEY AND HARLEY
ATTORNEYS AT LAW
SUITE 516 FOURTH NATIONAL BANK BUILDING
WICHITA 2, KANSAS

TOM HARLEY
TOM HARLEY, JR.

December 10, 1953

Mr. F. O. Manol
Aztec, New Mexico

RE: Application for Loan
DMEA, Docket No. 3089

Dear Oscar:

This letter is to act as your authorization to make an application to the Defense Minerals Exploration Administration for exploration assistance on all or any part of the following described real estate, to-wit:

> The North Half of the Southeast Quarter ($N\frac{1}{2}$ $SE\frac{1}{4}$) and the South Half of the Northeast Quarter ($S\frac{1}{2}$ $NE\frac{1}{4}$) and Lots Three (3) and Four (4) and the East Half of the Southwest Quarter ($E\frac{1}{2}$ $SW\frac{1}{4}$) of Section Thirty (30), Township Thirteen (13), North of Range Nine (9) West of the New Mexico Meridian, McKinley County, New Mexico,

in such amount and on such terms as you deem advisable.

I hereby further authorize you, in my behalf and stead, to sign any and all papers necessary to the obtaining of such assistance and I hereby ratify any and all acts done by you up to date relative to the same.

Yours very truly,

Tom Harley Jr.

THJr/b

Tom Harley, Jr.

December 21, 1953

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. W. H. King
re: DMEA Docket No. 3089

Gentlemen:

In reply to your letter of December 2nd, I submit the following information:

The application for exploration assistance under DMEA Docket No. 3089, is by a group venture of persons whose names and addresses are listed in a supplement attached to and made a part of the application. You will note upon reading the supplement that I am an assignee of an undivided one-sixth of the lease on the property in question.

On the 1st day of July, 1952 an agreement was entered into by the other parties and myself wherein I was to operate the property in question, a copy of this agreement is also attached to and made a part of the application. The application therefore, is presented to the Defense Minerals Exploration Administration by the group venture through me as their operator and agent.

An abstract of title to the property in question, brought down to date showing the original lease, the various assignments thereof, and the present interestholders in said lease, is enclosed herewith. This abstract was sent to your office once before on September 24 and was returned to me by your office on October 14.

The "Owner's Consent to Lien" signed by the owners of the property and the lessee were transmitted to your Denver office in my letter of October 16, 1953.

Since the operating agreement is terminable at will by any interestholder and requires the consent of the group to the incurrence of expenditures in excess of $500.00 by me, if your office desires I will procure letters of authorization signed by all members of the group authorizing me to proceed with this application to its conclusion. Tom Harley, Jr., who owns an undivided one-sixth interest in the lease, has already sent me a letter of authorization which I am enclosing herewith. If his letter meets with your approval, I will have the other interestholders write similar letters which I will forward to you to be made a part of the application.

Regarding your proposal of a revised drilling program of 162 holes totaling 11,500 feet of drilling at a cost of $10,000 I can not accept the program until I am informed of its details, just precisely how the calculations are made. Also I want to know how long will it take to get additional holes when their need becomes evident. This is important because we do not want to be stymied by a long period of inactivity between the original drilling program and the anticipated subsequent offset drilling.

Very truly yours,

D O Manol

32
1-N-58 W

Beca Bin
Dale Bin

Heirs would determine
address are in as being
produced on 3/24/52
& has continued since

Gaeden P. Roundy
Clarinda W. Roundy

MS

↓

Josefita Baca de Garcia

↓

Lee B. Garcia

↓

Gaedent. Roundy
W A Greer

½ property & min 1000 per year

12 years or
as long thereafter

Heirs

Robert B
McHaley

assignment

1000 per year
7/20 override
to Greer

Bertha Greer

1/3

1/6

1/6

1/6

1/2

Oscar Mond

Edna F. Ponder

John A McHaley
Joy C

Tom Harley

Joy McHaley

1 1/3 % of 1%

3 1/3 %

3 1/3 %

1 1/3 %

3 1/3 %

1g and
Evelyn Stearns

9/37 1%

H V Copeland

O H Armstrong

Rudy B Coan

Thomas A King

D R Robinson

Wyoming Gas 58

Expires March 24

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3089

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, P. O. Box 246, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows, and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as set forth in the subordination agreement of the others attached.~~

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: **See Annex I substituted for that part of 6(a) preceding the colon.**

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____
Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
K. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

T. O. Nagel	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	331 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	331 S. Terrace Dr.	Wichita, Kansas	1/12
Rio S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
C. E. Yonker	3136 Stanford	Dallas, Texas	1/12
Edna F. Yonker	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Olson	Box 491	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
E. G. and/or Evelyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5650 Layor Drive	Cleveland, Ohio	1/60
E. J. Hamilton	1809 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the DMEA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the DMEA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMEA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1	- Rotary drill 78 holes a total of 6084 feet @ $.90 per foot -	$5,475.60
Stage 2	- Rotary drill 60 holes a total of 4680 feet @ $.90 per foot -	4,212.00
Stage 3	- Rotary drill 92 holes a total of 7176 feet @ $.90 per foot -	6,458.40
	Total Estimated Cost	$16,146.00
	Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

Dated this _____ day of _____, 195___.

Golden P. Roundy [Seal]

Clarinda W Roundy [Seal]

W. A. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

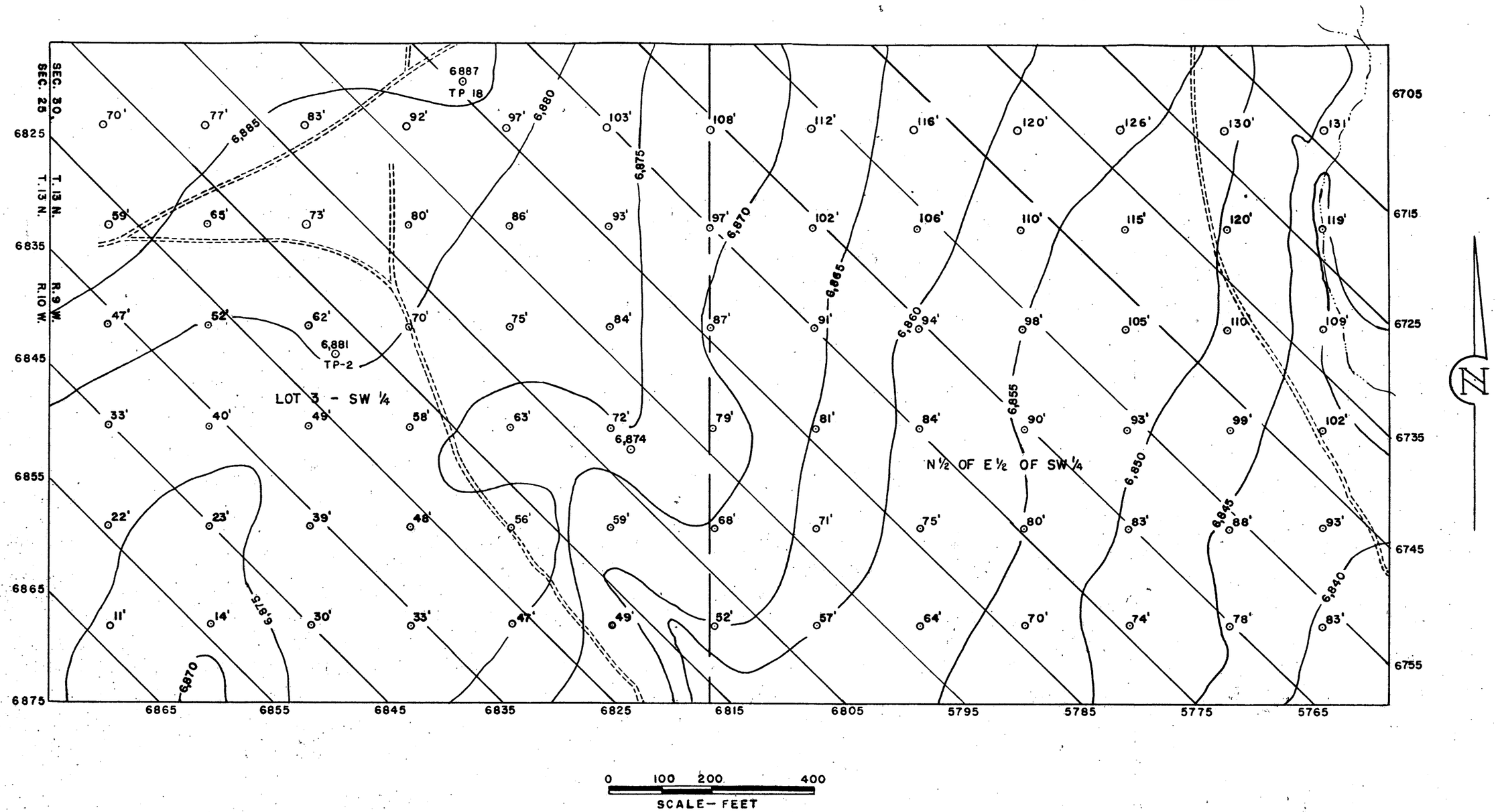
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE McKINLEY COUNTY, NEW MEXICO

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3089

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, P. O. Box 246, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows; and as set forth in Annex I attached hereto and made a part hereof;

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: **See Annex I substituted for that part of 6(a) preceding the colon.**

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

Executive Officer - DMEA
Field Team, Region IV

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
E. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the DMEA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the DMEA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMEA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1	- Rotary drill 78 holes a total of 6084 feet @ $.90 per foot -	$5,475.60
Stage 2	- Rotary drill 60 holes a total of 4680 feet @ $.90 per foot -	4,212.00
Stage 3	- Rotary drill 92 holes a total of 7176 feet @ $.90 per foot -	6,458.40
	Total Estimated Cost	$16,146.00
	Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions_____

Dated this _____ day of _____, 195___.

Golden P. Roundy [Seal]

Clarinda W Roundy [Seal]

W. A. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half ($1\frac{1}{2}$) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half ($1\frac{1}{2}$) percent of any such net amounts, plus one-half ($\frac{1}{2}$) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

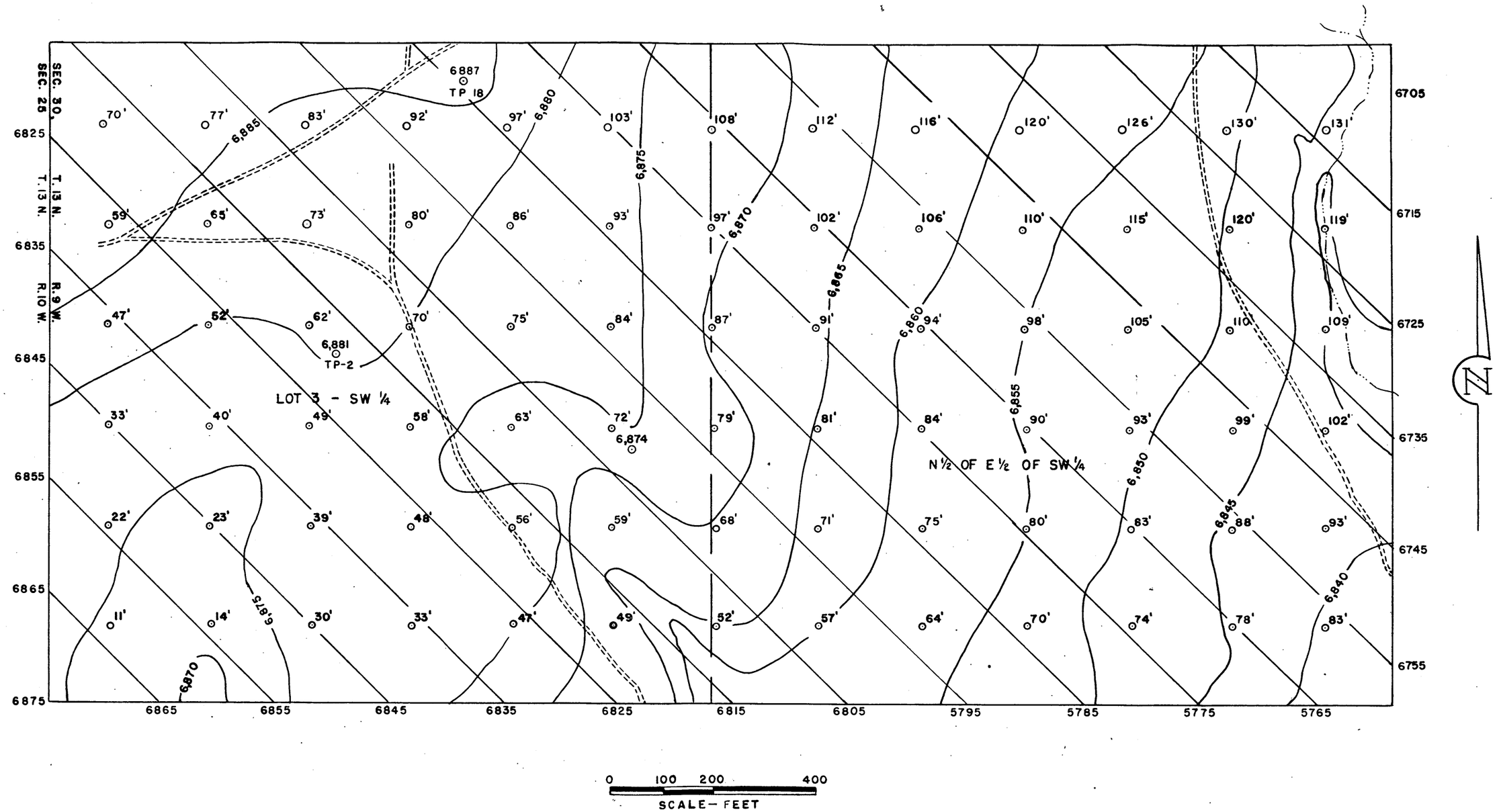
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3089

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, F. O. Box 216, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows; and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of D½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: **See Annex I substituted for that part of 6(a) preceding the colon.**

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

Executive Officer - DMEA
Field Team, Region IV

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the DMEA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the DMEA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMEA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 78 holes a total of 6084 feet @ $.90 per foot -	$5,475.60
Stage 2 - Rotary drill 60 holes a total of 4680 feet @ $.90 per foot -	4,212.00
Stage 3 - Rotary drill 92 holes a total of 7176 feet @ $.90 per foot -	6,458.40
Total Estimated Cost	$16,146.00
Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Twp. 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

Dated this _____ day of _____, 195___.

Golden P. Roundy [Seal]
Clarinda W. Roundy [Seal]
W. G. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

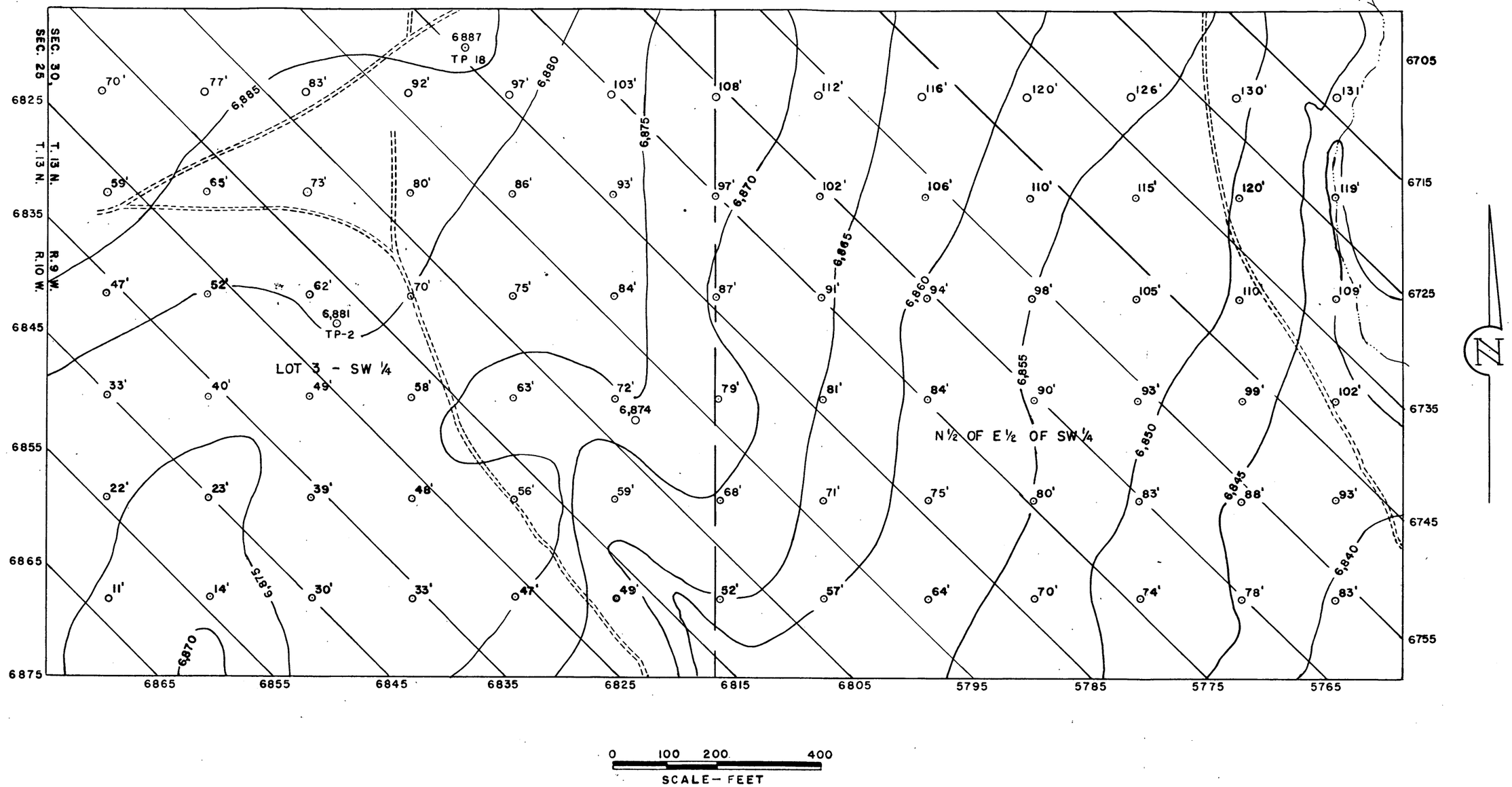
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3069

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] P. O. Manol, P. O. Box 216, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows; and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼, both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the DMEA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the DMEA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMEA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 78 holes a total of 6004 feet @ $.90 per foot -	$5,403.60
Stage 2 - Rotary drill 60 holes a total of 4680 feet @ $.90 per foot -	4,212.00
Stage 3 - Rotary drill 92 holes a total of 7176 feet @ $.90 per foot -	6,458.40
Total Estimated Cost	$16,116.00
Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Twp. 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

Dated this _____ day of _____, 195___.

Golden P. Roundy [Seal]
Clarinda W. Roundy [Seal]
W. A. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

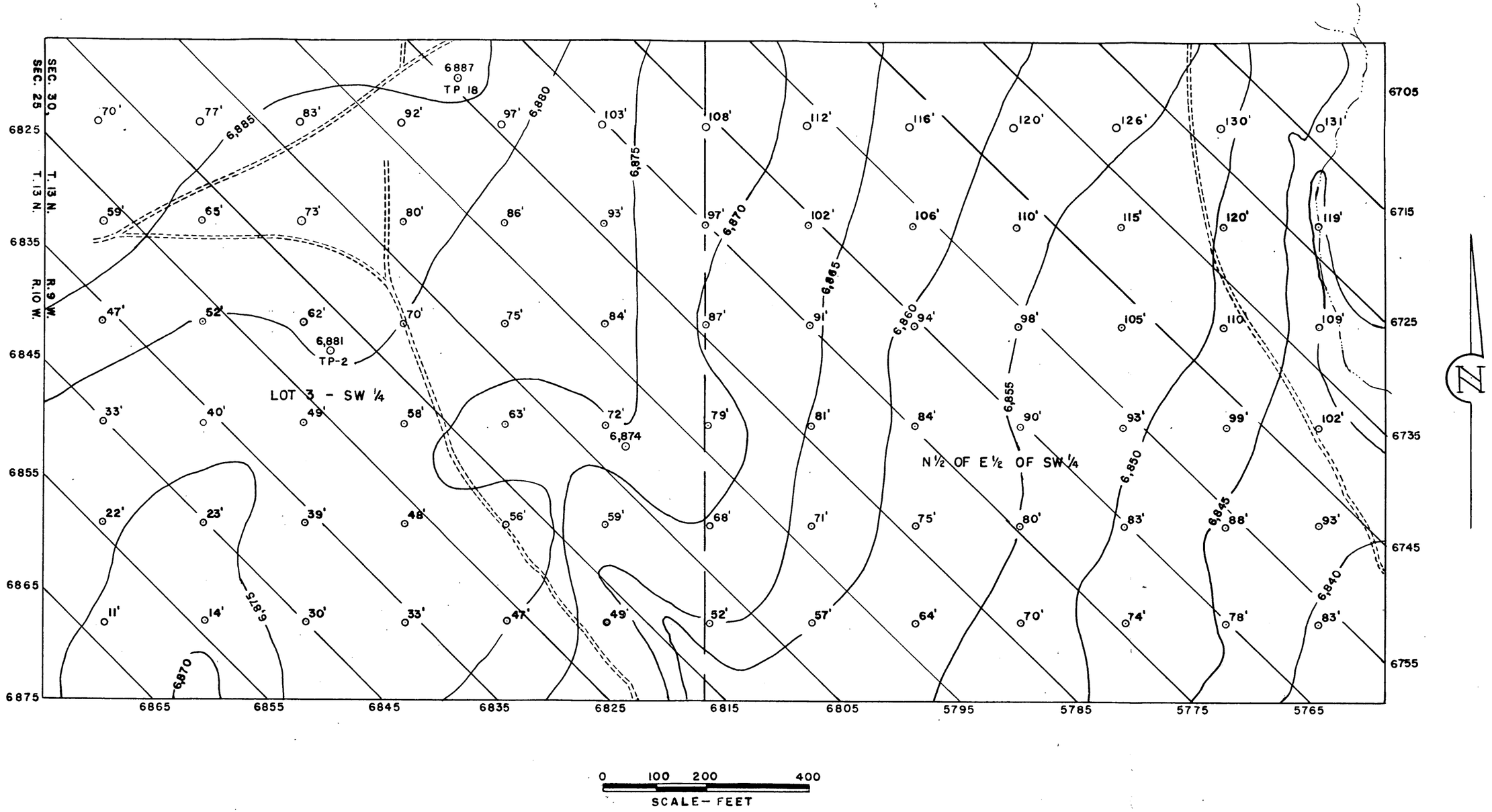
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3029

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] P. O. Box 216 Grants, New Mexico } Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows; and as set forth in Exhibit I attached hereto and made a part hereof.

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, E½ of E½ of SW¼ both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

(*a*) ~~That the Operator is the owner, in possession, and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,534.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the DMA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the DMA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 -	Rotary drill 78 holes a total of 6084 feet @ $1.90 per foot -	$5,475.60
Stage 2 -	Rotary drill 60 holes a total of 2240 feet @ $1.90 per foot -	4,212.00
Stage 3 -	Rotary drill 92 holes a total of 7176 feet @ $1.90 per foot -	6,158.40
	Total estimated cost	$16,146.00
	Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Twp. 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

Dated this _____ day of _____, 195___.

Golden P Roundy [Seal]

Clarinda W. Roundy [Seal]

W. A. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

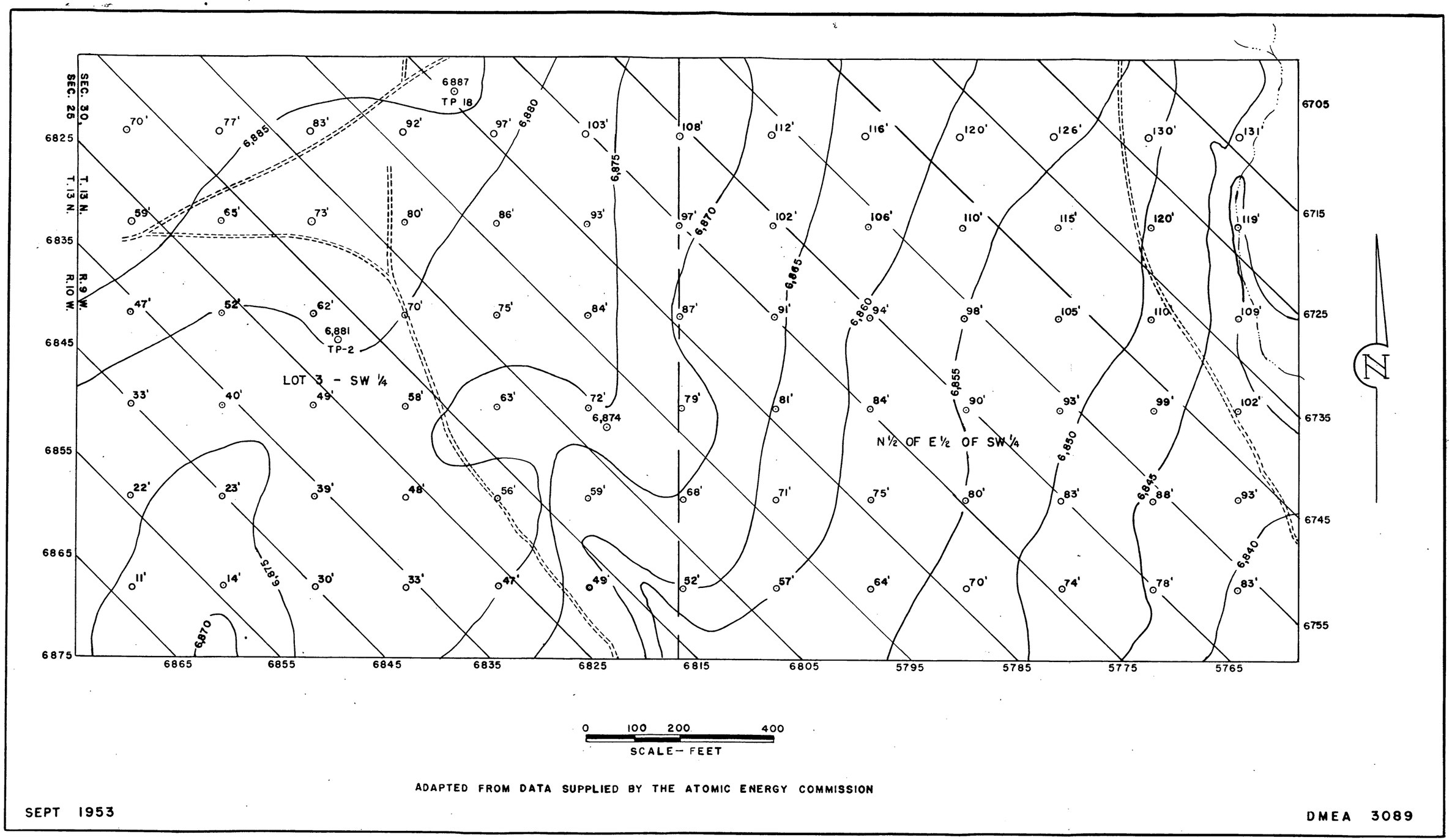


FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE McKINLEY COUNTY, NEW MEXICO

MF-200 (A)
(February 1952)

DOCKET NO. DMEA [illegible]

COMMODITY [illegible]

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] [illegible] Operator and agent for joint venture of persons named in Exhibit I attached hereto.

hereinafter called the "Operator," as follows: [illegible]

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of [illegible], County of [illegible], described as follows:[3] [illegible]

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: [illegible]

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] [illegible]

in or upon the described land; and shall bring the project to completion within a period of [illegible] from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $[illegible], which is 90 percent of $[illegible], the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See form I substituted for this part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* .....

.....

.....

.....

.....

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

.....
(Operator)

By .....

By .....
Executive Officer - Exp.
Field Team, Region IV

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

..... [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 100 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the [illegible] representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the [illegible] representative a maximum of 32 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 70 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DOE, in 5-foot runs throughout the entire thickness of the Todilto Limestone. Radioactric logging of the hole and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 78 holes a total of 6084 feet @ $1.90 per foot -	$11,559.60
Stage 2 - Rotary drill 60 holes a total of 4680 feet @ $1.90 per foot -	8,892.00
Stage 3 - Rotary drill 32 holes a total of 2176 feet @ $1.90 per foot -	4,134.40
Total estimated cost	$24,586.00
Government Participation - 90%	$22,127.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expense incurred in completing the work.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of New Mexico, County of McKinley, described as follows:1/

Lot No. 3 of the SW¼; N½ of the E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ F. O. Manol, Operator and Agent for a group of individuals leasing the above described land

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

Dated this _____ day of _____, 195___.

Golden P. Roundy [Seal]
Glorinda W. Roundy [Seal]
W. A. Greer [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

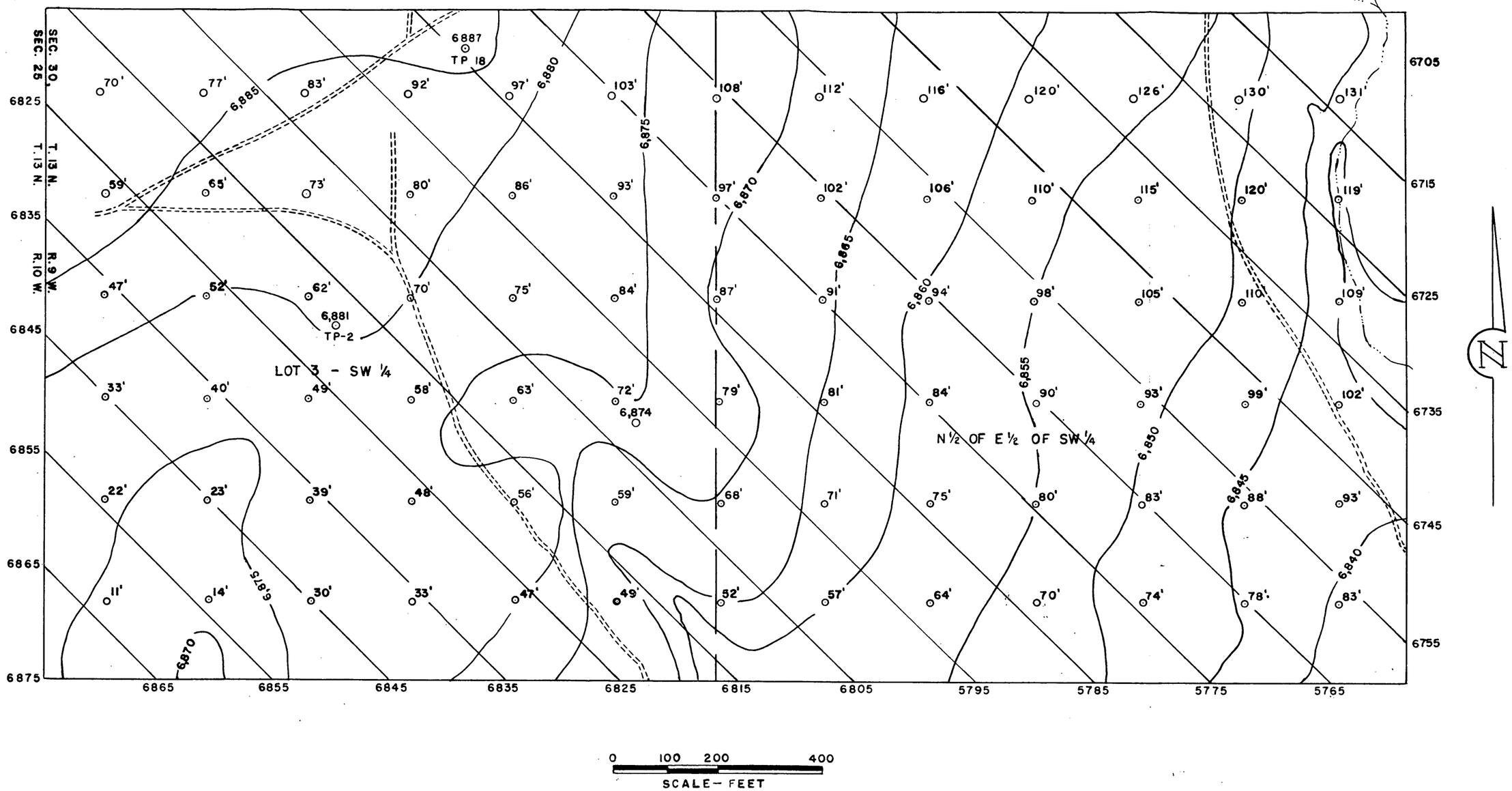
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

HAVE TWO MORE

DN 235 BUREAU MINES 12-29-53 4-04 PM

C O MITTENDORF

REFERENCE IS MADE TO OUR MEMORANDUM DATED OCTOBER 20,1953 RE DOCKET DMEA 3089, F. O. MANOL, PLEASE RETURN OWNER,

S CONSENT TO LIEN FORMS MF-203 AND ANY OTHER DATA WHICH YOU MAY HAVE TO ENABLE US TO PREPARE CONTRACT AS REQUESTED BY ERNEST W. ELLIS IN LETTER DATED DECEMBER 14,1953.

W H KING

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

Mining Division
Date Rec'd
JAN 6 1954
BUREAU OF MINES
Denver, Colorado

JAN - 4 1954

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol
Manol Mine
McKinley County, New Mexico

Dear Mr. King:

In accordance with your teletype request of December 29, 1953, I am enclosing six copies of the Owner's Consent to Lien covering the captioned proposed project.

Your teletype requested any other data which we may have appertaining to the subject property. We have no other data which you do not also have in your office with the exception of the Commodity Members' comments on the Field Team report. Accordingly, we are enclosing copies of memoranda from Mr. Arthur P. Butler, Jr., and Mr. H. D. Keiser, both dated November 12, 1953.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

RBB

O.C.L. forms held for contract. HMC - 1-7-54

Enclosures 8

Approved:

J. H. Hedges
Member, Bureau of Mines

D. M. Barrows
Member, Geological Survey

12/17/53

To: Kin ewHK

For: Shaw

Letter from E. W. Ellis, DMEA
Wash,re DMEA 3089, F. O. Manol
Mine, McKinley County, N.M.,

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

Mining Division
Date Rec'd
DEC 17 1953
BUREAU OF MINES
Denver, Colorado

DEC 14 1953

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. King:

Reference is made to the Field Team's memorandum of December 2, 1953, with attached copy of your letter of the same date to Mr. F. O. Manol, regarding the subject docket. Our tentative proposal of 162 holes totaling 11,500 feet of drilling was meant to apply to Docket No. DMEA-3190 and not to this docket.

In our letter to you of November 27, 1953, we stated: "The drilling proposed by the Field Team for the area mentioned in application Docket No. DMEA-3089 seems reasonable, although we would prefer not to include the 60 holes drilled on 25 foot spacing, unless you believe such close drilling is essential to explore this particular area."

In your memorandum of December 2, you agreed that holes should not be drilled on 25 foot centers. You also added the suggestion that holes should not be drilled within 200 feet of the property lines since the Applicant also owns adjoining properties to the South and East which would profit unduly from the proposed exploration.

The area covered by the proposed project measures 1320 x 2640 feet. Adapting the spacing to these measurements but using the engineer examiner's methods, we propose that no holes be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries. Stage I would then consist of 78 holes spaced 200 feet apart and Stage II would consist of 60 or less offset holes. Stage III would consist of 92 holes offset where justified at 50 foot intervals.

The contract should, therefore, authorize the drilling of 230 holes totaling 17,160 feet at an over-all unit cost basis of not more than $1.06 per foot of hole drilled. The total estimated cost

should not exceed $18,189.60. The latter figure compares with Applicant's proposed expenditure of $73,559.54 for 900 holes and the engineer examiner's figure of $28,627.00 for 362 holes.

In order to facilitate the processing of this application it is suggested that you draw up and execute the contract as outlined above as soon as the Applicant has met the requirements stated in the Chief Counsel's memorandum of November 20, 1953 to the Chief, Rare and Miscellaneous Metals Division.

Sincerely yours,

Ernest Wm. Ellis

ACTING Chairman, Operating Committee

APPROVED:

A. H. Hedges

Member, Bureau of Mines

T. P. Thayer

Member, Geological Survey

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

DEC 1 4 1953

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. King:

Reference is made to the Field Team's memorandum of December 2, 1953, with attached copy of your letter of the same date to Mr. F. O. Manol, regarding the subject docket. Our tentative proposal of 162 holes totaling 11,500 feet of drilling was meant to apply to Docket No. DMEA-3190 and not to this docket.

In our letter to you of November 27, 1953, we stated: "The drilling proposed by the Field Team for the area mentioned in application Docket No. DMEA-3089 seems reasonable, although we would prefer not to include the 60 holes drilled on 25 foot spacing, unless you believe such close drilling is essential to explore this particular area."

In your memorandum of December 2, you agreed that holes should not be drilled on 25 foot centers. You also added the suggestion that holes should not be drilled within 200 feet of the property lines since the Applicant also owns adjoining properties to the South and East which would profit unduly from the proposed exploration.

The area covered by the proposed project measures 1320 x 2640 feet. Adapting the spacing to these measurements but using the engineer examiner's methods, we propose that no holes be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries. Stage I would then consist of 78 holes spaced 200 feet apart and Stage II would consist of 60 or less offset holes. Stage III would consist of 92 holes offset where justified at 50 foot intervals.

The contract should, therefore, authorize the drilling of 230 holes totaling 17,160 feet at an over-all unit cost basis of not more than $1.06 per foot of hole drilled. The total estimated cost

should not exceed $18,189.60. The latter figure compares with Applicant's proposed expenditure of $73,559.54 for 900 holes and the engineer examiner's figure of $28,627.00 for 362 holes.

In order to facilitate the processing of this application it is suggested that you draw up and execute the contract as outlined above as soon as the Applicant has met the requirements stated in the Chief Counsel's memorandum of November 20, 1953 to the Chief, Rare and Miscellaneous Metals Division.

Sincerely yours,

Ernest Wm. Ellis

ACTING Chairman, Operating Committee

APPROVED:

J. H. Hedges

Member, Bureau of Mines

T. P. Thayer

Member, Geological Survey

224 New Customhouse
Denver 2, Colorado

December 2, 1953.

Memorandum

To: Chairman of the Operating Committee

From: Field Team, Region IV

Subject: Docket No. DMEA-3089 (Uranium), F. O. Manol Mine, McKinley County, New Mexico.

Reference is made to the memorandum dated November 27, 1953 from the Acting Chairman of the Operating Committee regarding Docket No. DMEA-3089.

We agree that a contract should be prepared authorizing 162 holes totaling 11,500 feet of drilling. Holes should not be drilled within 200 feet of the property lines. Further consideration of the matter indicates that holes should not be drilled on 25 foot centers. We believe that Stage I of the contract should consist of holes drilled on 200 foot centers. The additional holes should be drilled at locations acceptable to the Government based on the results of the initial drilling.

We are enclosing copy of our letter to Mr. Manol.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosure

JFS:cwm

cc: Docket
RPFisher
WRStorms
AHKoschmann (2)
Chron.
HMConnors

224 New Customhouse
Denver 2, Colorado

December 2, 1953.

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3089

Dear Mr. Manol:

Reference is made to your application for exploration assistance, Docket No. DMEA-3089.

The Defense Minerals Exploration Administration will consider a revised drilling program consisting of drilling holes on 200-foot centers. Holes are not to be drilled within 200 feet of the property lines. Additional holes will be authorized by the Government if in the opinion of the Government the drilling of the initial holes indicates that additional drilling is warranted. The contract would provide for 162 holes totaling 11,500 feet of drilling at a cost of $10,000.00.

If the above program is acceptable to you, the Washington Office requires clarification of the following which is quoted from a memorandum from the Chief Counsel, DMEA:

> "The application is in the name of 'F. O. Manol *** Operator and Agent for group venture of persons named in supplement attached ***' to the application, and states that the applicant is a lessee of the land. It is not clear from the application whether F. O. Manol is the applicant or whether a 'group venture' is contemplated, because although the reference to a 'group venture' is made in item 1(a) of the application, a reference is made in item 3(d) to the Applicant's interest in the property being based upon an 'Operating Agreement' dated July 1, 1952, between all the lessees and Mr. Manol. There is no copy of the lease from the owner of the property in the docket.
>
> "If the lessees are the applicants, their interests in the land are held under the lease and do not depend upon the Operating Agreement. If Mr. Manol is the applicant, he does not have a sufficient interest in the land under the Operating Agreement, for the agreement gives him no interest in the land, but rather grants him certain limited authority to act as agent for the lessees, and, it appears, this agency is terminable at the will of any of the principals, without notice.

"Accordingly, we must be informed as to the identity of the applicant and the nature of the entity under which business is to be done. If Mr. Manol is the applicant as an individual, he must demonstrate that he holds a sufficient interest in the land for the purposes of an exploration project contract. We must have copies of the instrument which gives him this right, a copy of the basic lease, and Owner's Consent to Lien from sublessors as well as from the owner."

If the proposed work is acceptable to you, we suggest that in order to expedite processing your application you write the Administrator, DMEA, signifying your acceptance and clarifying the items mentioned by the Chief Counsel. Please send this office a copy of all correspondence.

Very truly yours,

W H King

W. H. King
Field Team, Region IV

A. H. Koschmann

A. H. Koschmann

JFS:cwm

cc: Docket
RPFischer
WRStorms
AHKoschmann (2)
Chron.
Connors

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

Mining Division
Date Rec'd
NOV 30 1953
BUREAU OF MINES
Denver, Colorado

NOV 27 1953

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Re: Docket No. DMEA-3190 (Uranium)
Richard Vopat et al
McKinley County, New Mexico

Dear Mr. King:

We refer to your letter dated November 5, 1953, which contains certain recommendations pertaining to the above docketed applications.

Concerning the question of subordinating adjoining ground, Mr. Manol's letter of November 4, 1953, a copy of which is enclosed, states- "We further agree that the standard DMEA royalty payments shall apply to any and all continuous ore bodies which project into contiguous holdings we have in the same section of ground". As the ore bodies found in this area are isolated masses, we feel that this is reasonable and acceptable, especially in view of the fact that part of the land adjoining the property mentioned in the applications has been explored by the applicant.

We definitely agree with you that the drilling proposed by the applicants is excessive. The drilling proposed by the Field Team for the area mentioned in application Docket No. DMEA-3089 seems reasonable, although we would prefer not to include the 60 holes drilled on 25 foot spacing, unless you believe such close drilling is essential to explore this particular area.

Mr. Manol has forwarded executed copies of "Owner's Consent to Lien" on the land mentioned in Docket No. DMEA-3089, however, our legal department thinks we should have more security before a contract can be written. The attached memorandum from the Chief Counsel to Mr. Ellis is self-explanatory, so if the Field Team believes a contract should be written, they should contact Mr. Manol and request the data mentioned in this memorandum. Although the memorandum concerns only Docket No. DMEA-3089, the same data will be required to process the Docket No. DMEA-3190 application.

Referring to this latter application, and applying the Field Team's method in estimating the work proposed for Docket No. DMEA-3089, we estimate that 162 holes (11,500 feet of drilling) at a cost of $10,000.00, would be more reasonable than the 532 holes at a cost of $37,139.93 proposed by the applicant.

If you believe that contracts might be written on the subject applications, we suggest that you inform Mr. Manol concerning the amount of drilling that might be recommended. If he is agreeable to the reduced programs, then he should arrange to submit the required data mentioned in the Chief Counsel's memorandum.

Sincerely yours,

W S Martin

ACTING Chairman, Operating Committee

Enclosures 4

APPROVED:

T. H. Hodges

Member, Bureau of Mines

R M Larrabee

Member, Geological Survey

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

NOV 27 1953

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Re: Docket No. DMEA-3190 (Uranium)
Richard Vopat et al
McKinley County, New Mexico

Dear Mr. King:

We refer to your letter dated November 5, 1953, which contains certain recommendations pertaining to the above docketed applications.

Concerning the question of subordinating adjoining ground, Mr. Manol's letter of November 4, 1953, a copy of which is enclosed, states- "We further agree that the standard DMEA royalty payments shall apply to any and all continuous ore bodies which project into contiguous holdings we have in the same section of ground". As the ore bodies found in this area are isolated masses, we feel that this is reasonable and acceptable, especially in view of the fact that part of the land adjoining the property mentioned in the applications has been explored by the applicant.

We definitely agree with you that the drilling proposed by the applicants is excessive. The drilling proposed by the Field Team for the area mentioned in application Docket No. DMEA-3089 seems reasonable, although we would prefer not to include the 60 holes drilled on 25 foot spacing, unless you believe such close drilling is essential to explore this particular area.

Mr. Manol has forwarded executed copies of "Owner's Consent to Lien" on the land mentioned in Docket No. DMEA-3089, however, our legal department thinks we should have more security before a contract can be written. The attached memorandum from the Chief Counsel to Mr. Ellis is self-explanatory, so if the Field Team believes a contract should be written, they should contact Mr. Manol and request the data mentioned in this memorandum. Although the memorandum concerns only Docket No. DMEA-3089, the same data will be required to process the Docket No. DMEA-3190 application.

Referring to this latter application, and applying the Field Team's method in estimating the work proposed for Docket No. IMEA-3089, we estimate that 162 holes (11,500 feet of drilling) at a cost of $10,000.00, would be more reasonable than the 532 holes at a cost of $37,139.33 proposed by the applicant.

If you believe that contracts might be written on the subject applications, we suggest that you inform Mr. Manol concerning the amount of drilling that might be recommended. If he is agreeable to the reduced programs, then he should arrange to submit the required data mentioned in the Chief Counsel's memorandum.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

Enclosures 4

APPROVED:

J. H. Hedges
Member, Bureau of Mines

D. M. Larrabee
Member, Geological Survey

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

November 20, 1953

Memorandum

To: Chief, Rare and Miscellaneous Metals Division

From: Chief Counsel

Subject: F. O. Manol, Docket No. DMEA-3089 (Uranium)

At the request of Mr. Murphy, we have reviewed the application which is identified above, in order to determine whether the Applicant has a sufficient interest in land for the purposes of an exploration project contract.

The application is in the name of "F. O. Manol *** Operator and Agent for group venture of persons named in supplement attached * * *" to the application, and states that the applicant is a lessee of the land. It is not clear from the application whether F. O. Manol is the applicant or whether a "group venture" is contemplated, because although the reference to a "group venture" is made in item 1(a) of the application, a reference is made in item 3(d) to the Applicant's interest in the property being based upon an "Operating Agreement" dated July 1, 1952, between all the lessees and Mr. Manol. There is no copy of the lease from the owner of the property in the docket.

If the lessees are the applicants, their interests in the land are held under the lease and do not depend upon the Operating Agreement. If Mr. Manol is the applicant, he does not have a sufficient interest in the land under the Operating Agreement, for the agreement gives him no interest in the land, but rather grants him certain limited authority to act as agent for the lessees, and, it appears, this agency is terminable at the will of any of the principals, without notice.

Accordingly, we must be informed as to the identity of the applicant and the nature of the entity under which business is to be done. If Mr. Manol is the applicant as an individual, he must demonstrate that he

holds a sufficient interest in the land for the purposes of an exploration project contract. We must have copies of the instrument which gives him this right, a copy of the basic lease, and Owner's Consent to Lien from sublessors as well as from the owner. Similarly, any other applicant must have the same interest in the land.

J. L. Hofflund
Chief Counsel

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

/ C O P Y /

November 4, 1953

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

Re: Docket No. DMEA 3089

Attention: Mr. Ernest Wm. Ellis
Chief Rare & Miscellaneous Metals Div.

Gentlemen:

We are herewith replying to your letter of Oct. 29, and also confirming our long distance telephone of this date made to your office with your Mr. Murphy.

(1) Replying to your paragraph No. 2.

Area "A" in original application was the N½ of the SE¼ as shown on the maps.

(2) Replying to your paragraph No. 3.

Amended DMEA Docket No. 3089 is for the exploration of Lot 3; and the N½ of the E½ of the SW¼; both in Section 30, Township 13 N, Range 9W, McKinley County, New Mexico. We agree to the standard DMEA royalty loan repayment lien for ore produced from this area.

We further agree that the standard DMEA royalty repayments shall apply to any and all continuous ore bodies which project into other contiguous holdings we have in the same Section of ground.

Ore bodies wholely within our other property in the same Section but which land is not included in this DMEA application and contract shall not be subject to DMEA royalty under Docket No. DMEA 3089.

(3) After talking on the telephone with Mr. Murphy who told us your office had not yet received the Field Team recommendations from the Denver office on this Docket No. we contacted Mr. W. H. King of the Denver office by telephone. Mr. King stated that the whole file including Field Team recommendations had been sent to your office October 13. Therefore it appears your office now has everything it takes to pass on this application. We hope we shall be hearing from you shortly.

Very truly yours,

/s/ F. O. Manol
F. O. Manol

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

November 20, 1953

Memorandum

To: Chief, Rare and Miscellaneous Metals Division

From: Chief Counsel

Subject: F. O. Manol, Docket No. DMEA-3089 (Uranium)

At the request of Mr. Murphy, we have reviewed the application which is identified above, in order to determine whether the Applicant has a sufficient interest in land for the purposes of an exploration project contract.

The application is in the name of "F. O. Manol *** Operator and Agent for group venture of persons named in supplement attached * * *" to the application, and states that the applicant is a lessee of the land. It is not clear from the application whether F. O. Manol is the applicant or whether a "group venture" is contemplated, because although the reference to a "group venture" is made in item 1(a) of the application, a reference is made in item 3(d) to the Applicant's interest in the property being based upon an "Operating Agreement" dated July 1, 1952, between all the lessees and Mr. Manol. There is no copy of the lease from the owner of the property in the docket.

If the lessees are the applicants, their interests in the land are held under the lease and do not depend upon the Operating Agreement. If Mr. Manol is the applicant, he does not have a sufficient interest in the land under the Operating Agreement, for the agreement gives him no interest in the land, but rather grants him certain limited authority to act as agent for the lessees, and, it appears, this agency is terminable at the will of any of the principals, without notice.

Accordingly, we must be informed as to the identity of the applicant and the nature of the entity under which business is to be done. If Mr. Manol is the applicant as an individual, he must demonstrate that he

holds a sufficient interest in the land for the purposes of an exploration project contract. We must have copies of the instrument which gives him this right, a copy of the basic lease, and Owner's Consent to Lien from sublessors as well as from the owner. Similarly, any other applicant must have the same interest in the land.

J. L. Hofflund
Chief Counsel

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

/ C O P Y /

November 4, 1953

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

Re: Docket No. DMEA 3089

Attention: Mr. Ernest Wm. Ellis
Chief Rare & Miscellaneous Metals Div.

Gentlemen:

We are herewith replying to your letter of Oct. 29, and also confirming our long distance telephone of this date made to your office with your Mr. Murphy.

(1) Replying to your paragraph No. 2.

Area "A" in original application was the N½ of the SE¼ as shown on the maps.

(2) Replying to your paragraph No. 3.

Amended DMEA Docket No. 3089 is for the exploration of Lot 3; and the N½ of the E½ of the SW¼; both in Section 30, Township 13 N, Range 9W, McKinley County, New Mexico. We agree to the standard DMEA royalty loan repayment lien for ore produced from this area.

We further agree that the standard DMEA royalty repayments shall apply to any and all continuous ore bodies which project into other contiguous holdings we have in the same Section of ground.

Ore bodies wholely within our other property in the same Section but which land is not included in this DMEA application and contract shall not be subject to DMEA royalty under Docket No. DMEA 3089.

(3) After talking on the telephone with Mr. Murphy who told us your office had not yet received the Field Team recommendations from the Denver office on this Docket No. we contacted Mr. W. H. King of the Denver office by telephone. Mr. King stated that the whole file including Field Team recommendations had been sent to your office October 13. Therefore it appears your office now has everything it takes to pass on this application. We hope we shall be hearing from you shortly.

Very truly yours,

/s/ F. O. Manol
F. O. Manol

Quadruplicate Copy
Revised app.

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

August 31, 1953

WMD
9-14-53

Executive Officer
DMEA
224 New Customhouse Building
Denver 2, Colorado

Subject: DMEA-3089

Dear Sir:

Enclosed is our amended application for DMEA assistance in the exploration of a mining lease we have in the Grants, New Mexico Mining District.

We have changed the area to be explored. Changed to a broader starting grid for our drilling program. Eliminated chemical assays. Added radiometric logging by private enterprise. Added radiometric assaying of drill cuttings.

These changes result from the discussions we had at the project site with your field team on Aug. 11.

Inclusions herewith are:

Amended DMEA Form MF-103	4	copies
6 pages supplementing Form MF-103	4	copies
Structure contour map	4	copies
Manol Operating Agreement	0	copies
Drilling and Logging Bid	4	copies

Kindly remove Manol Operating Agreement from original application which now can be considered superceded, and include same with this amended application.

Very truly yours,

F. O. Manol

F. O. Manol

AMENDED***DMEA 3089

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. .....
Metal or Mineral .....
Date Received .....
Estimated Cost .....
Participation (Government %) .....

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: F. O. Manol--P.O. Box 246--Grants, New Mexico--Operator and Agent for group venture of persons named in supplement attached hereto.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable

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

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

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

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

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

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

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

(*c*) The work will start within 90 days and be completed within 15 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated ~~August~~ September 2, 1953

F. O. Manol
(Applicant)

By F O Manol

Box 246--Grants, New Mexico

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

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

SUPPLEMENTAL INFORMATION TO FORM MF-103

1a Names and addresses of owners of lease and their proportionXXX of ownership:

F. O. Manol--------P.O. Box 113--------Aztec, New Mexico-----1/6

Robert B. McNeely--337 S. Terrace Dr.--Wichita, Kansas-------1/12

Joy C. McNeely-----337 S. Terrace Dr.--Wichita, Kansas-------1/12

Flo S. McNeely-----5546 Merrimac-------Dallas, Texas---------1/12

John S. McNeely----5546 Merrimac-------Dallas, Texas---------1/12

G. E. Ponder-------3136 Stanford-------Dallas, Texas---------1/12

Edna F. Ponder-----3136 Stanford-------Dallas, Texas---------1/12

Tom Harley, Jr.----Fourth Nat. Bank.Bldg.-Wichita, Kansas----1/6

Grady B. Coan- ----Box 451----------Aztec, New Mexico-----1/30

Thomas A. King----- Aztec, New Mexico-----1/30

L.G. and/or Evalyn Stearns Aztec, New Mexico-----1/30

E. A. Anderson-----5860 Layor Drive----Cleveland, Ohio-------1/60

E. J. Hakulinen----4805 S. Michigan----South Bend, Ind.------1/60

O. H. Armstrong----Box 6----------Bismarck, N.D.---------1/75

D. R. Dobyns-------731 S. Delaware-----Irving, Texas---------1/75

H. V. Copeland----- Aztec, New Mexico-----1/150

F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENTAL INFORMATION TO FORM MF-103

4a No mining or exploration has been done on the subject land.

However, the applicant has been operating a mine on an eighty acre block of land which is contiguous to the entire south line of the land covered by this application. This block of land, which has been, and is being mined XXXXX, has been explored by the applicant with own funds.

This mine in seven actual working months out of the last two years has produced more than 7,500 tons of ore grossing more than $200,000.00, at a profit of $100,000.00. Approximately 1,500 tons of ore remain to be mined. Larger reserves in this eighty acres are absent for the reason that almost eighty-five percent of the ore bearing Todilto Limestone formation is eroded away.

The subject land is most easily accesible for examination purposes. Starting from Grants, N.M. going 3 miles west on U.S. Highway 66 to a "T" intersection of San Mateo Road going north and right, thence almost 11 miles north on San Mateo Road to a cattle-guard on the west and left, thence 2 miles west on the road going across the cattle-guard. Existing operations then are obvious.

4b Not applicable

4c The property to be explored is a colluvial covered dip slope bench of the Todilto Limestone formation of upper Jurassic age. Uranium minerals found in the Todilto are tyuymanite, uranophane, and small amounts of pitchblende. The minerals have been deposited along fractures, bedding planes, and individual crystals of calcite. These ores are intimately associated with hematite and psilomelene.

The uranium deposits in the Todilto Limestone are essentially tabular bedded deposits ranging in thickness up to ~~thirteen~~ twenty-one feet, and in lateral XXXX extent to over 100,000 square feet.

We believe the land covered by this application merits exploration for uranium ores for the reason that adjoining sections of land on the north, west, and south all have substantial known ore reserves. In other words the land covered by this application is in the middle of a proven ore belt.

Also, exploration conditions are simple and easy. The terrain is very level making it possible to bring in anywhere, and to move easily anywhere, mobile drilling equipment. The ore horizon is uniform and well defined. Drilling depths are not excessive.

4d Accessibility of the project is excellent. Access roads are good. Distance to the Anaconda Copper Mining Co. buying station at Bluewater, New Mexico is only 19 miles. Supply points are good. Residence points are XXXX fair.

4e Manpower, materials, supplies, equipment, water, and power are all abundant.

F. O. Manol
Box 246
Grants, N.M.

SUPPLEMENTAL INFORMATION TO FORM MF-103

5b The attached structure-contour map defines the 80 acre block of land we propose to explore with the EMEA loan we are applying for herewith. Our primary drilling grid is plotted on the map, and drilling depths are shown immediately beneath the drilling locations. Depths are carried five feet below the ore bearing Todilto Limestone formation to take care of minor cave-ins that we have ~~XXXX~~ found by experience to occur occasionally before the holes can be logged.

All proposed exploratory drilling will be done with a Failing 1500 Rotary Rig, drilled dry, compressed air being the medium of circulation. The applicant introduced this superior low cost method of exploratory drilling to the Grants Mining District.

As the result of our previous exploration experience in this very same Section of land we know we are going to encounter several different geologic conditions in this project. In the southwesterly corner the ore bearing Todilto Limestone formation will be relatively shallow with only blowsand above it. Border line test holes on the west and south, drilled by Santa Fe Railroad Company and by ourselves, indicate a substantial presence of the Todilto Limestone. Ore bodies discovered in this area can be mined by open pit methods.

In the middle of the land covered by this application, in an undefined belt, presumed at this time to extend in a diagonal northwest-southeast direction, we are anticipating a considerable amount of local erosion channels in which the ore bearing limestone formation is partly or even completely removed. Drilling depths will average about 100 feet. Only blowsand will cover the orebodies discovered in this area. Adverse conditions to mining feasibility in this area may preclude any intensive drilling even if ore is located with the primary grid. This determination will have to be made if and when the problem arises.

In the northeasterly part of the land covered by this application we can expect full sections of the ore bearing limestone capped by the Summerville Sandstone. Drilling depths will be the deepest in this area, but mining feasibility by underground methods is assured by the fact that the Summerville Sandstone overlays the ore bearing limestone providing a ceiling which can be economically cribbed.

In view of the complexity of geologic conditions we know we can anticipate, we plan to drill first on a broad 200 foot grid to eliminate unfavorable ground immediately from further consideration.

The 200 foot grid will be our basic grid, excepting in areas with drilling depths of 65 feet or less in which the 100 foot grid will be our basic grid. All off-set holes to our basic grids will be predicated on a show of abnormal radio-activity. Our drilling patterns will be systematically shortened as necessary using 100 foot, 50 foot, and 25 foot grids in suspect areas. The 25 foot grid will be used to outline and evaluate ore bodies.

On the basis of what is known about the surrounding area it is possible that as much as 20% of the area to be explored hereunder will show varying degrees of mineralization requiring intensive exploration.

F. O. Manol
Box 246
Grants, N.M.

SUPPLEMENTAL INFORMATION TO FORM MF-103

5b All holes will be logged by a mobile radiometric logging unit and a permanent record of the intensity of the gamma radiation for every inch of every hole will be procured and kept in our files. This very sensitive instrument greatly increases chances for discoveries and simultaneously cuts uranium exploration costs tremendously by eliminating the need for core drilling, and much of the catching of drill cuttings for assay purposes. The instrument enables the project supervisor to decide immediately where to drill off-set holes. No waiting for assays is necessary.

Only on the final 25 foot grid will we catch cuttings. This will be done every two feet while in the ore bearing limestone formation. These will be sacked and cataloged, and field checked with a good sensitive Geiger Counter. Those samples of cuttings which show uranium mineralization approaching ore grade of better will be carefully assayed by radiometric methods and a systematic permanent record of them will be kept. This information will then be used to evaluate any ore bodies discovered.

We are satisfied by our past experiences that radimetric assays of ore in the Todilto Limestone formation are in equilibrium with chemical assays. Therefore no costly chemical assays are contemplated.

5d The writer, F. O. Manol, will supervise the exploration program. He has managed the mining and exploration of contiguous property for the past two years. His record has been one of the most successful in the Grants Mining Dristrict.

The writer is also a partner in the Four Corners Exploration Company, Box 101, Grants, New Mexico. His partner and associate in that venture is Irving Rapaport of Grants, New Mexico, a Geologic Engineer formerly employed in technical and supervisory capacity by the Atomic Energy Commission.

Prior to being in the mining business the writer was Chief Accountant and Office Manager for the H. K. Ferguson Company of Cleveland, Ohio in the construction industry. 1940 to 1946. During this time he was Project Auditor on multi-million dollar government contracts. Subsequently to 1952 he was successfully in business for himself. He sold out his partnership interest in the Home Furnishings Company of Aztec, New Mexico in 1952 to devote his full time to mining.

The writer is thoroughly familiar with and able to provide any form of accountability which the DMEA may require.

F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENT TO INSTRUCTION NUMBER 6
of DMEA Form MF-103

Estimate:

(a) Independent Contracts	Quantity	Unit Cost	Total
Drilling Test Holes 0 to 100 ft.	65,448 ft.	$.50	$32,724.00
Drilling Test Holes 101 to 200 ft.	6,912 ft.	1.00	6,912.00
Blowing & Catching Drill Hole Cuttings for Assay Purposes	13,950 ft.	.50	6,975.00
Radiometric Log of Test Holes	45,000 ft.	.15	6,750.00
Radiometric Scan of Test Holes	27,360 ft.	.07	1,915.20
Radiometric Assay of Cuttings, this includes collecting, mixing, pulverizing, and assaying.	3,987 ea.	1.00	3,987.00
Contingencies	Lump Sum		2,000.00
Supervision, Geologic Consultation, Mine Evaluation, Surveying and Laying-out Grids, Accounting, and equipment and supplies, etc. incidental to these services.	72,360 ft.	.15	10,854.00
			72,117.20
New Mexico School Tax 2%			1,442.34
Total Maximum Cost of Project			$73,559.54

Please note entire project is on contract and all costs are based on amount of work performed on unit cost basis. This makes for a simple determination of costs no matter what quantities of work have been performed when project is completed.

This is a maximum estimate based on very favorable results in our primary and secondary drilling. It is very likely that we will not need the total amount of money in this estimate. Yet we must be prepared to carry out a sound program to its proper conclusion should substantial discoveries be made.

F. O. Manol
Box 246
Grants, N.M.

Original Application

F. O. Manol

3089

2)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. DMEA-3089
Metal or Mineral
Date Received
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: F. O. Manol--P.O. Box 246--Grants, New Mexico--Operator and Agent for group venture of persons named in supplement attached hereto.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract South Half of the Northeast Quarter; North Half of the East Half of the Southwest Quarter; Lot 3 in the Southwest Quarter; all in Section 30, Township 13, Range 9 West, County of McKinley, State of New Mexico.

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable

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

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

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

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

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

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

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

(*c*) The work will start within 90 days and be completed within 15 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated June 15, 1953

J O Manol
(Applicant)

By J O Manol

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

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

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

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

JUL 20 1953

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. King:

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

Enclosed are copies of memoranda from Mr. H. D. Keiser, dated June 30, 1953, and Mr. A. P. Butler, Jr., dated July 8, 1953, outlining recommendations that should be considered by the Field Team in their study of the subject exploration proposal.

Please note that the areasA and C, shown on the project drill maps, are not included under "3. Applicant's Property Rights" in the MF-103 forms submitted by the Applicant. Area C (N.W.$\frac{1}{4}$ of S.W.$\frac{1}{4}$ of Sec. 30) has also been omitted in the "Operating Agreement" attached to the subject application.

If your office recommends that a contract be executed for this project, will you kindly have the Applicant submit the correct description of all boundaries of the areas subject to the proposed contract, and also seven copies of "Owner's Consent to Lien" on this land.

The present ore production area of the Manol Mine is so close to the proposed exploration area that some difficulty may be encountered in the administration of ore sales from the individual areas. If the Operator is not willing to include the whole Manol Mine area as subject to royalty payment in the event a discovery is made during the proposed exploration program, a definite arrangement should be made with the Operator in regard to the control of sales of ore that may result from the proposed drilling.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

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

June 30, 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: DMEA Docket 3089, F. O. Manol, P. O. Box 246, Grants, New Mexico.

I have reviewed the application included in the subject docket and discussed it with Andrew Brown, Acting Geological Survey Member, and Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that the application be sent to the Field Team for investigation and report, and that the Field Team be requested to discuss the application with representatives of the Atomic Energy Commission at Grants, New Mexico.

Signed

H. D. Keiser

Attachment

DEPARTMENT OF THE INTERIOR
Bureau of Mines
RECEIVED
JUL 13 1953

IN REPLY REFER TO:

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

Wm. Ellis, DMEA Member
Uranium Commodity Committee
Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

July 8, 1953

Application, DMEA Docket 3089 (uranium) F. O. Manol, applicant, Grants N. Mex., 3 Parts NE 1/4 and SE 1/4 Sec. 30. T. 13 N., R. 9 W., McKinley Co., New Mexico.

The application for Government assistance to explore the property identified in the subject above has been reviewed and discussed with H. D. Keiser, Bureau of Mines Member, Uranium Commodity Committee, and J. O. Hosted, Atomic Energy Commission.

Proposal

The applicant proposes to explore parts of the NE 1/4 and SE 1/4 section 30, T. 13 N. R. 9 W. by about 83,000 feet of rotary air drilling in about 840 holes spaced from 25 to 200 feet apart. Applicants estimate of cost is $79,819.40.

Comment

No information pertinent to the applicant's property or vicinity is currently available in this office. Information furnished by the applicant indicates that much of the area of his property is underlain by the Todilto limestone which is the host rock for many of the uranium deposits in this general area. The application also states that at least 5,400 tons of ore assaying at least 0.20 percent U_3O_8 have been produced from parts of his property, and that radioactivity logging suggests the presence of more than 0.1 percent uranium in one of three test holes drilled for geologic information in one of the areas where exploration is proposed. He also reports that uranium ore is present on adjoining land.

Although the general setting appears favorable for discovery of additional ore by exploration, sufficient information to appraise the selection of areas or the amount, detail and kind of exploration are not given in the application. Suitable evaluation can be made only as the result of inspection by the Field Team and consultation with the staff of the Grants sub-office, Atomic Energy Commission who have studied the geology and ore deposits of the general area and are familar with the distribution and habits of the ore deposits and with methods of exploring for them.

It should be noted that the applicant's map of exploration area "A" shows it to be in the N 1/2 SE 1/4 Sec. 30, whereas item 3 form MF-103 refers to land in the S 1/2 NE 1/4 Sec. 30.

The applicant proposes to collect cuttings for analysis only in his third stage or detailed holes. Favorability of more widely spaced holes, which would provide the basis for determining where the more closely spaced holes should be placed, would be based solely on interpretation of the results of logging the holes for radioactivity by the Atomic Energy

Commission. This method of estimating presence of uranium minerals and the favorability of the hole should be deemed acceptable only if the Atomic Energy Commission staff consider it a sound method of planning other holes and interpret the results of the logging in such a way as to provide a sound basis for judging the degree of favorability indicated by the logging.

Recommendations

I recommend that this application be referred to the Field Team for their consideration and recommendations concerning its appropriateness and the amount of and detail of exploration that might be desirable.

It is suggested that the examining members of the Field Team consult fully with the staff of the Grants sub-office Atomic Energy Commission to obtain the benefit of the information and suggestions which that staff may supply on all aspects of the application. Such consultation also should include obtaining recommendations by the AEC staff concerning the desirability of substituting radioactivity logging for collection of samples in the more widely spaced holes and ascertaining the feasibility of AEC doing the logging. If radioactivity logging is deemed to be a sound alternative, agreement should be reached with the AEC, whereby the AEC will supply interpretation of the results of the logging in such a manner that the interpretation will provide a suitable basis for evaluating the appropriateness of additional holes to be drilled as offsets to a hole that has been logged for radioactivity.

Copy to E. Wm. Ellis (2)

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

Mining Division
Date Rec'd
JUL 22 1953
BUREAU OF MINES
Denver, Colorado

JUL 20 1953

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. Manol:

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

Mr. W. H. King
Executive Officer
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,

FRANK E. JOHNSON
ACTING Administrator

FMMurphy/db
7/16/53
cc to: Adm. Reading File
Docket
Messrs: H.D.Keiser, Rm.3641
A.P.Butler, Jr., RM.3206, GSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

SUPPLEMENT TO INSTRUCTION NUMBER 1
of DMEA Form MF-103

Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol------P.O. Box 113-------Aztec, New Mexico		1/6
Robert B. McNeely--337 S. Terrace Dr.--Wichita, Kansas		1/12
Joy C. McNeely-----337 S. Terrace Dr.--Wichita, Kansas		1/12
John S. McNeely----5546 Merrimac-------Dallas, Texas		1/12
Flo S. McNeely-----5546 Merrimac-------Dallas, Texas		1/12
G. E. Ponder-------3136 Stanford-------Dallas, Texas		1/12
Edna F. Ponder-----3136 Stanford-------Dallas, Texas		1/12
Tom Harley, Jr.----Fourth Nat. Bank Bldg.--Wichita, Kan.		1/6
Grady B. Coan----------Aztec, New Mexico		1/30
Thomas A. King********----------Aztec, New Mexico		1/30
L. G. and/or Evalyn Stearns----------Aztec, New Mexico		1/30
E. A. Anderson----5860 Layor Drive----Cleveland 29, Ohio		1/60
E. J. Hakulinen---4805 S. Michigan----South Bend, Ind.		1/60
O. H. Armstrong---Box 6----------Bismarck, N.D.		1/75
D. R. Dobyns------731 S. Delaware-----Irving, Texas		1/75
H. V. Copeland----------Aztec, New Mexico		1/150

Submitted by: F. O. Manol
Box 246
Grants, New Mexico

F. O. Manol
Box # 246
Grants, N.M.

OPERATING AGREEMENT

THIS AGREEMENT, made and entered into this 1st day of July, 1952, by and between ROBERT B. McNEELY, JOY C. McNEELY, TOM HARLEY, JR., all of Wichita, Kansas; G. E. PONDER, EDNA F. PONDER, JOHN J. McNEELY, FLO S. McNEELY, all of Dallas, Texas; JAMES S. COAK, L. S. STEADE, THOMAS A. KING, M. V. COPELAND, all of Aztec, New Mexico; ELMER A. ANDERSON of Cleveland, Ohio; ELMER J. HASULIEWEN of South Bend, Indiana; D. RAY DOBYNS of Irving, Texas; and ORVEN M. ARMSTRONG of Port Arthur, Texas, Parties of the First Part, and F. O. MANOL, Party of the Second Part.

WITNESSETH:

WHEREAS, all of the parties hereto are the owners of a certain mineral lease covering the following described real estate, to wit:

> The North Half of the Southeast Quarter (N½ SE¼) and the South Half of the Northeast Quarter (S½ NE¼) and Lots Three (3) and Four (4) and the East Half of the Southwest Quarter (E½ SW¼) of Section Thirty (30), Township Thirteen (13) North of Range Nine (9) West of the New Mexico Meridian, McKinely County, New Mexico,

and

WHEREAS, it is necessary to have someone operate and manage said lease and supervise the mining of uranium ore therefrom, and

WHEREAS, said Parties of the First Part desire to have said Party of the Second Part operate and manage said lease and supervise the mining of uranium ore therefrom and which duties said Party of the Second Part is willing to assume until such time as another person can be obtained, subject to the terms and conditions hereinafter set out.

IT IS NOW, THEREFORE, MUTUALLY CONSIDERED AND AGREED THAT in consideration of the terms, covenants, and conditions hereinafter set forth, said Party of the Second Part shall have the operation, management and supervision of said lease for the mining and production of uranium and other minerals that might

be found and that said lease and mining shall be operated and conducted as hereinafter set forth.

FIRST: That Parties of the First Part, and each of them, individually, do hereby authorize and empower said Party of the Second Part to make any application or agreement with the Atomic Energy Commission, any other branch of the Federal Government, the Anaconda Mining Company or any other purchaser of uranium ore designated by the Atomic Energy Commission relative to the mining and sale of uranium ore as may be required by the Atomic Energy Commission; to receive and receipt for any and all moneys received from the production and sale of ore from said afore-described property. Any moneys so received shall be deposited in a bank located in the State of New Mexico to be selected by said Party of the Second Part to the account of said Party of the Second Part and said Robert S. McNeely.

SECOND: That the parties hereto will leave on deposit in said bank account a sum of money to be later agreed upon by the parties hereto.

THIRD: That said Party of the Second Part and said Robert S. McNeely will each furnish a surety bond in a recognized surety company authorized to do business in the State of New Mexico in the amount of Five Thousand Dollars ($5,000.00) upon the conditions that said Party of the Second Part or said Robert S. McNeely will not embezzle, misappropriate, steal or take any of the moneys received from the sale of ore from the afore-described lease or from the aforesaid bank account; that the premiums to be paid on said bonds shall be paid out of the aforesaid bank account and charged to expense.

FOURTH: Said Party of the Second Part shall hire and employ all persons that may be deemed necessary to mine and operate such lease and contract for the hauling to the mill of any ore that may be mined or produced; it being expressly understood and agreed that said Party of the Second Part shall incur no expense in an amount in excess of Five Hundred Dollars

($500.00) except by consent of the Parties of the First Part.

FIFTH: That said Party of the Second Part shall obtain and keep any and all types of insurance that may be necessary to protect the parties hereto in the mining and operating of said lease and pay all taxes which may be assessed upon said lease and any equipment that may be purchased to operate the same.

SIXTH: Said Party of the Second Part in consideration of his management and supervision of said lease and mining operations shall receive the sum of Forty Dollars ($40.00) per day for each day spent in managing and supervising said lease, which sum shall be charged to the mining and operation of said lease and shall be payable on the first day of the next month following the performance of such services.

SEVENTH: That said Party of the Second Part will keep a true and correct record of all moneys received from the sale of ore and bonuses received from the United States Government and all expenses which may be incurred in the mining and operation of said lease and will mail to each of said Parties of the First Part an itemized statement of such receipts and expenditures on or before the 15th day of each month and said records of said Party of the Second Part shall be open to inspection to each of said Parties of the First Part during the regular business hours.

EIGHTH: That after minerals are being produced and sold from said lease and money has accumulated in said bank account in excess of the amount to remain there, such excess shall be distributed and paid to the Parties hereto according to their interest in said lease on or before the 20th day of each month.

NINTH: Said Party of the Second Part shall promptly pay the royalty due on said lease and assignment thereof as soon as he receives any money from the sale of any ore produced from said lease and charge the same to expense.

TENTH: That each of the parties now is and shall continue to be the sole owner of his or her proportionate share of the production. That said Party of the Second Part shall market the production from the above-described leased premises for the respective parties but this authority shall be terminable at any time and without notice. And provided further that, at any time, each of the parties hereto shall be entitled to designate the purchaser of his or her share of said production, or to take delivery thereof in kind, upon furnishing the necessary receiving facilities.

ELEVENTH: It is further understood and agreed between the parties hereto that, in the event said Party of the Second Part, or any other of the parties hereto who may be operating the above described mining lease, shall sell his or her interest in said mining lease, then the right of operation shall not pass to the assignees or grantees of said interest, but shall revert to the remaining parties to this agreement, who shall then be entitled to assume the operation of the hereinbefore described mining lease.

TWELFTH: This agreement shall extend to and be binding upon the parties, their heirs, executors, administrators, legatees, assigns, and successors in interest.

IN WITNESS THEREOF, we have hereunto set our hands the day and year first above written.

Robert B. McNeely

Joy C. McNeely

Tom Marley, Jr.

O. K. Ponder

Edna F. Ponder

John S. McNeely

Ila S. McNeely

Judy B. Coan

L. J. Stearns

Thomas A. King

H. V. Copeland

Elmer A. Anderson

Elmer J. Hakulinen

D. Ray Dobyns

Orven J. Armstrong

PARTIES OF THE FIRST PART

F. O. Manol

PARTY OF THE SECOND PART

SUPPLEMENT TO INSTRUCTION NUMBER 4
of DMEA Form MF-103

4a No mining activity or exploration has yet taken place on the land covered by this application. However, the applicant has conducted a successful strip mining operation on contiguous property in the same Section of land. This mining operation will be more fully described in another part of this folio.

4b Not applicable.

4c The property to be explored is a colluvial covered dip slope bench of the Todilto limestone of upper Jurassic age. Uranium minerals found in the Todilto are tyuymanite, uranophane, and small amounts of pitchblende. The minerals have been deposited along fractures, bedding planes, and individualscrystals of calcite. These ores are intimately associated with hematite and psilomelene.

4c The uranium deposits in the Todilto are essentially tabular bedded deposits ranging in thickness up to twelve feet, and in lateral extent to over 100,000 square feet.

4c The attached structure contour map indicating the elevation of the base of the Todilto limestone has been used in calculating drilling depths. The map has been compiled from drill hole information

4c The South Half of the Northeast Quarter of Section 30, Township 13, Range 9 West, part of which land is included in this application, has the Summerville and Bluff sandstones overlaying the ore bearing Todilto limestone. Therefore ore deposits in this area can be mined by underground mining methods. It is expected that the Todilto limestone in this area will be found in its original full thickness of 20 plus feet.

4c Lot 3 of the Southwest Quarter, and the North Half of the East Half of the Southwest Quarter; both in Section 30, Township 13, Range 9 West, and which land is included in this application, presents a complexity of geologic conditions:

The northeast part of this land has sandstone overlaying the Todilto limestone. Ore bodies therefore can be mined by underground methods where this condition applies.

A broad belt extending diagonally through this land from the northwest corner to the southeast corner need not be explored because it can not be economically mined by either open pit or underground methods. In this area the Todilto limestone is covered by only blowsand which is in excessive depths, more than 30 feet, for feasible mining conditions.

The southwest part of this land should be explored because it can be mined by open pit methods. The blowsand overburden is less than 30 feet thick in this area.

An exact delineation of these three areas has not yet been determined.

J O Manel
Box 246
Grants, N M

SUPPLEMENT TO INSTRUCTION NUMBER 4
of DMEA Form MF-103

4c We believe the land covered by this application merits exploration for uranium ores for the following reasons;

Adjoining sections of land on the north, west, and south all have substantial known ore reserves. In other words our land is right in the middle of a proven ore belt.

We have already mined more than 5,400 tons of ore assaying more than .20% U308 out of the subject section of land. We have explored about 50 acres in this section at our own expense. All of this has been done in Lot 4 of the Southwest Quarter, and the South Half of the East Half of the Southwest Quarter.

Unfortunately this part of our lease has had most of the Todilto formation eroded away and consequently we have not proven large ore reserves. Our exploration has led us to believe that the land once probably had substantial amounts of ore prior to erosion.

We drilled three test holes on the South Half of the Northeast Quarter, which land is included in this application, to get structure contour information. These holes were logged by the Grants, N.M. AEC office. One of these holes logged four to five feet of ore grade mineralization. The maximum scintilometer count in this hole reached 17,500. A count of 3,000 is presumed to approximate .10% ore. The maximum count was at a depth of 77 feet.

4d This property is 16 miles north and west of Grants, N.M.. It is 13 miles north off of U.S. Highway 66, is on level ground and is easily accesible. It is 19 miles from the Anaconda Copper Mining Company's uranium ore buying station.

4e All mining needs, equipment, supplies, and manpower are readily available.

J O Manol
Box 246
Grants, N M

SUPPLEMENT TO INSTRUCTION NUMBER 5
of DMEA Form MF-103

5d The writer, F. O. Manol, will supervise the exploration program. He has been in constant contact with this work since operations were started last year in the Grants Mining District.

He has been in charge of a successful mining and development program in the same section of land for which this exploration loan is being sought.

The writer introduced and brought into the area the rotary air drilling unit which now has won the full acceptance of all operators and AEC personnel who are engaged in or are oncerned with lowering the ~~XXXX~~ cost of uranium exploration.

Prior to being in the mining business he worked for many years in management positions in the construction industry and in business for himself. He is thoroughly familiar with and able to provide any form of accountability which the DMEA will require.

Submitted by: F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENT TO INSTRUCTION NUMBER 6
of DMEA Form MF-103

Estimate:

	Quantity		Unit Cost	Total
(a) Independent Contracts				
Drilling Test Holes 0 to 100 ft.	74,267.6	ft.	$.50	$37,133.80
" " " 101 to 200 ft.	8,704.6	ft.	$1.00	8,704.60
Catching Test Hole Cuttings	10,800	ft.	.50	5,400.00
Logging Test Holes by AEC	842	ea.		N.C.
Assaying Cuttings-Chemical	1,728	ea.	7.00	12,096.00
Surveying & Laying-out Grid	Lump Sum			500.00
(b) Labor, Supervision, Consultants				
Superintendent, one	52	wk.	200.00	10,400.00
Laborer, one	52	wk.	50.00	2,600.00
(c) Operating Materials & Supplies				
Gasoline, Oil & Grease	52	wk.	10.00	520.00
Office Supplies	52	wk.	1.00	52.00
(d) Operating Equipment				
1952 Dodge 3/4 Ton Pickup	12	mo.	50.00	600.00
Typewriter	12	mo.		N.C.
Tool Shed	12	mo.		N.C.
Bunk House	12	mo.		N.C.
Geiger Counters	12	mo.		N.C.
Small Tools	12	mo.		N.C.
(e) Rehabilitation & Repairs				None
(f) New Buildings, Improvements, Installations				None
(g) Miscellaneous				
Repairs to Pickup	Lump Sum			100.00
Workmens Comp. Ins.	"	"		190.00
Payroll Taxes	"	"		45.00
School Tax	"	"		1,278.00
Other Miscellaneous	"	"		200.00
(h) Contingencies				None
Total estimate				$79,819.40

Special Note: Radiometric and chemical assays in limestone ore run very close toghether. We believe it pointless to run chemical assays in view of this fact, however, the estimate is based on chemical assays. We believe $842 would be sufficient for radiometric assaying purposes. This would result in a considerable saving.

Submitted by: F. O. Manol
Box 246
Grants, New Mexico

Original Copy
Revised app

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

August 31, 1953

Mining Division
Date Rec'd.
SEP 8 - 1953
BUREAU OF MINES
Denver, Colorado
DMEA
3089

Executive Officer
DMEA
224 New Customhouse Building
Denver 2, Colorado

Subject: DMEA-3089

Dear Sir:

Enclosed is our amended application for DMEA assistance in the exploration of a mining lease we have in the Grants, New Mexico Mining District.

We have changed the area to be explored. Changed to a broader starting grid for our drilling program. Eliminated chemical assays. Added radiometric logging by private enterprise. Added radiometric assaying of drill cuttings.

These changes result from the discussions we had at the project site with your field team on Aug. 11.

Inclusions herewith are:

Amended DMEA Form MF-103	4 copies
6 pages supplementing Form MF-103	4 copies
Structure-contour map	4 copies
Manol Operating Agreement	0 copies
Drilling and Logging Bid	4 copies

Kindly remove Manol Operating Agreement from original application which now can be considered superceded, and include same with this amended application.

Very truly yours,

F. O. Manol

F. O. Manol

AMENDED***DMEA '3089'

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. .....
Metal or Mineral .....
Date Received .....
Estimated Cost .....
Participation (Government %) .....

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: F. O. Manol--P.O. Box 246--Grants, New Mexico--Operator and Agent for group venture of persons named in supplement attached hereto.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable

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

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

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

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

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

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

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

(*c*) The work will start within 90 days and be completed within 15 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated ~~August~~ September 2, 1953

F. O. Manol
(Applicant)

By F O Manol

Box 246—Grants, New Mexico

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

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

SUPPLEMENTAL INFORMATION TO FORM MF-103

1a Names and addresses of owners of lease and their proportionXXX of ownership:

F. O. Manol--------P.O. Box 113--------Aztec, New Mexico-----1/6

Robert B. McNeely--337 S. Terrace Dr.--Wichita, Kansas-------1/12

Joy C. McNeely-----337 S. Terrace Dr.--Wichita, Kansas-------1/12

Flo S. McNeely-----5546 Merrimac-------Dallas, Texas---------1/12

John S. McNeely----5546 Merrimac-------Dallas, Texas---------1/12

G. E. Ponder-------3136 Stanford-------Dallas, Texas---------1/12

Edna F. Ponder-----3136 Stanford-------Dallas, Texas---------1/12

Tom Harley, Jr.----Fourth Nat. Bank.Bldg.-Wichita, Kansas----1/6

Grady B. Coan------Box 451----------Aztec, New Mexico-----1/30

Thomas A. King----- Aztec, New Mexico-----1/30

L.G. and/or Evalyn Stearns Aztec, New Mexico-----1/30

E. A. Anderson-----5860 Layor Drive----Cleveland, Ohio-------1/60

E. J. Hakulinen----4805 S. Michigan----South Bend, Ind.------1/60

O. H. Armstrong----Box 6----------Bismarck, N.D.--------1/75

D. R. Dobyns-------731 S. Delaware-----Irving, Texas---------1/75

H. V. Copeland----- Aztec, New Mexico-----1/150

F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENTAL INFORMATION TO FORM MF-103

4a No mining or exploration has been done on the subject land.

However, the applicant has been operating a mine on an eighty acre block of land which is contiguous to the entire south line of the land covered by this application. This block of land, which has been, and is being mined XXXXX, has been explored by the applicant with own funds.

This mine in seven actual working months out of the last two years has produced more than 7,500 tons of ore grossing more than $200,000.00, at a profit of $100,000.00. Approximately 1,500 tons of ore remain to be mined. Larger reserves in this eighty acres are absent for the reason that almost eighty-five percent of the ore bearing Todilto Limestone formation is eroded away.

The subject land is most easily accesible for examination purposes. Starting from Grants, N.M. going 3 miles west on U.S. Highway 66 to a "T" intersection of San Mateo Road going north and right, thence almost 11 miles north on San Mateo Road to a cattle-guard on the west and left, thence 2 miles west on the road going across the cattle-guard. Existing operations then are obvious.

4b Not applicable

4c The property to be explored is a colluvial covered dip slope bench of the Todilto Limestone formation of upper Jurassic age. Uranium minerals found in the Todilto are tyuymanite, uranophane, and small amounts of pitchblende. The minerals have been deposited along fractures, bedding planes, and individual crystals of calcite. These ores are intimately associated with hematite and psilomelene.

The uranium deposits in the Todilto Limestone are essentially tabular bedded deposits ranging in thickness up to thirteen feet, and in lateral XXXX extent to over 100,000 square feet. twenty-one

We believe the land covered by this application merits exploration for uranium ores for the reason that adjoining sections of land on the north, west, and south all have substantial known ore reserves. In other words the land covered by this application is in the middle of a proven ore belt.

Also, exploration conditions are simple and easy. The terrain is very level making it possible to bring in anywhere, and to move easily anywhere, mobile drilling equipment. The ore horizon is uniform and well defined. Drilling depths are not excessive.

4d Accessibility of the project is excellent. Access roads are good. Distance to the Anaconda Copper Mining Co. buying station at Bluewater, New Mexico is only 19 miles. Supply points are good. Residence points are XXXX fair.

4e Manpower, materials, supplies, equipment, water, and power are all abundant.

F. O. Manol
Box 246
Grants, N.M.

SUPPLEMENTAL INFORMATION TO FORM MF-103

5b The attached structure-contour map defines the 80 acre block of land we propose to explore with the EMEA loan we are applying for herewith. Our primary drilling grid is plotted on the map, and drilling depths are shown immediately beneath the drilling locations. Depths are carried five feet below the ore bearing Todilto Limestone formation to take care of minor cave-ins that we have found by experience to occur occasionally before the holes can be logged.

All proposed exploratory drilling will be done with a Failing 1500 Rotary Rig, drilled dry, compressed air being the medium of circulation. The applicant introduced this superior low cost method of exploratory drilling to the Grants Mining District.

As the result of our previous exploration experience in this very same Section of land we know we are going to encounter several different geologic conditions in this project. In the southwesterly corner the ore bearing Todilto Limestone formation will be relatively shallow with only blowsand above it. Border line test holes on the west and south, drilled by Santa Fe Railroad Company and by ourselves, indicate a substantial presence of the Todilto Limestone. Ore bodies discovered in this area can be mined by open pit methods.

In the middle of the land covered by this application, in an undefined belt, presumed at this time to extend in a diagonal northwest-southeast direction, we are anticipating a considerable amount of local erosion channels in which the ore bearing limestone formation is partly or even completely removed. Drilling depths will average about 100 feet. Only blowsand will cover the orebodies discovered in this area. Adverse conditions to mining feasibility in this area may preclude any intensive drilling even if ore is located with the primary grid. This determination will have to be made if and when the problem arises.

In the northeasterly part of the land covered by this application we can expect full sections of the ore bearing limestone capped by the Summerville Sandstone. Drilling depths will be the deepest in this area, but mining feasibility by underground methods is assured by the fact that the Summerville Sandstone overlays the ore bearing limestone providing a ceiling which can be economically cribbed.

In view of the complexity of geologic conditions we know we can anticipate, we plan to drill first on a broad 200 foot grid to eliminate unfavorable ground immediately from further consideration.

The 200 foot grid will be our basic grid, excepting in areas with drilling depths of 65 feet or less in which the 100 foot grid will be our basic grid. All off-set holes to our basic grids will be predicated on a show of abnormal radio-activity. Our drilling patterns will be systematically shortened as necessary using 100 foot, 50 foot, and 25 foot grids in suspect areas. The 25 foot grid will be used to outline and evaluate ore bodies.

On the basis of what is know about the surrounding area it is possible that as much as 20% of the area to be explored hereunder will show varying degrees of mineralization requiring intensive exploration.

F. O. Manol
Bos 246
Grants, N.M.

SUPPLEMENTAL INFORMATION TO FORM MF-103

5b All holes will be logged by a mobile radiometric logging unit and a permanent record of the intensity of the gamma radiation for every inch of every hole will be procured and kept in our files. This very sensitive instrument greatly increases chances for discoveries and simultaneously cuts uranium exploration costs tremendously by eliminating the need for core drilling, and much of the catching of drill cuttings for assay purposes. The instrument enables the project supervisor to decide immediately where to drill off-set holes. No waiting for assays is necessary.

Only on the final 25 foot grid will we catch cuttings. This will be done every two feet while in the ore bearing limestone formation. These will be sacked and cataloged, and field checked with a good sensitive Geiger Counter. Those samples of cuttings which show uranium mineralization approaching ore grade of better will be carefully assayed by radiometric methods and a systematic permanent record of them will be kept. This information will then be used to evaluate any ore bodies discovered.

We are satisfied by our past experiences that radiometric assays of ore in the Todilto Limestone formation are in equilibrium with chemical assays. Therefore no costly chemical assays are contemplated.

5d The writer, F. O. Manol, will supervise the exploration program. He has managed the mining and exploration of contiguous property for the past two years. His record has been one of the most successful in the Grants Mining Dristrict.

The writer is also a partner in the Four Corners Exploration Company, Box 101, Grants, New Mexico. His partner and associate in that venture is Irving Rapaport of Grants, New Mexico, a Geologic Engineer formerly employed in technical and supervisory capacity by the Atomic Energy Commission.

Prior to being in the mining business the writer was Chief Accountant and Office Manager for the H. K. Ferguson Company of Cleveland, Ohio in the construction industry. 1940 to 1946. During this time he was Project Auditor on multi-million dollar government contracts. Subsequently to 1952 he was successfully in business for himself. He sold out his partnership interest in the Home Furnishings Company of Aztec, New Mexico in 1952 to devote his full time to mining.

The writer is thoroughly familiar with and able to provide any form of accountability which the DMEA may require.

F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENT TO INSTRUCTION NUMBER 6
of DMEA Form MF-103

Estimate:

(a) Independent Contracts	Quantity	Unit Cost	Total
Drilling Test Holes 0 to 100 ft.	65,448 ft.	$.50	$32,724.00
Drilling Test Holes 101 to 200 ft.	6,912 ft.	1.00	6,912.00
Blowing & Catching Drill Hole Cuttings for Assay Purposes	13,950 ft.	.50	6,975.00
Radiometric Log of Test Holes	45,000 ft.	.15	6,750.00
Radiometric Scan of Test Holes	27,360 ft.	.07	1,915.20
Radiometric Assay of Cuttings, this includes collecting, mixing, pulverizing, and assaying.	3,987 ea.	1.00	3,987.00
Contingencies	Lump Sum		2,000.00
Supervision, Geologic Consultation, Mine Evaluation, Surveying and Laying-out Grids, Accounting, and equipment and supplies, etc. incidental to these services.	72,360 ft.	.15	10,854.00
			72,117.20
New Mexico School Tax 2%			1,442.34
Total Maximum Cost of Project			$73,559.54

Please note entire project is on contract and all costs are based on amount of work performed on unit cost basis. This makes for a simple determination of costs no matter what quantities of work have been performed when project is completed.

This is a maximum estimate based on very favorable results in our primary and secondary drilling. It is very likely that we will not need the total amount of money in this estimate. Yet we must be prepared to carry out a sound program to its proper conclusion should substantial discoveries be made.

F. O. Manol
Box 246
Grants, N.M.

DRILLING COMPUTATIONS

(1) Total area to be drilled is 1320' x 2640', or total of 3,484,800 square feet.

(2) All holes are carried 5 feet below ore bearing Todilto Limestone formation. Average depth of holes as determined with attached structure-contour map is 80.4 feet.

(3) Primary grid is on 200' centers, each hole serving 40,000 square feet of area.
Secondary " " " 100' " , " " " 10,000 " " " " .
Third " " " 50' " , " " " 2,500 " " " " .
Final " " " 25' " , " " " 625 " " " " .

(4) 30% of area (1,045.440 SF) it is estimated will have to be drilled on 200' grid only.
50% of area (1,742,400 SF) it is estimated will have to be drilled on 100' grid before it can be eliminated from further consideration.
10% of area (348,480 SF) it is estimated will have to be drilled on 50' grid before it can be eliminated from further consideration. This grid will be used on highly suspect areas.
10% of area (348,480 SF) it is estimated will have to be drilled on 25' grid. This grid is for detailing and evaluating ore bodies.

(5) 1,045,440 SF divided by 40,000 SF equals 27 holes.
1,742,400 SF " " 10,000 SF " 175 " .
348,480 SF " " 2,500 SF " 140 " .
348,480 SF " " 625 SF " 558 " .

(6) Maximum total number of holes contemplated in this drilling program is 900. If the primary and secondary grids failed to produce highly suspect areas a maximum of 202 holes would be drilled. The actual figure will be somewhere between 202 and 900 depending on the amount of success in locating ore bodies.

(7) 32% of holes (288) will be more than 100' deep averaging 124'. These figures are developed for calculating drilling costs on holes having a depth of more than 100'. These figures are calculated from the attached structure-contour map.

(8)

Total drilling footage 100' deep or less	65,448'	@ $ .50 per foot	$32,724.00
" " " 101' " " plus	6,912'	@ $1.00 per foot	6,912.00
Total maximum drilling footage and cost	72,360'		$39,636.00

(9) Catching cuttings for assay purposes. This will be done on final holes only. 558 holes for 25' in each hole. Total 13,950' @ $.50 per foot $ 6,975.00

TOTAL MAXIMUM DRILLING COSTS INCLUDING CATCHING OF CUTTINGS FOR ASSAY PURPOSES $46,611.00

F. O. Manol
Box 246
Grants, N.M.

UTAH | COLORADO
ARIZONA | NEW MEXICO

Four Corners Exploration Company

P. O. BOX 101 GRANTS, NEW MEXICO

IRVING RAPAPORT
F. O. MANOL

August 31, 1953

F. O. Manol and Associates
Box 246
Grants, New Mexico

Gentlemen:

Below are our prices to your organization for drilling services, supervisory and geologic services, radiometric logging services, and radiometric assay services as per your request.

Drilling:

1st 100 feet or any part thereof	$.50 per ft.
2nd 100 feet or any part thereof	1.00 per ft.

Blowing hole clean and catching cuttings every two feet. $.50 per foot extra over regular prices.

No charge for standby time on your work.

Radiometric Logging:

Logging hole furnishing original copy of log to you. $.15 per foot.

Scanning holes with logging unit but no transcript furnished. $.07 per foot.

With this service you can log just the suspected ore zones and scan for unexpected mineralization in other zones of the drill holes. Substantial savings can be effected in this manner.

Radiometric Assaying:

Collecting, mixing, pulverizing, sacking, assaying drill hole cuttings. $1.00 each.

Supervision:

Supervision, geologic consultation, mine evaluation, surveying and laying-out grids, accounting, and equipment and supplies, etc. incidental to these services. $.15 per foot.

We believe we are the only organization in the uranium exploration business providing a complete package deal exploration service combining all necessary services into one easy to administer contract.

Very truly yours,

Irving Rapaport

DRILLING COMPUTATIONS

(1) Total area to be drilled is 1320' x 2640', or total of 3,484,800 square feet.

(2) All holes are carried 5 feet below ore bearing Todilto Limestone formation. Average depth of holes as determined with attached structure-contour map is 20.4 feet.

(3) Primary grid is on 200' centers, each hole serving 40,000 square feet of area.
Secondary " " " 100' " , " " " 10,000 " " " " .
Third " " " 50' " , " " " 2,500 " " " " .
Final " " " 25' " , " " " 625 " " " " .

(4) 30% of area (1,045.440 SF) it is estimated will have to be drilled on 200' grid only.
50% of area (1,742,400 SF) it is estimated will have to be drilled on 100' grid before it can be eliminated from further consideration.
10% of area (348,480 SF) it is estimated will have to be drilled on 50' grid before it can be eliminated from further consideration. This grid will be used on highly suspect areas.
10% of area (348,480 SF) it is estimated will have to be drilled on 25' grid. This grid is for detailing and evaluating ore bodies.

(5) 1,045,440 SF divided by 40,000 SF equals 27 holes.
1,742,400 SF " " 10,000 SF " 175 " .
348,480 SF " " 2,500 SF " 140 " .
348,480 SF " " 625 SF " 558 " .

(6) Maximum total number of holes contemplated in this drilling program is 900. If the primary and secondary grids failed to produce highly suspect areas a maximum of 202 holes would be drilled. The actual figure will be somewhere between 202 and 900 depending on the amount of success in locating ore bodies.

(7) 32% of holes (288) will be more than 100' deep averaging 124'. These figures are developed for calculating drilling costs on holes having a depth of more than 100'. These figures are calculated from the attached structure-contour map.

(8)

Total drilling footage 100' deep or less	65,448'	@ $ .50 per foot	$32,724.00
" " " 101' " " plus	6,912'	@ $1.00 per foot	6,912.00
Total maximum drilling footage and cost	72,360'		$39,636.00

(9) Catching cuttings for assay purposes. This will be done on final holes only. 558 holes for 25' in each hole. Total 13,950' @ $.50 per foot $ 6,975.00

TOTAL MAXIMUM DRILLING COSTS INCLUDING CATCHING OF CUTTINGS FOR ASSAY PURPOSES $46,611.00

F. O. Manol
Box 246
Grants, N.M.

608 = 78 X 78

4680 = 60 X 78

7176 = 92 X 78

17940 = 230 holes avg depth to base of Todilto 78'

17,160 = 230 holes avg. depth to base of Todilto 74.60 ft.

Examiner estimates average depth of hole 74.6 ft. rotary air drilling

Samples will be collected and preserved in 2-foot runs throughout the entire thick. of the Todil. Radiometric logging of the hole and/or radiom scanning of samples will be used to select the samples to be assayed chem. for U_3O_8. All potentially ore grade samples will be assayed.

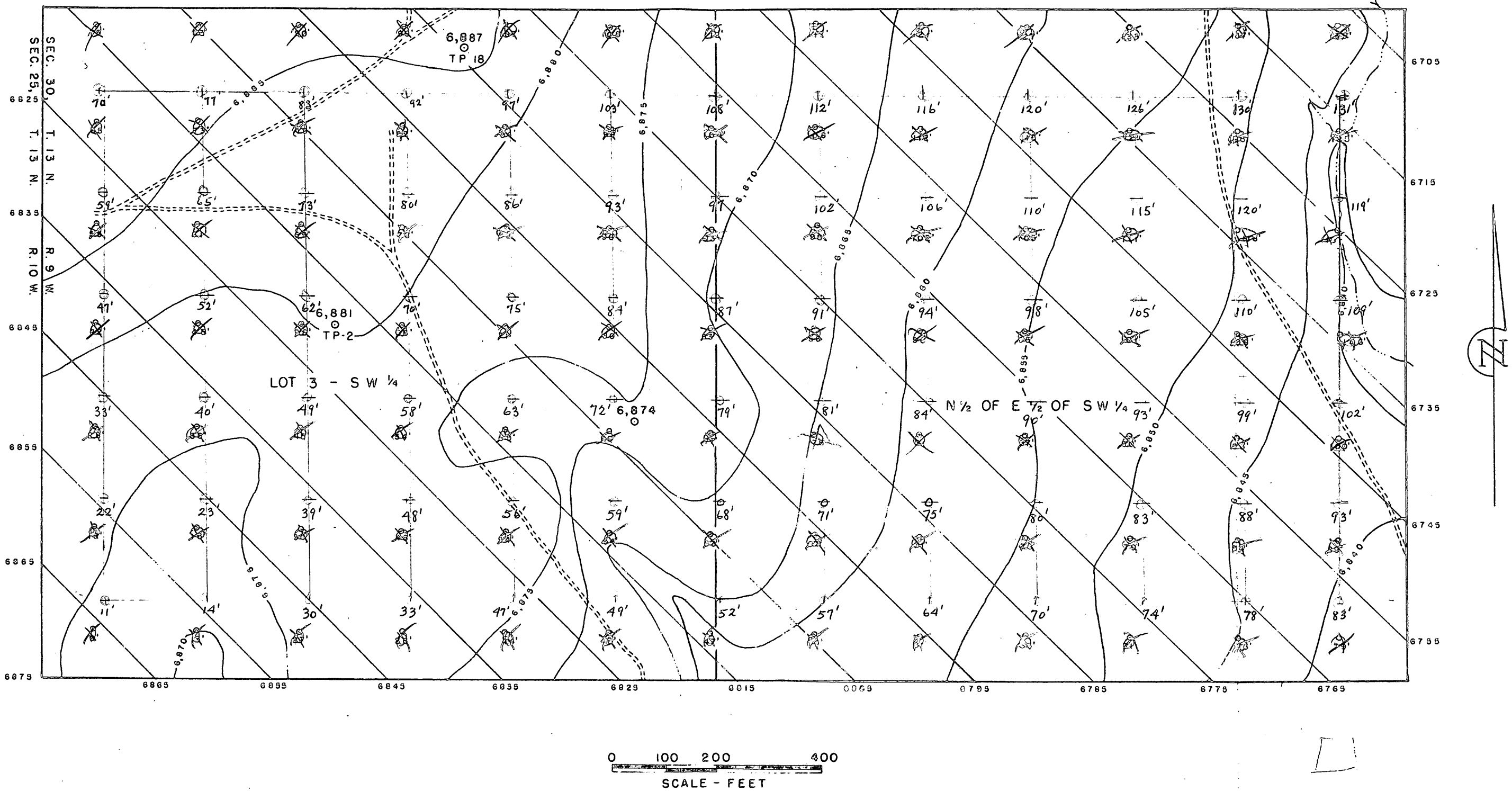
All holes to be drilled 5 ft. below the base of the Tod Ls to prevent caving and covering the lower part of the Ls in the hole.

3089

Letter from Op. Com. 11-27-53

Does Field Team want to reverse their recommendation to deny 3190 and offer to drill 162 holes (11,500 feet) at a cost of $10,000?

According to letter from Op. Com. dated Dec 14 our memo to them dated Dec. 2 is in error also our letter to Manol.



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT. 1953

DMEA 3089

Tracing of this map sent to Traver 1-7-54 RJMC

FIGURE 3. - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING, WITH DEPTH OF HOLE ~~TO BASE OF LIMESTONE~~) ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTON

F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

6 ¤
6 ¤

¤
¤

.70
.77
.83
.92
.97
1.03
1.08
1.12
1.16
1.20
1.26
1.30
1.31
.59
.65
.73
.80
.86
.93
.97
1.02
1.06
1.10
1.15
1.20
1.19
.47
.52
.62
.70
.75
.84
.87
.91
.87
.91
.94
.98
1.05
1.10
1.09
.33
.40
.49
.58
.63
.72
.79
.81
.84
.90
.93
.99
1.02
.22
.23
.39
.48
.56
.59
.68
.71
.75
.80
.83
.88
.93
.11
.14
.30
.33
.47
.49
.52
.57
.64
.70
.74
.78
.83

60.84
60.84 ¤
¤

MINING DIVISION
REGION IV

September 25, 1953

Air Mail

Memorandum

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

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Report on Docket MMA-3089, F. C. Manol's Uranium Property, McKinley County, N. Mex.

Enclosed are original and 9 copies of a report on the above property by L. L. Farnham of the Bureau of Mines. One copy was sent to Dick Fischer and he will send it on to you. A separate section on Geology will be submitted by J. P. Strobell of the Geological Survey.

As the chance of discovering a substantial quantity of uranium ore by drilling from the surface seems good, the examiner has recommended that an exploration loan be granted the applicant. I concur with this recommendation.

The original brochure is enclosed. The amended application has been sent to the Geological Survey at Grand Junction, Colo.

Walter R. Storms

Walter R. Storms

cc W. H. King (10)
R. P. Fischer
MMA-3089
WF

WRSTORMS:frj

EXTRA COPY

AMA-3089, F. O. MANEL'S GRANITE PROPERTY
MCKINLEY COUNTY, N. MEX.

Engineering Report

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

September 1953

DMA-3089, F. O. HAROL'S URANIUM PROPERTY
MCKINLEY COUNTY, NEW MEXICO

CONTENTS

Engineering report	Page
Introduction	1
Acknowledgments	1
Location and physical features	1
History and production	2
Ownership and extent	2
Description of the deposits	3
Proposed exploration	4
Sampling	9
Estimated cost of project	9
Proposed financing	10
Conclusions and recommendations	11

ILLUSTRATIONS

Figure		Following page
1	Location map	1
2	Adjacent ore bodies	2
3	Topographic and structural contour map	2

INTRODUCTION

Late in July 1953, F. O. Manol applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for an exploration loan amounting to $79,819.40. The application was docketed as DMEA-3089. The funds requested were for the purpose of exploring portions of a 160-acre tract for uranium by means of some 83,000 feet of rotary air drilling. The property was visited by the examiners[1/] on August 11, 1953. Early in September 1953, the applicant revised the original application in which he requested $73,559.54 for the purpose of exploring an 80-acre tract with 900 holes, totaling 72,300 feet of drilling.

ACKNOWLEDGMENTS

Special thanks are due Paul E. Melancon, supervising geologist of the Atomic Energy Commission of Grants, N. Mex., for his cooperation in supplying the examiners with much needed information.

LOCATION AND PHYSICAL FEATURES

The F. O. Manol property is situated about 16 miles northeast of Grants, N. Mex. in the SW¼ of Sec. 30, T. 13 N., R. 9 W., McKinley County, N. Mex. It can be reached from Grants by traveling west on U. S. Highway 66 for 3.2 miles, thence northward on State Highway 53 for 10.8 miles to a branch road running westward. The area proposed for exploration then can be reached by traveling for 1.3 miles westward on this branch road (figure 1).

1/ Farnham, L. L., U. S. Bureau of Mines;
Strobell, J. D., U. S. Geological Survey.

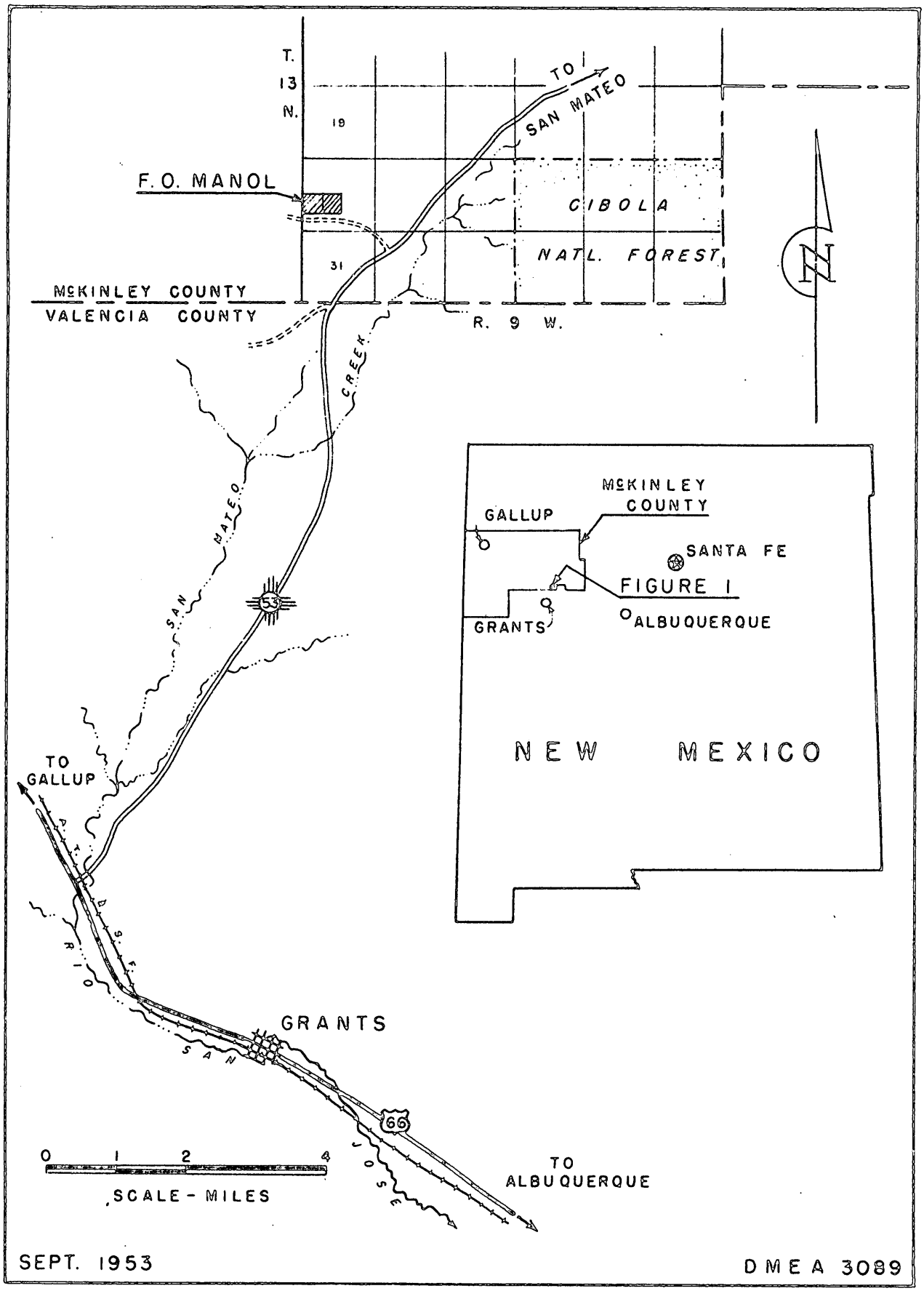


FIGURE 1. - LOCATION MAP - F. O. MANOL LEASE
McKINLEY COUNTY, NEW MEXICO

The project area, covering about 80 acres, lies within a gentle sloping alluvium-covered valley. Altitude above sea level ranges from a maximum of 6,890 feet in the southwest corner of the tract to a low of 6,840 feet on its eastern side (figure 3).

HISTORY AND PRODUCTION

The first mining activity in the area was started in 1950 following the initial discovery of uranium ores in the Grants district. The area covered in this application has not been explored and has had no production. The applicant has mined about 7,500 tons of ore, averaging over 0.20 percent U_3O_8, from 3 ore bodies found on a 60-acre tract adjoining the area of the proposed exploration (figure 2).

OWNERSHIP AND INTEREST

The applicant and his partners hold under lease the following acreage:

S½ of NW¼	of Sec. 30,	T. 13 N.,	R. 9 W.
W½ of NE¼	" "	30, T. 13 N.,	R. 9 W.
S½ of SE¼	" "	"	"
Lots 3 and 4 2/	"	"	"

In the revised application, Governmental assistance was requested only for Lot 3 and W½ of the S½ of the SW¼ of Sec. 30.

A copy of the applicant's lease was not submitted with the application and nothing is known concerning the ownership of the land nor the terms of the lease agreement.

2/ These lots comprise the W½ of the SW¼ of Sec. 30.

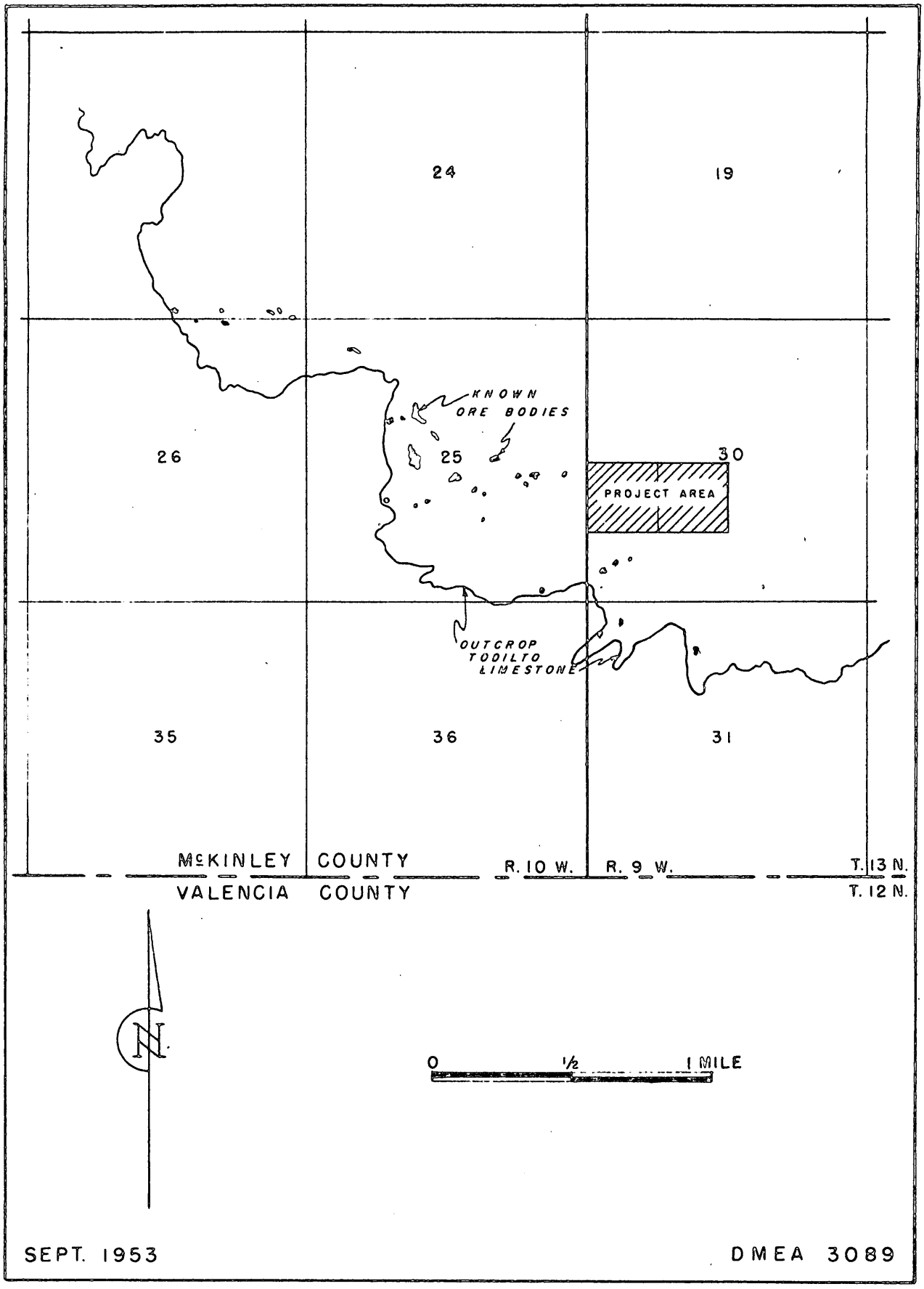


FIGURE 2. - LOCATION OF KNOWN ORE BODIES IN VICINITY OF PROPOSED EXPLORATION (F. O. MANOL)
McKINLEY COUNTY, NEW MEXICO

DESCRIPTION OF THE DEPOSITS

Uranium mineralization in the Grants district occurs in the Todilto limestone and in certain sandstone beds of the Morrison formation. The subject property is underlain by the Todilto limestone which in the area of the proposed drilling is completely covered by 20 to 140 feet of overburden. The productive limestone ranges from 6 to 20 feet in thickness and dips about 4° to the northeast. The ore bodies are irregular tabular masses distributed very erratically within the limestone. They range in thickness from a foot to as much as 14 feet and vary greatly in size, shape and grade.

About 26 separate ore bodies have been found in close proximity to the area proposed for exploration (figure 2). The total ore reserves indicated by these discoveries have been estimated to be of the order of 80,000 tons, or an average of about 3,000 tons per ore body. It was necessary to explore approximately 600 acres in order to outline the 26 ore bodies.

On this basis the 80 acres under consideration could be expected to contain from 3 to 4 ore bodies of 3,000 tons each, or a total of from 10,000 to 12,000 tons of ore. However, because of the great variance in the size of the deposits and their unpredictable distribution, the 80 acres in question could contain much more than 12,000 tons, and likewise could contain very much less.

PROPOSED EXPLORATION

In the revised application it was proposed to confine the work to lot 3 and the adjoining N½ of the S½ of Sec. 30 (figure 3). The proposals, with cost estimates as set forth in the application, are as follows:

SUPPLEMENT TO INSTRUCTION NUMBER 6
of NMA Form MF-103

Estimate:

(a) Independent Contracts	Quantity	Unit Cost	Total
Drilling Test Holes 0 to 100 ft.	68,448 ft.	5.30	$32,724.00
Drilling Test Holes 101 to 200 ft.	6,912 ft.	1.00	6,912.00
Blowing & Catching Drill Hole Cuttings for Assay Purposes	13,950 ft.	.50	6,975.00
Radiometric Log of Test Holes	45,000 ft.	.15	6,750.00
Radiometric Scan of Test Holes	27,300 ft.	.07	1,915.20
Radiometric Assay Cuttings, this includes collecting, mixing, pulverizing, and assaying.	3,987 ea.	1.00	3,987.00
Contingencies	Lump Sum		2,600.00
Supervision, Geologic Consultation, Mine Evaluation, Surveying and Laying-out Grids, Accounting, and equipment and supplies, etc. incidental to these services.	72,360 ft.	.15	10,854.00
			72,117.20
New Mexico School Tax 2%			1,442.34
Total Maximum Cost of Project			$73,559.54

The applicant proposes to have the above drilling performed by the Four Corners Exploration Co. This is a new organization in which the applicant, F. O. Mandl, owns a half interest. The other partner

is a geologist who formerly was employed in the Grant's office of the Atomic Energy Commission. The company has a Failing 1500 Rotary rig and is expecting the delivery of a mobile radiometric hole logging device in the near future.

A copy of the bid for the proposed drilling, submitted by the Four Corners Exploration Co., is given below:

"Utah Colorado
Arizona New Mexico FOUR CORNERS EXPLORATION COMPANY
P. O. Box 101

Irving Rapaport
F. O. Manol

August 31, 1953
Grants, New Mexico

"F. O. Manol and Associates
Box 246
Grants, New Mexico

Gentlemen:

"Below are our prices to your organization for drilling services, supervisory and geologic services, radiometric logging services, and radiometric assay services as per your request.

"Drilling:
1st 100 feet or any part thereof $.50 per ft.
2nd 100 feet or any part thereof 1.00 per ft.

"Blowing hole clean and catching cuttings every two feet. $.50 per foot extra over regular prices.

"No charge for standby time on your work.

"Radiometric Logging:
Logging hole furnishing original copy of log to you. $.15 per foot.

"Scanning holes with logging unit but no transcript furnished. $.07 per foot.

"With this service you can log just the suspected ore zones and scan for unexpected mineralization in other zones of the drill holes. Substantial savings can be effected in this manner.

"Radiometric Assaying:
Collecting, mixing, pulverizing; sacking, assaying drill hole cuttings. $1.00 each.

"Supervision:
Supervision, geologic consultation, mine evaluation, surveying and laying-out grids, accounting, and equipment and supplies, etc. incidental to these services. $.15 per foot.

"We believe we are the only organization in the uranium exploration business providing a complete package deal exploration service combining all necessary services into one easy to administer contract.

"Very truly yours,

/s/ Irving Rapaport
"Irving Rapaport"

The costs per foot of drilling in the above bid are the same as those charged by the W. F. Myers Drilling Co. for similar contract work.

The applicant's project proposals involved the drilling of 900 holes, having an average depth of 80.4, totaling 72,300 feet, and estimated to cost $73,559.54. It appears that the large amount of drilling would not be necessary for the purpose of determining the presence or absence of worthwhile ore bodies within this 80-acre tract.

Based on the experience of other exploratory operations in the district, the examiner recommends the following procedure as an alternative to that proposed by the applicant.

The entire 80 acres should be drilled with holes spaced 200 feet apart. This phase of the program would require 91 holes (figure 3). In all probability this primary stage would eliminate a portion of the area from further consideration. Experience in the district has shown that about 1 out of 6 holes spaced 100 feet apart might indicate sufficient abnormally high radio-activity so as to merit off-set drilling. Based on this ratio, about 30 of these 182 holes would justify off-setting by 4 holes each, spaced 50 feet apart. Thus, this third phase would require an additional 120 holes, and thereby increase the total to 302 holes at this stage of the work. It would seem that an additional 60 holes spaced no closer than 25 feet would be sufficient to outline, for discovery purposes, any ore bodies indicated by the former holes. On this basis, a total of 362 holes would be required. The average depth of these holes as computed by the examiner was 74.6 feet (figure 3). Hence the total for the project would amount to 27,005 feet of drilling. This is only about one-third of the total footage proposed by the applicant. Nevertheless, 362 holes would seem adequate to explore the area to such an

extent as to indicate whether or not significant ore bodies were present. About one half of the holes proposed by the applicant could be considered to be more of the nature of development than of exploration.

SAMPLING

No samples need be collected from the initial 91 holes (spaced 200 feet apart) if they can be logged radiometrically. The balance of the holes (271) should be logged radiometrically and sampled as well. When the holes enter the top of the limestone, the drill cuttings should be blown from the hole at each 2-foot interval and caught in a suitable collector. If the limestone averages 18 feet thick, there would be 9 samples from each hole. These can be scanned with a standardized Geiger Counter and those that appear of ore grade should be retained for further testing. Since most of the ore is seldom more than 6 feet thick, it is probable that not more than 3 samples from each hole would warrant assaying. On this basis there would not be more than 813 samples that would merit assaying.

The applicant proposed assaying the samples radiometrically, rather than chemically. The examiners discussed this matter with the manager of the Anaconda Copper Mining Co. and the chief mining engineer of the Atchison, Topeka & Santa Fe Railroad Co. Both of those gentlemen were of the opinion that radiometric assaying results on the limestone ores would check very closely with the U_3O_8 content

as determined chemically. In view of this information, it appears that for the purposes of exploration, the radiometric assaying of the drill hole samples would be satisfactory and should be adopted in the case of limestone ores. Radiometric assaying is not satisfactory for the sandstone ores of the district.

ESTIMATED COST OF PROJECT

The depth of the proposed holes averaged 74.6 feet which included 5 feet of drilling below the bottom of the limestone. This extra 5 feet of hole would allow space for any caving that might occur before the hole could be logged radiometrically. The data used by the examiner for computing the depth of the holes was based on information furnished by the Atomic Energy Commission.

A summary of the amount of drilling follows:

Stage 1 and 2 -	182 holes @ 74.6 ft.	13,577 feet
Stage 3	120 holes @ 74.6 ft.	8,952 "
Stage 4	60 holes @ 74.6 ft.	4,476
Total	362 holes	27,005 feet

Figure 3 indicates that about two thirds of the holes would be less than 100 feet deep and the balance would exceed 100 feet. Thus the drilling cost under the bid of the Four Corners Exploration Co. would be as follows:

18,000 feet @ $0.50	$9,000
9,000 " @ 1.00	9,000
Catching samples - 4,878 ft. @ $0.50	2,439
Radiometric logs, 27,000 ft. @ $0.10 [3]	2,700
Radiometric assaying, 800 @ $1.00	800
Total cost for 27,000 feet	$23,939
Cost per feet	$0.89

Drilling with this rotary type of equipment, the contractor expects to average between 250 and 300 feet a shift. Thus working 25 shifts a month the work could be completed in about 4.5 months. The other costs of the project based on 4.5 months are given below:

1 Supervisor, 4.5 mos. @ $500	$2,250
1 Sampler, 4.5 mos. @ $300	1,350
Compensation insurance, taxes, etc., 13%	468
Allowance for use of pickup truck @ $60	270
Bookkeeping and office supplies	250
Sample sacks and incidentals	100
	$4,688

Summary of Total Estimated Costs

Contract drilling	$23,939
Supervision and sampling	4,688
Miscellaneous	620
Total for 27,000 feet	$29,627
Total per foot	$1.06

PROPOSED FINANCING

The project as estimated by the writer would cost $29,627 of which the applicant would furnish one tenth, or $2,962.70, and the Government would provide $26,664.30.

The value of the ore produced by the applicant from the tract immediately south of subject area has averaged about $23 a ton. With ore of this value, at 5 percent royalty, the area proposed for

3/ Based on $0.15 a foot for logging and $0.07 a foot for scanning only.

exploration would have to produce some 22,000 tons of ore in order to repay the Government loan. Tonnage of this order is not too far out of line with the potential of the area as judged by the results of former exploration in the vicinity.

CONCLUSIONS AND RECOMMENDATIONS

Important uranium deposits have been found immediately to the south and west of the area which the applicant has proposed for exploration. There is no evident reason why similar deposits are not likely to be found on the subject property. One disadvantageous feature of the area proposed for exploration is the amount of cover overlying the productive limestone bed. Over a large portion of this tract, the overburden may be of such thickness as to preclude open pit mining. In such cases much more costly underground methods would be necessary which could result in making some of the smaller or lower grade bodies noneconomic.

The applicant, who will no doubt supervise the operation, has had 2 years of experience in the exploration and mining of uranium ores in the Grants district. If the contract drilling is performed by the Four Corners Exploration Co., Irving Rapaport will supervise the drilling and attend to the technical features of the project. Both Hanel and Rapaport are considered to be competent in their respective capacities. The fact that the applicant will be financially interested in the drilling contract may have certain

disadvantages as well as advantages.

As there appears to be a reasonable chance of finding ore on the subject property, it is recommended that a loan amounting to $28,627 be approved. A short form contract is suggested specifying a maximum of 27,000 feet of drilling at a price of $1.06 a foot.

~~Flandrich~~
~~Ca 1575~~

5 1 0 7
3 1 0 7 M

54 holes less than 100' to bottom 5' below Todilto limestone

29 holes in excess of 100' to bottom 5' below T.L.

77 +3	92 +3	81 +3	101 +3	103
85 "	97	86	101	108
92 "	30	91	102	108
67 "	38	10	109	3208 feet
75	47	15	110	2700
81	56	29	114	508
89	62	28	119	
96	70	46	123	
57	79	50	129	
63	80	49	135	
71	83	56	139	
78	89	63	141	
84	92	68	106	
92	97	73	110	
95	21	78	114	
100	18	81	118	
44	38	4984 feet	123	
50	47	2700 feet	128	
60	56	7684 feet @ 50¢	127	
68	56	508 feet @ $1.00	104	
73	65	8192 feet total	107	
82	70	6.2 % of total	113	
85	73	footage @ $1.60 per foot	118	
90	78	taken from Fig 3	117	

and adding 5 feet to each hole for testing with scintillometer,

DMEA-3089 - F.O. Manol.

Reference is made to page 9 of Farnham's report on subject docket which states;

"Figure 3 indicates that about two thirds of the holes would be less than 100 feet deep and the balance would exceed 100 feet. Thus the drilling cost under the bid of the Four Corners Exploration Co. would be as follows:"

18,000 feet @ $0.50	—	$9,000
9,000 feet @ $1.00	—	9,000.

A summary of holes shown of Figure 3 shows, by adding 5 feet to each hole on Farnham's recommendation to bottom the holes 5 feet below the bottom of the limestone, 7684 feet of holes @ $0.50 per foot and 508 feet @ $1.00 per foot. 6.2% of the total drilling on Figure 3 would be at $1.00 per foot — not 33 1/3%.

We agree (12-2-53)

162 holes.

11,500 ft. of drilling.

our figures	6.2% @ $1.00	= 713 ft.	$713.00
	93.8% @ $0.50	= 10,787 ft	5,393.50
	Total drilling Cost	–	$6,106.50
Sampling 20 x 162 = 3240 ft @ 50¢ per foot		–	1,620.00
Radiometric logging 11,500 ft @ 10¢		–	115.00
" assaying		–	800.00
			8,641.50
			4,688
			13,329.50

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

W8113

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM Walter R. Storms, Chief, Mining Methods Branch, Mining Div., Region IV

BUREAU of Mines

CHG. APPROPRIATION GSA teletype

Tucson, Arizona, December 21, 1953

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Mr. W. H. King
U. S. Bureau of Mines
224 New Customhouse
Denver, Colorado

phoned 3:20 pm ts

Re telephone conversation of this morning, have checked Manol uranium report DMEA-3089 and now believe Farnham made error in costs and I made same error in my check calculations. Farnham estimated 18,000 feet at fifty cents and 9,000 feet at one dollar. Since footage to 100 feet costs fifty cents per foot and over 100 feet costs one dollar, Washington costs of ninety-two cents a foot probably fair enough.

WRS

Walter R. Storms

Confirmation ✓
CC - TS(2)
DMEA-3089
DF

WRStorms/ts

Mining Division
Date Rec'd
DEC 23 1953
BUREAU OF MINES
Denver, Colorado

Mining Division
Date Rec'd
DEC 16 1953
BUREAU OF MINES
Denver, Colorado

GSA TELETYPE
CENTER
DEC 15 5 03 PM '53
DENVER, COLO.

389 DN PX

369 PX TS /I-BOM/

TUCSON ARIZ 12-15-53 405P

W H KING

BOM DN

RETEL DOCKET DMEA-3089 F. O. MANOL URANIUM APPLICATION, FARNHAM IN FIELD REGARDING BANNER MINING COMPANY SO WILL TRY TO ANSWER MYSELF. TOO MANY UNKNOWN FACTORS TO ACCURATELY ESTIMATE TOTAL FOOTAGE AND COST OF HOLES, BUT 27,000 FEET OF DRILLING SEEMS REASONABLE. BY ROUGHLY PLOTTING HOLES ON FIGURE THREE WHERE THEY MIGHT BE DRILLED I OBTAIN TWENTY PERCENT OVER ONE HUNDRED FEET AND EIGHTY PERCENT UNDER ONE HUNDRED FEET OR SLIGHTLY UNDER ONE DOLLAR A FOOT TOTAL COST. UNABLE TO UNDERSTAND WHERE SELFRIDGE GETS EIGHTEEN THOUSAND ONE HUNDRED EIGHTY-NINE DOLLARS AND SIXTY CENTS AS OUR REPORT RECOMMENDED TWENTY EIGHT THOUSAND SIX HUNDRED AND TWENTY-SEVEN DOLLARS. BELIEVE ONE DOLLAR A FOOT IS FAIR PRICE.

WALTER R STORMS, TUCSON ARIZONA

DMEA-3089 F. O. MANOL 27,000

BEA 434P

LMR 440P

GSA TELETYPE CENTER

DEC 14 3 46 PM '53

DENVER, COLO.

RUSH RUSH

SVCDN WAF

RE 199 DN WAF /I-BOM/ DT 428P KING SGD SELFRIDGE - LAST LN 8TH GRP SHD READ $15,787.20 RPT $15,787.20 PLS MK CFM READ SAME

SVC WAF 12-14-53

OHS 538P

WHK
Shaw
J.J.L.

GSA TELETYPE CENTER
DEC 14 2 57 PM '53
DENVER, COLO.

Minno Division
Date Rec'd
DEC 14 1953
BUREAU OF MINES
Denver, Colorado

199 DN WAF /I-BOM/

WASHINGTON 12-14-53 428P

W H KING EXEC OFFCR

DMEA FLD TEAM REGION IV 224 NEW COURTHOUSE BLDG DN

SUBJECT - DOCKET NO. DMEA-3089, F. O. MANOL /URANIUM/

REOURLET DECEMBER 14 DOCKET DMEA-3089 F. O. MANOL REVIEW OF REPORT OF EXAMINATION SHOWS EXAMINER-S METHOD OF ESTIMATING PROJECT COST IN ERROR SINCE FOOTAGE OVER 100 FEET IN DEPTH SHOULD BE 5.52 PERCENT NOT 33.33 PERCENT. THEREFORE OUR MEXIMUM OVER-ALL UNIT COST SHOULD BE $0.92 NOT $1.06 AND MAXIMUM TOTAL COST $1~~5,737.20~~ 15,787.20 NOT $18,189.60.

GEORGE C SELFRIDGE CHAIRMAN OPERATING COMMITTEE BOM

14 DMEA-3089 100 5.52 33.33 $0.92 $1.06 $1~~5,738.20~~ 15,787.20 $18,189.60

OHS 434P

WHK
Shaw
F.J.

OPR TS 3421 PLS OKMV
TS 3421-.
& XXXXXXXXX 3422///// XXX3421-G O

TS 3421 GA PLS

DN 235 BUREAU MINES 12-15-53 11-27 AM

W R STORMS
117 ENGINEERING BLDG, UNIV OF ARIZ

THE FOLLOWING TELETYPE HA S BEEN RECEIVED FROM THE CHAIRMAN OF THE OPERATING COMMITTEE -- "REOURLET DECEMBER 14 DOCKET DMEA 3089 F. O. MANOL REVIEW OF REPORT OF EXAMINATION SHOWS EXAMINER-S METHOD OF ESTIMATING PROJECT COST IN ERROR SINCE FGXXX FOOTAGE OVER 100 FEET IN DEPTH SHOULD BE 5.52 PRXXX PERCENT NOT 33.33 PERCENT. THEREFORE OUR MAXIMUM OVER-ALL UNIT COST SHOULD BE $0.92 NOT $1.06 AND MAXIMUM TOTA L COST $15,787.20 NOT $18,189.60. - GEORGE C SELFRIDGE, CHAIRMAN OPERATING COMMITTEE BOM". PLEASE TELETYPE YOUR COMMENTS.

W H KING

END MSG ACK PLS BMH 11-30 AM
RECD DN 235 QWAQTATE XXX 12-14XXX 12-15-53 1130A PFS

CPR TS 3421 PLS OKNV
TS 3421-
& XXXXXXXXX 3422///// XXX3421-G O

TS 3421 GA PLS

DN 235 BUREAU MINES 12-15-53 11-27 AM

W R STORMS
117 ENGINEERING BLDG, UNIV OF ARIZ

THE FOLLOWING TELETYPE HAS BEEN RECEIVED FROM THE CHAIRMAN OF THE OPERATING COMMITTEE -- "RECURLET DECEMBER 14 DOCKET DMEA 3089 F. C. MANCL REVIEW OF REPORT OF EXAMINATION SHOWS EXAMINER-S METHOD OF ESTIMATING PROJECT COST IN ERROR SINCE FGXXX FOOTAGE OVER 100 FEET IN DEPTH SHOULD BE 5.52 PRXXX PERCENT NOT 33.33 PERCENT. THEREFORE OUR MAXIMUM OVER-ALL UNIT COST SHOULD BE $0.92 NOT $1.06 AND MAXIMUM TOTAL COST $15,787.20 NOT $18,189.60. - GEORGE C SELFRIDGE, CHAIRMAN OPERATING COMMITTEE DOW". PLEASE TELETYPE YOUR COMMENTS.

W P KING

END MSG ACK PLS DMN 11-30 AM
RECD DN 235 QUACTATE XXX 12-14XXX 12-15-53 1130A PFS

STANDARD FORM No. 14A
APPROVED BY THE PRESIDENT
MARCH 10, 1926

WHK

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

GOVERNMENT PRINTING OFFICE 6—7134

FROM INTERIOR DEPARTMENT
Walter R. Storms, Chief, Mining Methods Branch, Mining Division, Region IV
BUREAU Mines

CHG. APPROPRIATION GSA teletype

Tucson, Arizona, December 15, 1953

phoned 4 pm TS

Mr. W. H. King
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Retel Docket DMEA-3089 F. O. Manol uranium application, Farnham in field regarding Banner Mining Co. so will try to answer myself. Too many unknown factors to accurately estimate total footage and cost of holes, but 27,000 feet of drilling seems reasonable. By roughly plotting holes on figure 3 where they might be drilled I obtain 20 percent over 100 feet and 80 percent under 100 feet or slightly under one dollar a foot total cost. Unable to understand where Selfridge gets $18,189.60 as our report recommended $28,627. Believe one dollar a foot is fair price.

WALTER R. STORMS WRS

Confirmation
DMEA-3089
TS-2
DF

Mining Division
Date Rec'd
DEC 17 1953
BUREAU OF MINES
Denver, Colorado

1-1027
(April 1946)

UNITED STATES
DEPARTMENT OF THE INTERIOR

AGENCY DMEA REG IV

TELETYPE

Originator:
Ext.: Room:

Appro.:
Date: 12/15/53
Time:
No.:
To: W R STORMS
117 Engineering Bldg., Univ. of Ariz., Tucson
Subject:

COPY

THE FOLLOWING TELETYPE HAS BEEN RECEIVED FROM THE CHAIRMAN OF THE OPERATING COMMITTEE -- "REOURLET DECEMBER 14 DOCKET DMEA-3089 F. O. MANOL REVIEW OF REPORT OF EXAMINATION SHOWS EXAMINER-S METHOD OF ESTIMATING PROJECT COST IN ERROR SINCE FOOTAGE OVER 100 FEET IN DEPTH SHOULD BE 5.52 PERCENT NOT 33.33 PERCENT. THEREFORE OUR MAXIMUM OVER-ALL UNIT COST SHOULD BE $0.92 NOT $1.06 AND MAXIMUM TOTAL COST $15,787.20 NOT $18,189.60. - GEORGE C SELFRIDGE CHAIRMAN OPERATING COMMITTEE BOM". PLEASE TELETYPE YOUR COMMENTS.

W. H. KING

Authorized:
CONFIRMATION

Sign original message and transmit to Room ..... in duplicate

U. S. GOVERNMENT PRINTING OFFICE 16—50915-1

WHK

TELETYPE MESSAGE

Agency: DMEA
Room No. 4640
Appro.No. 14X3923.970 Working Fund, Interior, DMEA
Date: December 14, 1953
To: W. H. King, Executive Officer, DMEA Field Team, Region IV, 224 New Courthouse Building, Denver 2, Colorado
Re: Docket No. DMEA-3089, F. O. Manol (Uranium)

REOURLET DECEMBER 14 DOCKET DMEA-3089 F. O. MANOL REVIEW OF REPORT OF EXAMINATION SHOWS EXAMINER'S METHOD OF ESTIMATING PROJECT COST IN ERROR SINCE FOOTAGE OVER 100 FEET IN DEPTH SHOULD BE 5.52 PERCENT NOT 33.33 PERCENT. THEREFORE OUR MAXIMUM OVER-ALL UNIT COST SHOULD BE $0.92 NOT $1.06 AND MAXIMUM TOTAL COST $15,787.20 NOT $18,189.60.

Mining Division
Date Recd
DEC 17 1953
BUREAU OF MINES
Denver Colorado

C O N F I R M A T I O N

George C. Selfridge
CHAIRMAN, OPERATING COMMITTEE

224 New Customhouse
Denver 2, Colorado

November 25, 1953.

Memorandum

To: W. R. Storms
A. F. Shride

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA-3089 (Uranium), F. O. Manol Mine, McKinley County, New Mexico.

Enclosed for your information is copy of a letter dated November 23, 1953 from F. O. Manol to the Washington Office of the DMEA.

W. H. King

W. H. King

Enclosure

JFS:cwm

cc: Docket
Chron.

November 23, 1953

Mining Division
Date Rec'd.
NOV 25 1953
BUREAU OF MINES
Denver, Colorado

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

Attention: Mr. Ernest Wm. Ellis
Chief Rare & Misc. Metals Division

Re: DMEA Docket 3089

Gentlemen:

Please advise what is the status of the above DMEA application?

It is our understanding that your office has had in its possession all necessary data since the middle of October. Your Mr. Murphy informed me over the telephone that after your office has all necessary data from your field offices that it normally takes only a week or two to complete the processing.

Very truly yours,

F. O. Manol

cc-W. H. King
Executive Officer
Region IV

224 New Customhouse
Denver 2, Colorado

October 20, 1953

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3089, Owner's Consent to Lien

Enclosed are six copies of Form MF-203, Owner's Consent to Lien on Lot No. 3 of the SW¼; N½ of the NE¼ of SW¼; both in Section 30, Township 13 of Range 9 East of the New Mexico Meridian, New Mexico.

John F. Shaw
John F. Shaw for
W. H. King

Enclosures

Encld

cc: Storms
Kirchmann
sub
chron

F. O. MANOL
P. O. BOX 246
GRANTS, NEW MEXICO

October 16, 1953

Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Docket No.
DMEA-3089

Attention: Mr. W. H. King

Gentlemen:

Enclosed find six copies of Owner's Consent to Lien properly filled out and signed by all parties concerned.

Very truly yours,

F O Manol

Mining Division
Region IV

October 15, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMRA Docket 3089 (Uranium), Manuel Claims, McKinley County, New Mexico.

Enclosed are eleven copies of the Engineering Report on the subject docket.

The applicant's original application requested $79,819.40 to drill an area comprising 160 acres. His amended application requests $73,559.54 to drill one half that area or 80 acres. Adjoining ground held by the applicant would be benefited by the proposed exploration but would not be subordinated.

We do not believe it is in the best interests of the Government to approve this application unless the applicant will subordinate his adjoining ground.

John F. Shaw
John F. Shaw
For W. H. King

HMC

Enclosures

HMC:cwm

cc: Docket
AHKoschmann (2)
Chron.

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

224 New Customhouse
Denver 2, Colorado

October 13, 1953

Memorandum

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

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3089 (Uranium), Manol Claims, McKinley County, New Mexico

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

We believe that the DMEA should be exceedingly cautious when approving drilling contracts in this area owing to the lack of surface indications that would serve to delimit the favorable areas. The extremely close drilling required approaches development rather than exploration. The size of the anticipated discoveries seems to require the application of all available methods which offer some chance of reducing the total costs of the exploration.

The applicant proposes to have the drilling performed by the Four Corners Exploration Company, an organization in which the applicant, F. Q Manol, owns a half interest.

The applicant's amended application proposes to confine the exploration work to Lot 3 and the adjoining N 1/2 of the E 1/2 of SW-1/4 Sec. 10. His original application requested $79,819.40 to drill 160 acres and the amended application asks for $73,559.54 to drill only 80 acres.

We believe that the project will disclose a significant amount of uranium, however, the applicant has withdrawn a large area in the amended application. The withdrawn area and the 80 acres adjoining the project on the south, which is also owned by the applicant, will profit by the proposed exploration. Therefore, we do not believe it is in the best interests of the Government to approve this application unless the applicant is willing to subordinate his adjoining holdings.

If, however, the Commodity Committee believes that this type of program can be justified under the DMEA regulations we recommend that a short form contract be prepared on a unit cost basis of not more than $1.00 per foot of hole drilled.

John F. Shaw
for W. H. King

A. H. Koschmann

Enclosures

Copy to: Docket
Koschmann (2)
Chron.

ld

cc: WRStorms w/copy of Report of Examination
~~AFShride w/copy of Report of Examination~~
RPFischer w/copy of Report of Examination
ERGordon w/copy of Report of Examination
AHKoschmann w/copy of Report of Examination
DMEA w/copy of Report of Examination
Mining Division w/copy of Report of Examination

224 New Customhouse
Denver 2, Colorado

October 14, 1953

Registered Mail
Return Receipt Requested

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3089

Dear Mr. Manol:

Returned herewith is your Abstract of Title on property included in DMEA application, Docket No. DMEA-3089, which was forwarded to us on September 24 by Mr. Walter R. Storms,

Very truly yours,

John F. Shaw

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

Enclosure

HMC

HMC:jp
cc Subject
Chron
WRStorms
AHKoschmann

Mining Division
Date Rec'd.
SEP 28 1953
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION
TUCSON, ARIZONA

September 24, 1953

Register

Memorandum

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

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Docket DMEA-3089, F. O. Manol's Uranium Claims, McKinley County, N. Mex.

Enclosed is abstract of title of land held by F. O. Manol in McKinley County, N. Mex. After you have finished with this abstract, please return it to Manol at Box 246, Grants, N. Mex.

Walter R. Storms

Walter R. Storms

CC DMEA-3089
DF

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

MINING DIVISION
REGION IV

September 24, 1953

Mr. F. O. Manol
Box 246
Grants, N. Mex.

Re: Docket DMEA-3089, Uranium
McKinley County, N. Mex

My dear Mr. Manol:

Your abstract of title to the uranium property in McKinley County, New Mexico was received today and we want to thank you for sending it.

This abstract will be sent to the Executive Officer of the DMEA Field Team in Denver, then will be returned to you from Denver. If the Executive Officer needs any other information he will write directly to you.

Sincerely yours,

Walter R. Storms, Chief
Mining Methods Branch
Mining Division, Region IV

CC W. H. King
DMEA-3089
DF

WRStorms:frj

224 New Customhouse
Denver 2, Colorado

October 7, 1953

Memorandum

To: R. P. Fischer, USGS

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA-3059, F. O. Manol's Uranium Property, McKinley County, New Mexico

Storms has transmitted copies of correspondence with you in regard to drilling pattern described in Farnham's report on Docket DMEA 3059, F. O. Manol's Uranium Property, McKinley County, N.Mex.

We believe that Farnham's explanation of the number of holes to be included will clarify the matter. The necessary change on page 7 of the report will be made in this office.

W. H. King

W. H. King

cc: A. H. Koschmann (2)
W. R. Storms (2)
Connors
Sub
Chron

WHK:bh

Mining Division
Date Rec'd.
OCT 1953
BUREAU OF MINES
Denver, Colorado

(11)

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

October 8, 1953

Memorandum

To: A. H. Koschmann and W. H. King, Region IV

From: R. P. Fischer, Acting Supervisor, Colorado Plateau District

Subject: DMEA 3089, Revised application F. O. Manol, McKinley County, New Mexico

The original application was received in early August and a joint field examination was made by J. D. Strobell and Lloyd Farnham on August 11. Strobell's report on this examination was transmitted to Denver on August 21. This report outlined a tentative plan of exploration, subject to review and possible modification after Manol's revised application was received.

The revised application was received in Grand Junction on September 28, along with a copy of Farnham's report regarding the revised application. This was discussed with Strobell during his visit to Grand Junction on October 2. On October 5 a letter was received from Storms, and attached to it was a statement of explanation from Farnham regarding a minor point of confusion in Farnham's report.

After a review of Strobell's report of August 21, and Farnham's report on the revised application, it is my personal opinion that the two reports are sufficiently compatible so that no additional report from Strobell is needed. The exploration proposed by the two reports is identical in general plan. Strobell's report, however, includes drilling in the N 1/2, SE 1/4, sec. 30 as well as the N 1/2, SW 1/4, sec. 30; whereas, the revised application requests exploration only in the N 1/2, SW 1/4, sec. 30; thus Strobell's report deals with twice as much ground and equivalent amount of drilling than the revised application.

I will not request Strobell to prepare any addition comments regarding the Manol application unless you request me to do so.

Returned herewith is one copy of Farnham's report on the revised application and the copy of the revised application, both of which were sent to me by Storms with the request that we transmit them to King's office.

RPF

R. P. Fischer
Acting Supervisor
Colorado Plateau District

Enclosures (2)
Farnham's Rpt. and
Revised application to King
RPF/mlr

cc: W. R. Storms
J. D. Strobell
G. J. file
Reading file

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

224 New Customhouse
Denver 2, Colorado

October 7, 195[illegible]

Memorandum

To: R. P. Fischer, USGS

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA-3089, F. O. Manol's Uranium Property, McKinley County, New Mexico

Storms has transmitted copies of correspondence with you in regard to drilling pattern described in Farnham's report on Docket DMEA 3089, F. O. Manol's Uranium Property, McKinley County, N.Mex.

We believe that Farnham's explanation of the number of holes to be included will clarify the matter. The necessary change on page 7 of the report will be made in this office.

W. H. KING
W. H. King

cc: A. H. Koschmann (2)
W. R. Storms (2)
Connors

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

W. H. KING

Mining Division
Date Rec'd.
OCT 5 - 1953
BUREAU OF MINES
Denver, Col. TUCSON, ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

MINING DIVISION
REGION IV

October 2, 1953

Memorandum

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

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Docket DMEA-3089, F. O. Manol's Uranium Property, McKinley County, N. Mex.

Attached is a copy of a letter between Dick Fischer and J. D. Strobell, and a letter from this office to Fischer with copy of a memorandum from Farnham.

Fischer has brought up the point that Farnham's report, on page 7, isn't quite clean. I believe the attached correspondence will explain the point. To save time, can you change Lloyd's report on page 7?

Walter R. Storms

Walter R. Storms

CC DMEA-3089
DF

FOR VICTORY
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 360
Grand Junction, Colo.

September 29, 1953

Mr. J. D. Strobell
P. O. Box 96
Shiprock, New Mexico

Dear Jack:

Yesterday I received from Rex Storms the revised application of F. O. Manol, Docket 3089, for DMEA assistance for exploring part of his property in McKinley County, New Mexico. Attached is Manol's revised application and a copy of the engineering report prepared by L. L. Farnham on this application.

Also attached is a copy of the report you prepared on the original application on the basis of your examination on August 11. After you have reviewed the revised application and Farnham's report, please prepare a brief memorandum,or a report, expressing your ideas regarding the revised application and Farnham's recommendation for a modified program. When you return these various documents to me, we will duplicate your comments and transmit them along with Manol's revised application and the copy of Farnham's report to the Denver office of DMEA.

I have briefly scanned the revised application and Farnham's report. Farnham recommends a considerable reduction in the amount of drilling proposed by the applicant. With regards to Farnham's recommendation, however, there appears to be either a misstatement of the plan or an error in calculating the number of holes and the footage required to fulfill the recommended plan. On page 7 of Farnham's report, he recommends a primary drilling pattern of 91 holes, each spaced 200 feet apart (the pattern planned by Manol and shown on the map accompanying the application). Farnham then states that "it is assumed that each of these 91 holes would justify off-set holes spaced 100 feet apart. This second phase then would require an additional 91 holes, making a total of 182, which would be equivalent to drilling the entire area on a 100-foot grid pattern." Actually, the 91 off-set holes would only partly complete the 100 foot grid pattern. To complete a 100-foot grid pattern of the entire area would require between 234 and 260 holes, depending upon how off-sets are placed along the margins of the ground proposed for exploration.

By sending a carbon copy of this letter to Rex Storms, he will be informed of this problem in case he wishes to modify Farnham's text statement or the total number of holes recommended. I doubt that you will be able to complete your statement regarding this modified application until you hear from Storms regarding any change he may wish to make in Farnham's report. In spite of this possible delay, your prompt attention to this revised application will be appreciated.

Sincerely yours,

R. P. Fischer

Attachments

RPF/mlr

cc: W. R. Storms (via air mail)
Tucson, Arizona
D. J. Files (2)

C O P Y

MINING DIVISION
REGION IV

October 2, 1953

Mr. R. P. Fischer
U. S. Geological Survey
P. O. Box 360
Grand Junction, Colo.

Re: Docket DMEA-3089
F. O. Manol's Uranium
Property, McKinley
County, N. Mex.

Dear Dick:

The copy of your letter to Jack Strobell, in regard to Farnham's report on the Manol property, was received this morning. Lloyd wrote his report under pressure as Bill King wanted it in Denver as soon as possible, so he didn't make himself clear, as you indicate. In the first paragraph of his report, page 7, Lloyd didn't exactly mean what he said as per attached memorandum. What he actually meant was that a certain number of the initial holes, which were spaced 200 feet apart, would find enough mineralization to merit several offset holes, spaced 100 feet apart. He assumed that 91 holes on 100 foot centers would be enough. Actually, he didn't mean to drill the entire area with holes spaced at 100-foot intervals.

It is too bad that the Bureau's engineer and the Survey's geologist can't get together when these reports are written. By comparing notes they could agree on all points and better reports would result.

Sincerely yours,

Walter R. Storms

Walter R. Storms, Chief
Mining Methods Branch
Mining Division, Region IV

CC W. H. King
DMEA-3089
DF

WRStorms:frj

MINING DIVISION
REGION IV

October 2, 1953

Memorandum

To : Walter R. Storms, Chief, Mining Methods Br., Mining Division, Region IV

From : L. L. Farnham, Mining Engineer, Tucson, Arizona

Subject : Docket DMEA-3089, Misstatements in Farnham's report.

The first paragraph of page 7 in Farnham's report reads as follows:

"The entire 80 acres should be drilled with holes spaced 200 feet apart. This phase of the program would require 91 holes. In all probability this primary stage would eliminate a portion of the area from further consideration. However, it is assumed that each of these 91 holes would justify offset holes spaced 100 feet apart. This second phase then would require an additional 91 holes, making a total of 182, which would be equivalent to drilling the entire area on a 100-foot grid pattern". The last 2 sentences in the above are in error. The writer wished to convey that a certain number of the initial 91 holes (spaced 200 feet apart) would merit off-sets spaced 100 feet apart in the promising areas. It was assumed that an additional 91 holes would be required for this phase of the off-setting. At this stage of the program 182 holes would have been drilled. Of this number it was estimated that 1 out of 6 or 30 of these holes would warrant off-setting with 4 holes spaced 50 feet apart, thus requiring an additional 120 holes. In order to further outline any ore bodies indicated by the former drilling, 60 more holes, spaced no closer than 25 feet apart, were recommended. On this basis a maximum of 362 holes would be required. A summary of this program follows:

Primary - 200-foot grid		91 holes
Offsets - 100 " "		91 "
Offsets - 50 " "		120 "
Offsets - 25 " "		60 "
	Total	362 holes

L. L. Farnham, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W. H. King
DMEA-3089
DF

LLFarnham:frj

This sheet corrected for engineering report in accordance with Kings letter 10-7-53 Hmc

The entire 80 acres should be drilled with holes spaced 200 feet apart. This phase of the program would require 91 holes (figure 3). In all probability this primary stage would eliminate a portion of the area from further consideration. ~~However, for the purpose of estimating the total allowable amount of drilling that might be required to thoroughly explore the area, it is assumed that each of these 91 holes would justify off-set holes spaced 100 feet apart. This second phase then would require an additional 91 holes, making a total of 182, which would be equivalent to drilling the entire area on a 100-foot grid pattern.*~~ Experience in the district has shown that about 1 out of 6 holes spaced 100 feet apart might indicate sufficient abnormally high radio-activity so as to merit off-set drilling. Based on this ratio, about 30 of these 182 holes would justify off-setting by 4 holes each, spaced 50 feet apart. Thus, this third phase would require an additional 120 holes, and thereby increase the total to 302 holes at this stage of the work. It would seem that an additional 60 holes spaced no closer than 25 feet would be sufficient to outline, for discovery purposes, any ore bodies indicated by the former holes. On this basis, a total of 362 holes would be required. The average depth of these holes as computed by the examiner was 74.6 feet (figure 3). Hence the total for the project would amount to 27,005 feet of drilling. This is only about one-third of the total footage proposed by the applicant. Nevertheless, 362 holes would seem adequate to explore the area to such an

WHK

Mining Division
Date Rec'd
SEP 28 1953
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

September 25, 1953

Mr. R. P. Fischer
Acting District Supervisor
Colorado Plateau District
U. S. Geological Survey
Box 360
Grand Junction, Colo.

Re: Docket DMEA-3089
F.O.Manol's Uranium Property
McKinley County, N. Mex.

Dear Dick:

Enclosed is the revised application of F. O. Manol for a DMEA exploration loan on his property north of Grants, N. Mex.; also enclosed is an extra copy of Lloyd Farnham's report. Will you please turn both over to John Strobell? Sorry to be so late in mailing the amended application to you but Farnham completed his report only today.

Sincerely yours,

Walter R. Storms, Chief
Mining Methods Branch
Mining Division, Region IV

CC W. H. King
DMEA-3089
DF

WRStorms:frj

P.S. - Please send the enclosed copy of Farnham's report to Bill King when finished with it as this is one of his copies.

WRS

224 New Customhouse
Denver 2, Colorado

September 22, 1953.

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re: Docket No. DMEA-3089

Dear Mr. Manol:

In accordance with the request from Mr. Walter R. Storms we are enclosing six copies of Owner's Consent to Lien, Form MF-203.

Very truly yours,

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

Enclosures

JFS:cwm

cc: Docket
WRStorms
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

MINING DIVISION
REGION IV

TUCSON, ARIZONA

September 17, 1953

Memorandum

Air Mail

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

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : "Owner's Consent to Lien" Forms
(Dockets DMEA-3089 and 3152).

L. L. Farnham has just returned from Grants, N. Mex. and has asked that sets of "Owner's Consent to Lien" forms be sent to the following parties. We are out of this form so would appreciate it very much if you would send them to

Mr. F. O. Manol
P. O. Box 246
Grants, N. Mex.

and to

Hanosh Mines, Inc.
Box 447
Grants, N. Mex.

Farnham saw Manol in Grants and found out that Manol didn't know that he had to have these "Owner's Consent to Lien" forms signed.

Walter R. Storms

Walter R. Storms

CC DMEA-3152
DMEA-3089
DF

Z NO T EP I AM
IFRI DMIN PLS OPR WE HAVE PUBLIC BUILDING SERV 3421
L
AV OK V
TS 3421 GA PLS

W.H.K.
Shaw
R.B.B.

THIS S IS DN 235 BUR MINES WILL U DELIVER MSG TO W R STORMS U S
BUR MINES IN TUCSON
YES GA PLS

3089

DN 235 BUREAU MINES 9-18-53 4-5XXX 4-00 PM

W R STORMS
BUREAU OF MINES
117 ENGINEERING BLDG UNIV OF ARIZ
TUCSON ARIZONA

REFERENCE YOUR TELEGRAM TO F. O. MANOL REQUESTING CERTIFIED COPY OF LAND LEASE. PLEASE HAVE FARNHAM COMPLETE REPORT STATING THA T THE APPLICANT IS REPORTED TO HAVE A VALID LEASE. WE WILL REQUEST THE LEASE OR A COPY BEFORE WE MAKE A CONTRACT. IF YOU WAIT FOR THE INFORMATION FROM MANOL WE WILL NOT MEET SECRETARY MCCXXX MCKAY,S DEADLINE.

W H KIN

END MG ACK PLS BMH 4-02 PM
RECD DN 235 OK

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

W. H. K.

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM Walter R. Storms

BUREAU of Mines

CHG. APPROPRIATION Day letter DMEA

Tucson, Arizona, Sept. 17, 1953

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Phoned GSA at 3.10 p.m. frj

Mr. F. O. Manol
P. O. Box 246
Grants, New Mexico

Re Docket DMEA-3089, uranium claims in McKinley County, New Mexico, please air mail certified or photostatic copy of your land lease to this office so Farnham can complete his report. Mail to Box 4097, Tucson 5, Arizona.

Walter R. Storms

Walter R. Storms

CC Confirmation
W. H. King
DMEA-3089
TS (2)
DF

WRStorms:frj

Mining Division
Date Rec'd
SEP 18 1953
BUREAU OF MINES
Denver, Colorado

224 New Customhouse
Denver 2, Colorado

September 9, 1953

Memorandum

To: W. R. Storms (with brochure)

R. P. Fischer

From: Field Team, Region IV

Subject: Docket DMEA - 3089 (Uranium), Amended Application of F. O. Manol

Enclosed herewith is the amended application for Government assistance in exploration work estimated to cost $73,559.54.

The brochure consists of completed Form MF-103, a structure contour map, and a drilling and logging bid.

Will you please give us your final recommendations based on this application?

As soon as this application has served your purpose please make the brochure available to the Geological Survey so that they can give us their final recommendations.

W. H. King
W. H. King

W. H. K.

A. H. Koschmann
A. H. Koschmann

Enclosure

HMC
HMC:fwo

cc Subject
Chron
Koschmann (2)

224 New Customhouse
Denver 2, Colorado

September 9, 1953

Memorandum

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

From: Field Team, Region IV

Subject: DMEA - 3089 (Uranium), Amended application of F. O. Manol, Mc Kinley County, New Mexico

Enclosed are two copies of an amended application on the subject docket in the amount of $73,559.54.

One copy of the amended application has been sent to the field and one retained in this office because the applicant is coming here to discuss it with us.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

W. H. K.
Enclosure

HMC:fwo

cc Subject
Chron
Koschmann (2)

224 New Customhouse
Denver 2, Colorado

July 27, 1953

Memorandum

To: W. R. Storms

R. P. Fischer (with brochure)

From: Field Team, Region IV

Subject: Docket DMLA 3089 (Uranium), F. O. Manol Property, McKinley County, New Mexico

Enclosed herewith is the subject application for Government assistance in exploration work estimated to cost $79,819.40.

The brochure consists of the following:

1. MF-103
2. Names and addresses of owners of lease
3. Operating agreement
4. Map of Area A.
5. Map of Areas B & C

Your attention is directed to the enclosed letter from the Operating Committee.

A suitable report is required.

W. H. King
W. H. King

W.H.K.

for E. N. Hauchman
A. H. Koschmann

Enclosures

HMC:fwo

cc Subject
Chron, Koschmann (2)

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM Walter R. Storms

BUREAU of Mines

CHG. APPROPRIATION Full rate DMEA

Tucson, Ariz., Aug. 3, 1953

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Phoned 9.25 a.m. frj

Mr. R. P. Fischer
U. S. Geological Survey
Box 360
Grand Junction, Colorado

Our Lloyd Farnham will meet Strobell at Grants Motel in Grants morning of August 11 to examine Docket DMEA-3089.

Walter R. Storms

Confirmation
W. H. King
DMEA-3089
TS(2)
DF

WRStorms:frj

Mining Division
Date Rec'd.
AUG 5 - 1953
BUREAU OF MINES
Denver, Colorado

Mining Division
Date Rec'd
AUG 5 - 1953
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

August 3, 1953

Mr. J. D. Strobell
U. S. Geological Survey
Box 96
Shiprock. N. Mex.

Re: Docket DMEA-3089
Manol's Uranium Property
McKinley County, N. Mex.

My dear Mr. Strobell:

In regard to our telephone conversation of last week concerning the examination of the Manol uranium property north of Grants, New Mexico, Docket DMEA-3089, our Lloyd L. Farnham will meet you at the Grants Motel in Grants the morning of August 11. Farnham will leave here early on August 10 and will be in Grants that night.

I understand from Mr. King of our Denver office that you will be in Shiprock on August 8, so am sending this letter there.

Sincerely yours,

Walter R. Storms, Chief
Mining Methods Branch
Mining Division, Region IV

CC Mr. R. P. Fischer
Geological Survey
Box 360
Grand Junction, Colo.

CC W. H. King
DMEA-3089 - Docket
DF

WRStorms:frj

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

J. D. Strobel, Jr.,

July 29, 1953

Mining Division
Date Rec'd
AUG 3 - 1953
BUREAU OF MINES
Denver, Colorado

R. P. Fischer

DMEA 3089

Attached is the brochure for DMEA 3089, F. O. Manol property, McKinley County, New Mexico. This application will require field examination and a report. I suggest you contact Rex Storms in Tuscon and Paul Melanson (AEC, Grants) and arrange for a mutually convenient time for examination.

The application proposes drilling in three phases. No samples are to be taken during the first two phases of the work, but they propose gamma-ray logging by AEC. I have checked this scheme with Hobart Stocking, AEC, Grand Junction, who tells me that the AEC has a gamma-ray logging unit in the area and that it will be available to log holes drilled by private individuals or on DMEA projects; hence, this part of the proposal appears to offer no difficulty.

There is a question in my mind, however, regarding the plan to collect no samples for assay during the first and second phases of drilling. Of course, this will save some money, both from the standpoint of the cost of collecting samples and the cost of assaying, but I wonder if it will yield all of the information that should be obtained on a DMEA project. I also wonder if it will be feasible to rely solely on radiometric determinations of samples taken during the third phase of drilling rather than chemical assays. I suggest you check with the AEC field men on both of these points, to be sure that their experience shows that they can obtain satisfactory information by the proposed plan. If possible, try to get a written statement from Melanson indicating his approval of the plan and enclose this statement in your report.

I also question if the holes drilled during the first phase of exploration need be spaced as close as 100 feet apart. Be sure to check with the AEC men regarding their ideas of the expected size of deposits in this area.

R. P. Fischer

Enclosure
RPF/mlr
cc: W. H. King
A. H. Koschmann
W. R. Storms
G.J. File
Reading file

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

Mining Division
Date Rec'd.
JUL 22 1953
BUREAU OF MINES
Denver, Colorado

JUL 20 1953

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. King:

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

Enclosed are copies of memoranda from Mr. H. D. Keiser, dated June 30, 1953, and Mr. A. P. Butler, Jr., dated July 8, 1953, outlining recommendations that should be considered by the Field Team in their study of the subject exploration proposal.

Please note that the areas A and C, shown on the project drill maps, are not included under "3. Applicant's Property Rights" in the MF-103 forms submitted by the Applicant. Area C (N.W.$\frac{1}{4}$ of S.W.$\frac{1}{4}$ of Sec. 30) has also been omitted in the "Operating Agreement" attached to the subject application.

If your office recommends that a contract be executed for this project, will you kindly have the Applicant submit the correct description of all boundaries of the areas subject to the proposed contract, and also seven copies of "Owner's Consent to Lien" on this land.

The present ore production area of the Manol Mine is so close to the proposed exploration area that some difficulty may be encountered in the administration of ore sales from the individual areas. If the Operator is not willing to include the whole Manol Mine area as subject to royalty payment in the event a discovery is made during the proposed exploration program, a definite arrangement should be made with the Operator in regard to the control of sales of ore that may result from the proposed drilling.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges
Member, Bureau of Mines

A. P. Butler
Member, Geological Survey

224 New Customhouse
Denver 2, Colorado

November 4, 1953

Memorandum

To: A. H. Koschmann
W. R. Storms
R. P. Fischer

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3089 (Uranium), F. O. Manol Mine, McKinley County, New Mexico

Enclosed for your information are two copies of a letter dated October 29, 1953, from the Chief, Rare and Miscellaneous Minerals Division, DMEA, to Mr. F. O. Manol.

W. H. King

Enclosure

JFS:es

cc: Docket
Chron.

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

Mr. F. O. Manol
Box 246
Grants, New Mexico

OCT 29 1953

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. Manol:

This is to acknowledge receipt of an amended application dated September 2, 1953, and 7 copies of executed (but undated), "Owner's Consent to Lien" forms on land described as Lot No. 3 (N.W.¼ of S.W.¼) and the N.E.¼ of the S.W.¼, both in Section 30, T 13 N, R 9 W. The amended application forwarded to this office by the Executive Officer of Region IV, has been filed with your original application under the above docket number.

Reviewing the original application, we find that the above two parcels of land (40 acres, each) referred to as Areas "C" and "B" respectively and also Area "A" (N½ of the S.E.¼, Sec. 30) were listed as the land on which the proposed exploration work was to be done. Area "A" was referred to in the application DF-103 form as being the S½ of the N.E.¼, but on the maps attached it was shown as the N½ of the S.E.¼. We assume the map location is correct as shown.

In the amended application we note that Area "A" has been withdrawn. However, in our opinion the drilling proposed for Area "B" would benefit Area "A" and also the S.E.¼ of the S.W.¼, and moreover, the drilling proposed for Area "C" would benefit Lot No. 4 (shown on maps submitted with your original application). As you hold leases on both Area "A", the S.E.¼ of the S.W.¼, and Lot No. 4, we believe these areas should be included as subject to royalty payments in case a discovery was made as a result of work done on "B" and "C", which discovery might lead into the adjoining areas. We have no knowledge concerning the ownership of the S½ of the N.W.¼ of Section 30, which we believe would also be benefited by the proposed exploration project.

You are probably aware that monetary sums advanced by the Government through DMEA for exploration aid is interest free. However, a reasonable guaranty of the repayment of such sums is a part of the contract and for this reason we require that any land which is benefited by work performed under such contract shall be included if it is possessed or controlled by the applicant.

Before continuing to process your application we would appreciate having your comments concerning the above question of the land to be included in the proposed contract.

We are enclosing a sketch of the areas mentioned in this letter.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Chief
Rare & Miscellaneous Metals Division

Enclosure

FMMurphy/db
10-27-53
cc to: Adm. Reading File
Docket
Messrs. H.D.Keiser, Rm. 3641
A.P.Butler, Jr., Rm. 3212, GSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

Copies sent Stone, Fosler & Merritt

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

OCT 29 1953

Mr. R. C. Manol
Box 245
Grants, New Mexico

Re: Docket No. [illegible]-3019 (Uranium)
R. C. Manol Mine
McKinley County, New Mexico

Dear Mr. Manol:

This is to acknowledge receipt of an amended application dated September 2, 1953, and 7 copies of executed (but undated), "Owner's Consent to Lien" forms on land described as Lot No. 3 (N.W.¼ of S.W.¼) and the N.E.¼ of the S.E.¼, both in Section 30, T 13 N, R 9 W. The amended application forwarded to this office by the Executive Officer of Region IV, has been filed with your original application under the above docket number.

Reviewing the original application, we find that the above two parcels of land (40 acres, each) referred to as Areas "C" and "B" respectively and also Area "A" (N½ of the S.E.¼, Sec. 30) were listed as the land on which the proposed exploration work was to be done. Area "A" was referred to in the application DE-103 form as being the S½ of the N.E.¼, but on the maps attached it was shown as the N½ of the S.E.¼. We assume the map location is correct as shown.

In the amended application we note that Area "A" has been withdrawn. However, in our opinion the drilling proposed for Area "B" would benefit Area "A" and also the S.E.¼ of the S.W.¼, and moreover, the drilling proposed for Area "C" would benefit Lot No. 4 (shown on maps submitted with your original application). As you hold leases on both Area "A", the S.E.¼ of the S.W.¼, and Lot No. 4, we believe these areas should be included as subject to royalty payments in case a discovery was made as a result of work done on "B" and "C", which discovery might lead into the adjoining areas. We have no knowledge concerning the ownership of the S½ of the N.W.¼ of Section 30, which we believe would also be benefited by the proposed exploration project.

You are probably aware that monetary sums advanced by the Government through DMEA for exploration aid is interest free. However, a reasonable guaranty of the repayment of such sums is a part of the contract and for this reason we require that any land which is benefited by work performed under such contract shall be included if it is possessed or controlled by the applicant.

Before continuing to process your application we would appreciate having your comments concerning the above question of the land to be included in the proposed contract.

We are enclosing a sketch of the areas mentioned in this letter.

Sincerely yours,

SIGNED

Ernest W. Ellis, Chief
Rare & Miscellaneous Metals Division

Enclosure

FMMurphy/db
10-27-53
cc to: Adm. Reading File
Docket
Messrs. H.B.Keiser, Rm. 3641
A.P.Butler, Jr., Rm. 3212, GSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

Mining Division
Date Rec'd
NOV 13 1953
BUREAU OF MINES
Denver, Colorado

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

November 12, 1953

Arthur F. Butler, Jr., USGS Member, Uranium Commodity Committee

Field Team Report DMEA Docket 3069 (Uranium), F. O. Mansl, applicant, N½, SW¼, Sec. 30, T. 13 N., R. 9 W., McKinley County, New Mexico

The Field Team report concerning Government assistance for exploration of the property identified above has been reviewed.

Comment

The examining members of the Field Team are generally agreed that the property is sufficiently favorable for the presence of deposits of uranium ore in the Todilto limestone to warrant some exploration. Many details of the application have been reviewed and discussed by the Field Team with the Chief, Grant's Sub-office, U. S. Atomic Energy Commission.

A decision with respect to granting assistance depends in the opinion of this reviewer on two principal points.

1. Revision of the application, especially as it may affect amount of work and land benefitted.

2. Probable size and distribution of the ore bodies to be sought. The original application proposed exploration of the N½,SW¼ and N½, SE¼ of the section. Subsequently the application was revised to exclude land in the SE¼, though it may be benefitted. In addition, the revised application proposed about 78,400 feet of drilling to explore 80 acres at a cost of about $73,960, whereas the original application proposed exploration of 60 acres by 83,000 feet of drilling at a cost of about $79,500.

The amount of drilling recommended by the engineer examiner disposes of the applicant's inconsistency in asking for nearly as much expense to explore an area half the size originally included. Your letter of October 29, puts the problem of lands that may be benefitted directly up to the applicant.

With regard to the second point, it seems to me that the Field Team report presents the problem of the size, distribution, and depth to ore bodies and suggests a plan of exploration that takes these factors partly into account, but perhaps not definitely enough so as to permit drawing of a contract. In the southwest part of the applicant's property, perhaps in about

one-fifth the area, the depth to ore may be shallow enough to permit mining of less than the estimated average size ore body and exploration will be cheaper because of lesser depth of hole. In the remainder of the property type of overburden or depth of ore will make mining and exploration more costly and perhaps ore bodies would have to be above average size to be mined. It would seem therefore, that the plan of drilling after stage 1, which appears eminently reasonable, should be modified to permit search for smaller than average ore bodies in the southwest one quarter. On the other hand, in the central and northeasterly part of the area, offset drilling of the second stage holes spaced 100 feet apart might be allowed only if results in these holes combined with those of the primary stage suggested the probability that ore intersected in such holes were in a body of a size that would be minable under the prevailing conditions. Subject to the foregoing comment, the engineering report presents a plan of drilling amounting to about one-third that requested by the applicant, and is a satisfactory plan of procedure. I believe, however, that any contract that may be entered into should provide for review of results by MMA of one stage before any drilling of the next stage is authorized. As the geologist examiner estimates that only about 10 percent of the area may need testing by drilling holes spaced more closely than 200 feet, such review may result in substantial savings below the amount presently estimated and recommended by the Field Team.

Recommendation

Subject to resolution of the problem concerning land that may be benefitted and consideration by the Field Team of the desirability of adjusting the plan of drilling to take into account the size of ore body that might be mined under conditions prevailing in different parts of the area, I recommend that Government assistance be granted for the Government's proportionate share of a total of $[illegible].

Copies to: E. Wm. Kilis (2)
A. N. Hawkesworth
W. H. King

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

COPY

JAN - 4 1954

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

Re: Docket No. DMEA-3089 (Uranium)
F. O. Manol
Manol Mine
McKinley County, New Mexico

Dear Mr. King:

In accordance with your teletype request of December 29, 1953, I am enclosing six copies of the Owner's Consent to Lien covering the captioned proposed project.

Your teletype requested any other data which we may have appertaining to the subject property. We have no other data which you do not also have in your office with the exception of the Commodity Members' comments on the Field Team report. Accordingly, we are enclosing copies of memoranda from Mr. Arthur P. Butler, Jr., and Mr. H. D. Keiser, both dated November 12, 1953.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures 8

Approved:

J. H. Hedges
Member, Bureau of Mines

D. M. Larrabee
Member, Geological Survey

Defense Mine... Administration
REC...
NOV 16 1953

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

November 12, 1953

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

Field Team Report DMEA Docket 3089 (Uranium), F. O. Manel, applicant, N½, SW¼, Sec. 30, T. 13 N., R. 9 W., McKinley County, New Mexico

The Field Team report concerning Government assistance for exploration of the property identified above has been reviewed.

Comment

The examining members of the Field Team are generally agreed that the property is sufficiently favorable for the presence of deposits of uranium ore in the Todilto limestone to warrant some exploration. Many details of the application have been reviewed and discussed by the Field Team with the Chief, Grant's Sub-office, U. S. Atomic Energy Commission.

A decision with respect to granting assistance depends in the opinion of this reviewer on two principal points.

1. Revision of the application, especially as it may affect amount of work and land benefitted.

2. Probable size and distribution of the ore bodies to be sought. The original application proposed exploration of the N½, SW¼ and N½, SE¼ of the section. Subsequently the application was revised to exclude land in the SW¼, though it may be benefitted. In addition, the revised application proposed about 72,400 feet of drilling to explore 80 acres at a cost of about $73,560, whereas the original application proposed exploration of 160 acres by 83,000 feet of drilling at a cost of about $79,800.

The amount of drilling recommended by the engineer examiner disposes of the applicant's inconsistency in asking for nearly as much expense to explore an area half the size originally included. Your letter of October 29, puts the problem of lands that may be benefitted directly up to the applicant.

With regard to the second point, it seems to me that the Field Team report presents the problem of the size, distribution, and depth to ore bodies and suggests a plan of exploration that takes these factors partly into account, but perhaps not definitely enough so as to permit drawing of a contract. In the southwest part of the applicant's property, perhaps in about

one-fifth the area, the depth to ore may be shallow enough to permit mining of less than the estimated average size ore body and exploration will be cheaper because of lesser depth of hole. In the remainder of the property type of overburden or depth of ore will make mining and exploration more costly and perhaps ore bodies would have to be above average size to be mined. It would seem therefore, that the plan of drilling after stage 1, which appears eminently reasonable, should be modified to permit search for smaller than average ore bodies in the southwest one quarter. On the other hand, in the central and northeasterly part of the area, offset drilling of the second stage holes spaced 100 feet apart might be allowed only if results in those holes combined with those of the primary stage suggested the probability that ore intersected in such holes were in a body of a size that would be minable under the prevailing conditions. Subject to the foregoing comment, the engineering report presents a plan of drilling amounting to about one-third that requested by the applicant, and is a satisfactory plan of procedure. I believe, however, that any contract that may be entered into should provide for review of results by BMA of one stage before any drilling of the next stage is authorized. As the geologist examiner estimates that only about 10 percent of the area may meet testing by drilling holes spaced more closely than 200 feet, such review may result in substantial savings below the amount presently estimated and recommended by the Field Team.

Recommendation

Subject to resolution of the problem concerning land that may be benefitted and consideration by the Field Team of the desirability of adjusting the plan of drilling to take into account the size of ore body that might be mined under conditions prevailing in different parts of the area, I recommend that Government assistance be granted for the Government's proportionate share of a total of $28,627.

Copies to: E. Wm. Ellis (2)
A. H. Koschmann
W. H. King

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RE
NOV 16 1953

November 12, 1953

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

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

Field Team Report DMEA Docket 3089 (Uranium), F. O. Manol, applicant, N½, SW¼, Sec. 30, T. 13 N., R. 9 W., McKinley County, New Mexico

The Field Team report concerning Government assistance for exploration of the property identified above has been reviewed.

Comment

The examining members of the Field Team are generally agreed that the property is sufficiently favorable for the presence of deposits of uranium ore in the Todilto limestone to warrant some exploration. Many details of the application have been reviewed and discussed by the Field Team with the Chief, Grant's Sub-office, U. S. Atomic Energy Commission.

A decision with respect to granting assistance depends in the opinion of this reviewer on two principal points.

1. Revision of the application, especially as it may affect amount of work and land benefitted.

2. Probable size and distribution of the ore bodies to be sought. The original application proposed exploration of the N½,SW¼ and N½, SE¼ of the section. Subsequently the application was revised to exclude land in the SE¼, though it may be benefitted. In addition, the revised application proposed about 72,400 feet of drilling to explore 80 acres at a cost of about $73,560, whereas the original application proposed exploration of 160 acres by 83,000 feet of drilling at a cost of about $79,800.

The amount of drilling recommended by the engineer examiner disposes of the applicant's inconsistency in asking for nearly as much expense to explore an area half the size originally included. Your letter of October 29, puts the problem of lands that may be benefitted directly up to the applicant.

With regard to the second point, it seems to me that the Field Team report presents the problem of the size, distribution, and depth to ore bodies and suggests a plan of exploration that takes these factors partly into account, but perhaps not definitely enough so as to permit drawing of a contract. In the southwest part of the applicant's property, perhaps in about

one-fifth the area, the depth to ore may be shallow enough to permit mining of less than the estimated average size ore body and exploration will be cheaper because of lesser depth of hole. In the remainder of the property type of overburden or depth of ore will make mining and exploration more costly and perhaps ore bodies would have to be above average size to be mined. It would seem therefore, that the plan of drilling after stage 1, which appears eminently reasonable, should be modified to permit search for smaller than average ore bodies in the southwest one quarter. On the other hand, in the central and northeasterly part of the area, offset drilling of the second stage holes spaced 100 feet apart might be allowed only if results in those holes combined with those of the primary stage suggested the probability that ore intersected in such holes were in a body of a size that would be minable under the prevailing conditions. Subject to the foregoing comment, the engineering report presents a plan of drilling amounting to about one-third that requested by the applicant, and is a satisfactory plan of procedure. I believe, however, that any contract that may be entered into should provide for review of results by DMEA of one stage before any drilling of the next stage is authorized. As the geologist examiner estimates that only about 10 percent of the area may meet testing by drilling holes spaced more closely than 200 feet, such review may result in substantial savings below the amount presently estimated and recommended by the Field Team.

Recommendation

Subject to resolution of the problem concerning land that may be benefitted and consideration by the Field Team of the desirability of adjusting the plan of drilling to take into account the size of ore body that might be mined under conditions prevailing in different parts of the area, I recommend that Government assistance be granted for the Government's proportionate share of a total of $23,627.

Copies to: E. Wm. Ellis (2)
A. N. Koschmann
W. H. King

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 13 1953

November 12, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

Subject: Report of Examination, DMEA Docket 3089, Manol Claims, McKinley County, New Mexico

I have reviewed the subject report and discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

I recommend that the report be returned to the Field Team for reconsideration, and with instructions that the application be analyzed along the lines indicated in the instance of DMEA Docket 3151 (Four Corners Exploration Co.) and DMEA Docket 3190 (Richard Vopat et al, Flat Top-Vilatie Hyde claims). If the land involved or a portion thereof can be explored with a reasonable chance of finding economic deposits of uranium, taking into account exploitation mining costs, favorable action on the application, to the extent of such favorable land, might well be recommended by the Field Team; otherwise a recommendation of denial would appear to be in order.

The report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

Signed

H. D. Keiser

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

Mr. F. O. Manol
P. O. Box 216
Grants, New Mexico

JUL 20 1953

Re: Docket No. DMEA-3059 (Uranium)
F. O. Manol Mine
McKinley County, New Mexico

Dear Mr. Manol:

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

Mr. W. H. King
Executive Officer
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,

FRANK E. JOHNSON

ACTING Administrator

FMMurphy/db
7/16/53
cc to: Adm. Reading File
Docket
Messrs: H.D.Keiser, Rm.3641
A.P.Butler, Jr., RM.3206, GSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

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

Mining Division
Date Rec'd
JUN 29 1953
BUREAU OF MINES
Denver, Colorado

June 25, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region IV

DMEA-3089 F.O. Manol

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

38226

224 New Customhouse
Denver 2, Colorado

June 22, 1953

Memorandum

To: Secretary, Operating Committee, DMEA

From: Field Team, Region IV

Subject: (Uranium) DMEA Application of F. O. Manol, McKinley County, New Mexico

Enclosed are three copies of the subject application for exploration aid in the amount of $79,819.40.

One copy of the application is being retained in this office.

W. H. King
W. H. King

W.H.K.

for E. N. Harshman
A. E. Koschmann

Enclosure

HMC

HMC:fwo

cc Subject
Chron
Koschmann (2)

UTAH | COLORADO
ARIZONA | NEW MEXICO

Four Corners Exploration Company

P. O. BOX 101
GRANTS, NEW MEXICO

IRVING RAPAPORT
F. O. MANOL

August 31, 1953

F. O. Marol and Associates
Box 246
Grants, New Mexico

Gentlemen:

Below are our prices to your orgarization for drilling services, supervisory and geologic services, radiometric logging services, and radiometric assay services as per your request.

Drilling:

1st 100 feet or any part thereof	$.50 per ft.
2nd 100 feet or any part thereof	1.00 per ft.

Blowing hole clear and catching cuttings every two feet. $.50 per foot extra over regular prices.

No charge for standby time on your work.

Radiometric Logging:

Logging hole furnishing original copy of log to you. $.15 per foot.

Scanning holes with logging unit but no transcript furnished. $.07 per foot.

With this service you can log just the suspected ore zones and scan for unexpected mineralization in other zones of the drill holes. Substartial savings can be effected in this manner.

Radiometric Assaying:

Collecting, mixing, pulverizing; sacking, assaying drill hole cuttings. $1.00 each.

Supervision:

Supervision, geologic consultation, mine evaluation, surveying and laying-out grids, accounting, and equipment and supplies, etc. incidental to these services. $.15 per foot.

We believe we are the only organization in the uranium exploration business providing a complete package deal exploration service combining all necessary services into one easy to administer contract.

Very truly yours,

Irving Rapaport

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3089

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol -- P.O. Box 246 -- Grants, New Mexico -- Operator and agent for group venture of persons named in Supplement I attached hereto

hereinafter called the "Operator," as follows: and as set forth in Annex I attached hereto and made a part hereof.

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico County of Mc Kinley, described as follows:[3] Lot No. 3 of the S.W. 1/4, N 1/2 of E 1/2 of SW 1/4; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay (90) ninety percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I, substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____
Executive Officer - DMEA
Field Team - Region IV

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

Exhibit A.

Description of the Work

The work will be divided into three stages. Stage 1 consists of rotary drilling 78 holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of Exhibit A. No holes (in any stage) will be drilled within 160 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 Upon the completion of Stage 1 at locations approved by the DMEA representative a maximum of 60 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 Upon the completion of Stage 2 at locations approved by the DMEA representative a maximum of 92 additional offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 78 feet in depth ~~to~~ & must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. ~~No holes will be~~ Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for DMEA, in 2-foot runs throughout the entire thickness of the Todilto Limestone. Radiometric logging of the hole and/or radiometric scanning of all samples, will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project:

Stage 1.

Rotary drill 78 holes a total of 6084 feet @ $.90 per foot - $5,475.60

Stage 2

Rotary drill 60 holes a total of 4680 feet @ $.90 per foot - 4,212.00

Stage 3.

Rotary drill 92 holes a total of 7176 feet @ $.90 per foot - 6,458.40

Total estimated cost - $16,146.00

Government participation @ 90% - $14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and all other expense incurred in completing the work.

DOCKET NO. DMEA 3089

MF-200 (A)
(February 1952)

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

COPY

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, P. O. Box 246, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows, and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, by possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances, a list of which the subordination agreement of the creditors is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____
Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

DOCKET NO. DMEA 3089

MF-200 (A)
(February 1952)

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

COPY

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, P. O. Box 246, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows, and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and the property is subject only to the following claims, encumbrances, each of which the subordination agreement of the holder is attached:~~

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____
Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

DOCKET NO. DMEA 3089

MF-200 (A)
(February 1952)

COMMODITY Uranium

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

COPY

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] F. O. Manol, P. O. Box 246, Grants, New Mexico — Operator and agent for group venture of persons named in Supplement I attached hereto.

hereinafter called the "Operator," as follows, and as set forth in Annex I attached hereto and made a part hereof:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of New Mexico, County of McKinley, described as follows:[3] Lot No. 3 of the SW¼, N½ of E½ of SW¼; both in Section 30, Township 13 of Range 9 West of the New Mexico Meridian, New Mexico

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner in possession and entitled to possession and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 5 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 (ninety) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $14,531.40, which is 90 percent of $16,146.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows: See Annex I substituted for that part of 6(a) preceding the colon.

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

Executive Officer - DMEA
Field Team, Region IV

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

SUPPLEMENT I

1a Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/6
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4605 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

SUPPLEMENT I

1a. Names and addresses of owners of lease and their proportion of ownership:

F. O. Manol	P. O. Box 113	Aztec, New Mexico	1/6
Robert B. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Joy C. McNeely	337 S. Terrace Dr.	Wichita, Kansas	1/12
Flo S. McNeely	5546 Merrimac	Dallas, Texas	1/12
John S. McNeely	5546 Merrimac	Dallas, Texas	1/12
G. E. Ponder	3136 Stanford	Dallas, Texas	1/12
Edna F. Ponder	3136 Stanford	Dallas, Texas	1/12
Tom Harley, Jr.	Fourth Nat. Bk. Bldg.	Wichita, Kansas	1/8
Grady B. Coan	Box 451	Aztec, New Mexico	1/30
Thomas A. King		Aztec, New Mexico	1/30
L. G. and/or Evalyn Stearns		Aztec, New Mexico	1/30
E. A. Anderson	5860 Layor Drive	Cleveland, Ohio	1/60
E. J. Hakulinen	4805 S. Michigan	South Bend, Ind.	1/60
O. H. Armstrong	Box 6	Bismarck, N. D.	1/75
D. R. Dobyns	731 S. Delaware	Irving, Texas	1/75
H. V. Copeland		Aztec, New Mexico	1/150

[illegible]

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling [illegible] holes spaced 600 feet apart on a grid as shown on figure 3 which is attached and made a part of this [illegible]. The holes (in any stage) will be drilled within 100 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of stage 1 at locations approved by the [illegible] representative a maximum of [illegible] offset holes will be drilled not closer than 100-foot centers from stage 1 holes.

Stage 3 - Upon the completion of stage 2 at locations approved by the [illegible] representative a maximum of [illegible] additional offset holes will be drilled not closer than [illegible] feet centers from existing holes.

Holes in all stages are estimated to average [illegible] feet in depth and must reach a point below the base of the Todilto limestone to prevent caving and covering the lower part of the Todilto limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for [illegible], in 5-foot runs throughout the entire thickness of the Todilto limestone. Radiometric logging of the holes and/or radiometric screening of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be reassayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 70 holes a total of 6000 feet @ $1.90 per foot -	$ 5,175.00
Stage 2 - Rotary drill [illegible] holes a total of [illegible] feet @ $1.90 per foot -	1,216.00
Stage 3 - Rotary drill 32 holes a total of [illegible] feet @ $1.90 per foot -	[illegible]
Total Estimated Cost	10,176.00
Government Participation @ 90%	[illegible]

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and screening, and [illegible] and all other expenses incurred in completing the work.

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling [illegible] holes spaced 200 feet apart on a grid as shown on Figure 3 which is attached and made a part of exhibit A. No holes (in any stage) will be drilled within 100 feet of the north and south boundaries and none within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the [illegible] representative a maximum of [illegible] offset holes will be drilled not closer than 100-feet eastern from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the [illegible] representative a maximum of [illegible] additional offset holes will be drilled not closer than 50 feet eastern from existing holes.

Holes in all stages are estimated to average 75 feet in depth and must reach a point below the base of the Todilto Limestone to prevent caving and covering the lower part of the Todilto Limestone in the hole. Reimbursement will not be made for incomplete holes.

Samples will be collected, split and one-half retained for [illegible], in 2-foot runs throughout the entire thickness of the Todilto Limestone. Gamma-ray logging of the holes and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for U_3O_8. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 79 holes a total of 6081 feet at $.90 per foot =	$5,475.00
Stage 2 - Rotary drill 40 holes a total of 4080 feet at $.90 per foot =	4,212.00
Stage 3 - Rotary drill 92 holes a total of 7177 feet at $.90 per foot =	6,459.40
Total Estimated Cost	16,146.00
Government Participation @ 90%	$14,531.40

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expenses incurred in completing the work.

EXHIBIT A

Description of the Work

The work will be divided into three stages.

Stage 1 consists of rotary drilling 73 holes spaced 100 feet apart on [illegible] as shown on Figure 1 which is attached [illegible] made a part [illegible] hereof. The holes (in any stage) will be drilled within 100 feet of the north and south boundaries and within 120 feet of the east and west boundaries.

Stage 2 - Upon the completion of Stage 1 at locations approved by the [illegible] representative, a maximum of 40 offset holes will be drilled not closer than 100-foot centers from Stage 1 holes.

Stage 3 - Upon the completion of Stage 2 at locations approved by the [illegible] representative, a maximum of 72 offset holes will be drilled not closer than 50 foot centers from existing holes.

Holes in all stages are estimated to average 75 feet in depth and must reach a point below the base of the Codilto limestone to prevent caving and covering the lower part of the Codilto limestone in the hole. Reimbursement will not be made for incomplete holes.

Cuttings will be collected, split and one-half retained for [illegible], in 2- foot runs throughout the entire thickness of the Codilto limestone. Visible examination of the holes and/or radiometric scanning of all samples will be used to select the samples to be assayed chemically for P_2O_5. All potentially ore grade samples will be assayed chemically.

Estimated Costs of the Project

Stage 1 - Rotary drill 73 holes a total of 6001 feet @ $2.90 per foot -	$17,403.00
Stage 2 - Rotary drill 40 holes a total of 4200 feet @ $2.90 per foot -	12,180.00
Stage 3 - Rotary drill 72 holes a total of 7200 feet @ $2.90 per foot -	20,880.00
Total Estimated Cost	50,463.00
Amount Participation @ 90%	$45,416.70

The above costs include contract drilling, supervision, sampling, assaying, radiometric logging and scanning, and any and all other expenses incurred in completing the work.

ANNEX I

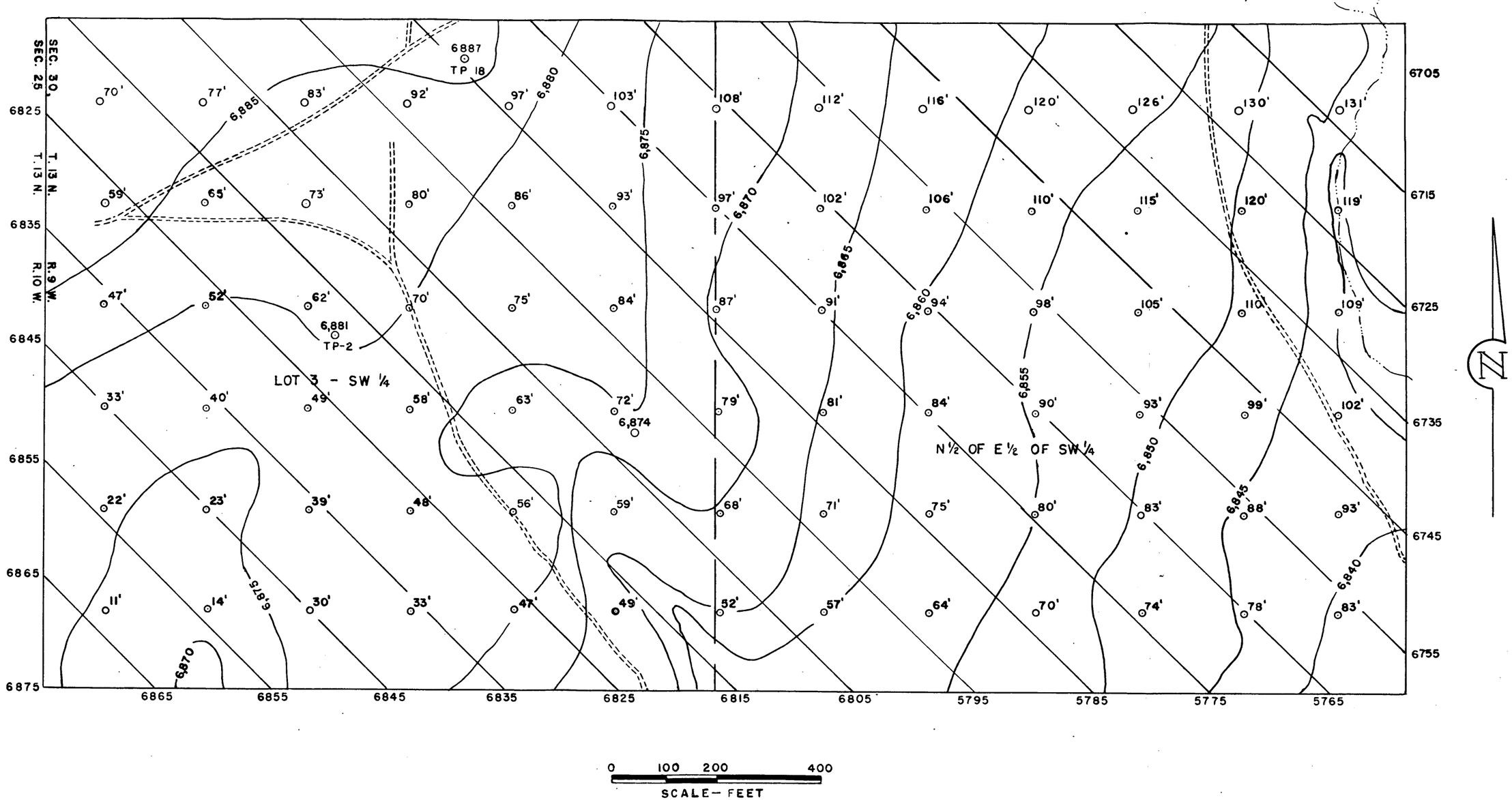
The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:



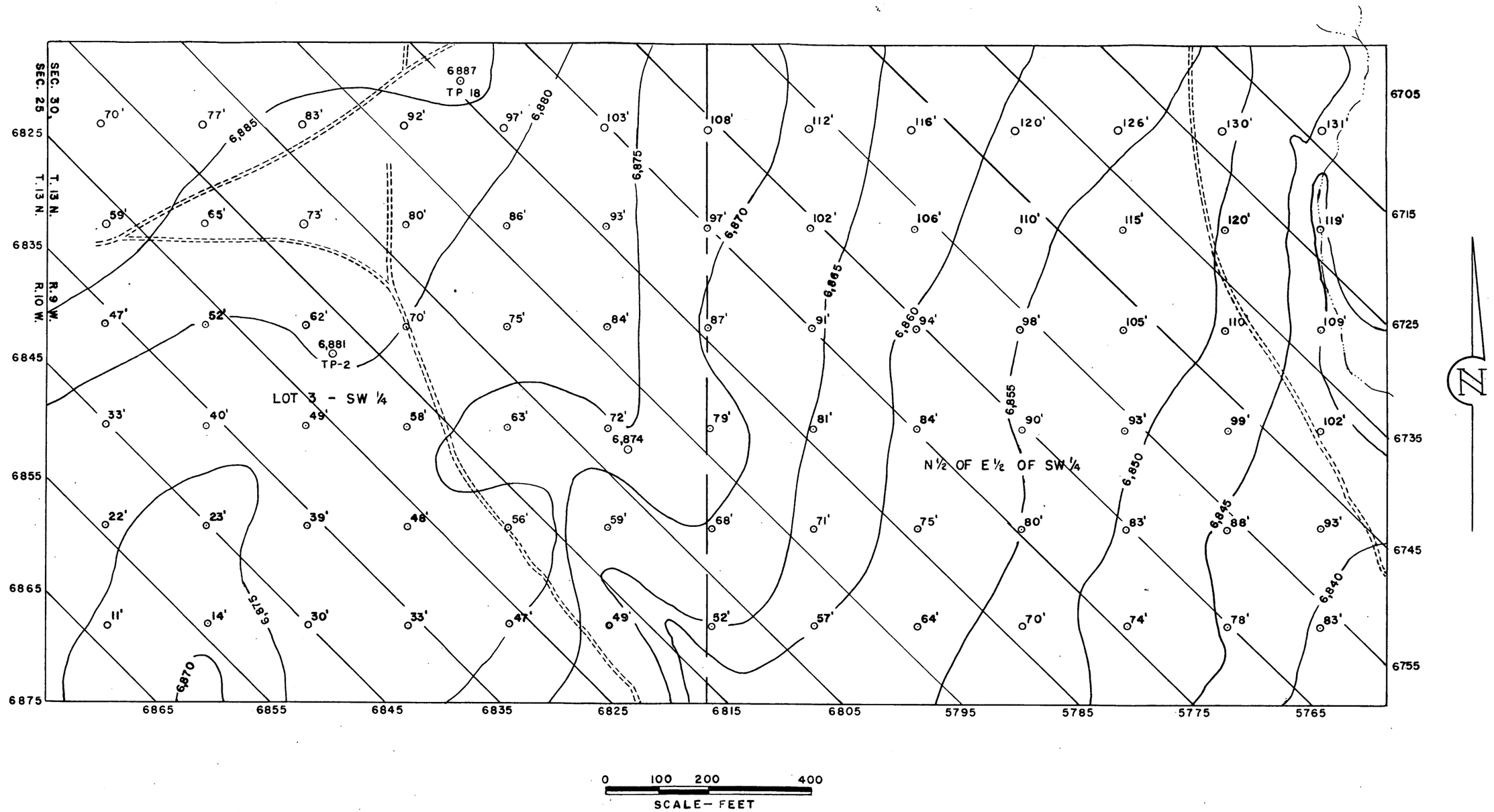
ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO



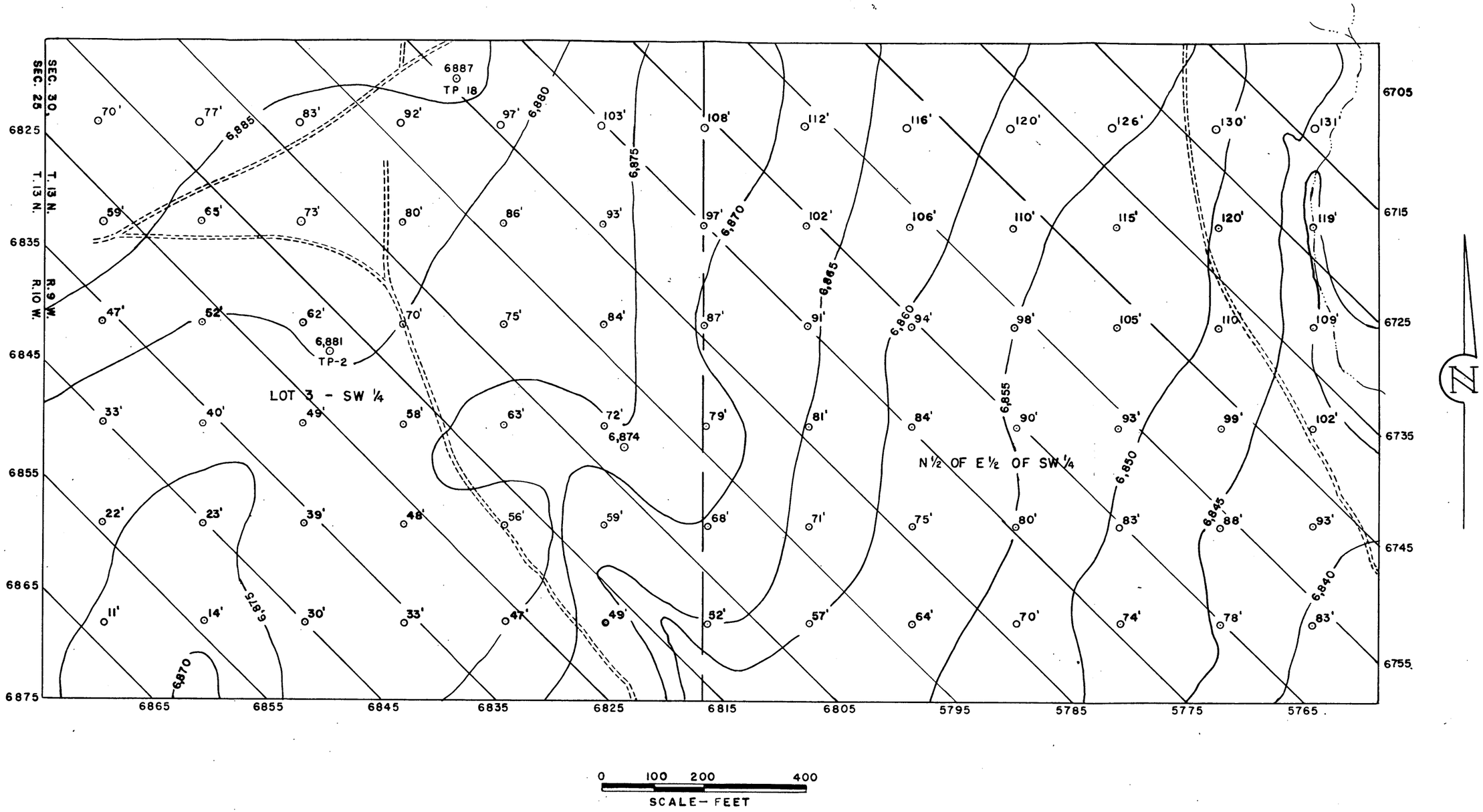
ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO



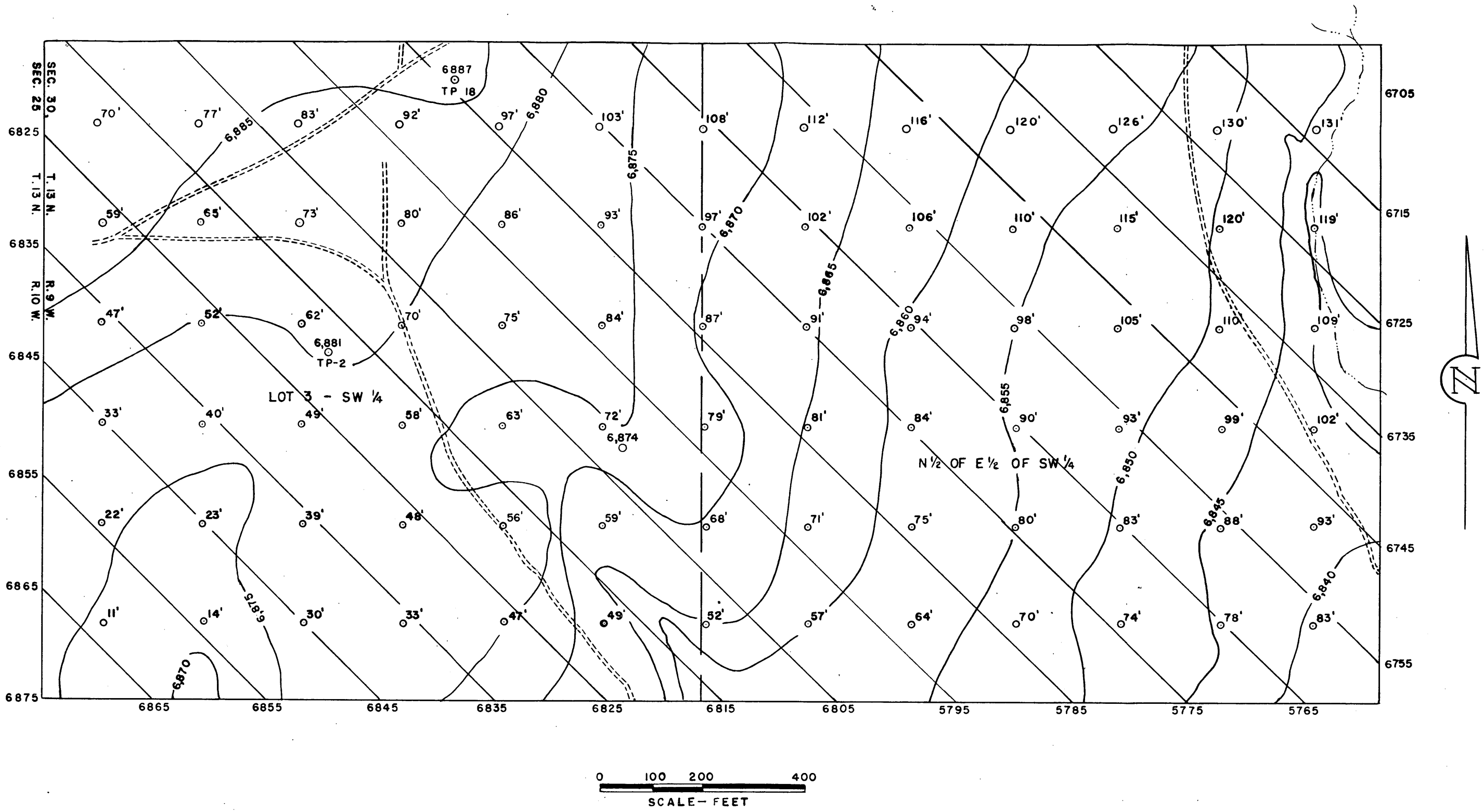
ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO



ADAPTED FROM DATA SUPPLIED BY THE ATOMIC ENERGY COMMISSION

SEPT 1953

DMEA 3089

FIGURE 3 - TOPOGRAPHIC AND STRUCTURAL CONTOUR MAP
(SHOWING STAGE I OF PROPOSED DRILLING WITH DEPTH OF HOLE ESTIMATED TO BE 5 FEET BELOW BASE OF LIMESTONE)
F. O. MANOL LEASE

McKINLEY COUNTY, NEW MEXICO

224 New Customhouse
Denver 2, Colorado

November 4, 1953

Memorandum

To: A. H. Koschmann
W. R. Storms
R. P. Fischer

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3089 (Uranium), F. O. Manol Mine, McKinley County, New Mexico

Enclosed for your information are two copies of a letter dated October 29, 1953, from the Chief, Rare and Miscellaneous Minerals Division, DMEA, to Mr. F. O. Manol.

W. H. King

Enclosure

JFS:es

cc: Docket
Chron.

Mining Division
Date Rec'd
DEC 22 1953
BUREAU OF MINES
Denver, Colorado

GSA TELETYPE CENTER
DEC 21 5 11 PM '53
DENVER, COLO.

397 DN PX

393 PX TS /I-BOM/

TUCSON ARIZONA 12-21-53 357P

W H KING

U S BUREAU OF MINES, 224 NEW CUSTOM HOUSE, DN

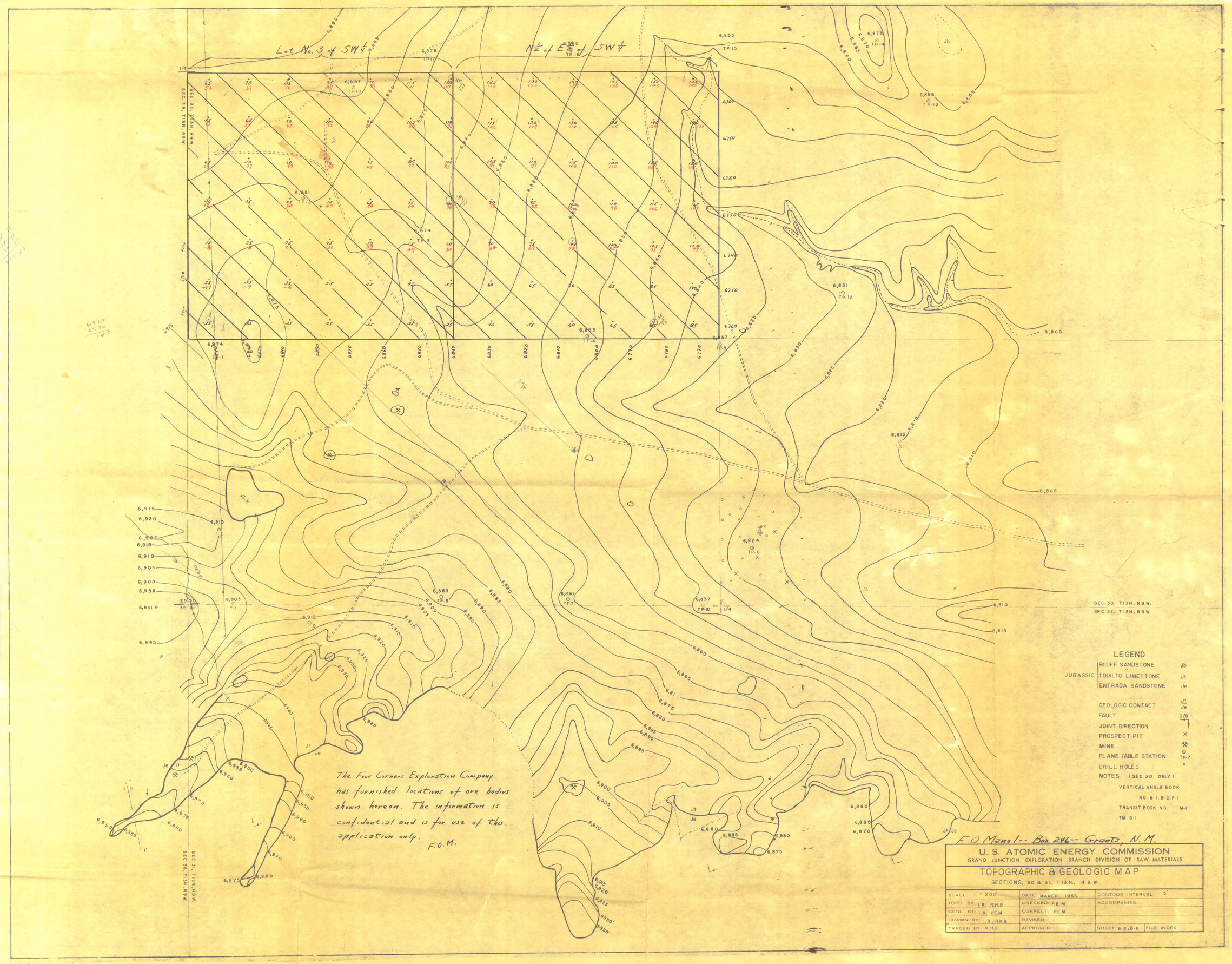
RE TELEPHONE CONVERSATIONS OF THIS MORNING HAVE CHECKED MANOL URANIAM REPORT DMEA-3089 AND NOW BELIEVE FARNHAM MADE ERROR IN COST AND I MADE SAME ERROR IN MY CHECK CALCULATIONS. FARNHAM ESTIMATED 18000 FEET AT 50 CENTS AND 9000 FEET AT ONE DOLLAR. SINCE FOOTAGE TO 100 FEET COSTS 50 CENTS PER FOOT AND OVER 100 FEET COSTS ONE DOLLAR WASHINGTON COSTS OF 92 CENTS A FOOT PROBABLY FAIR ENOUGH.

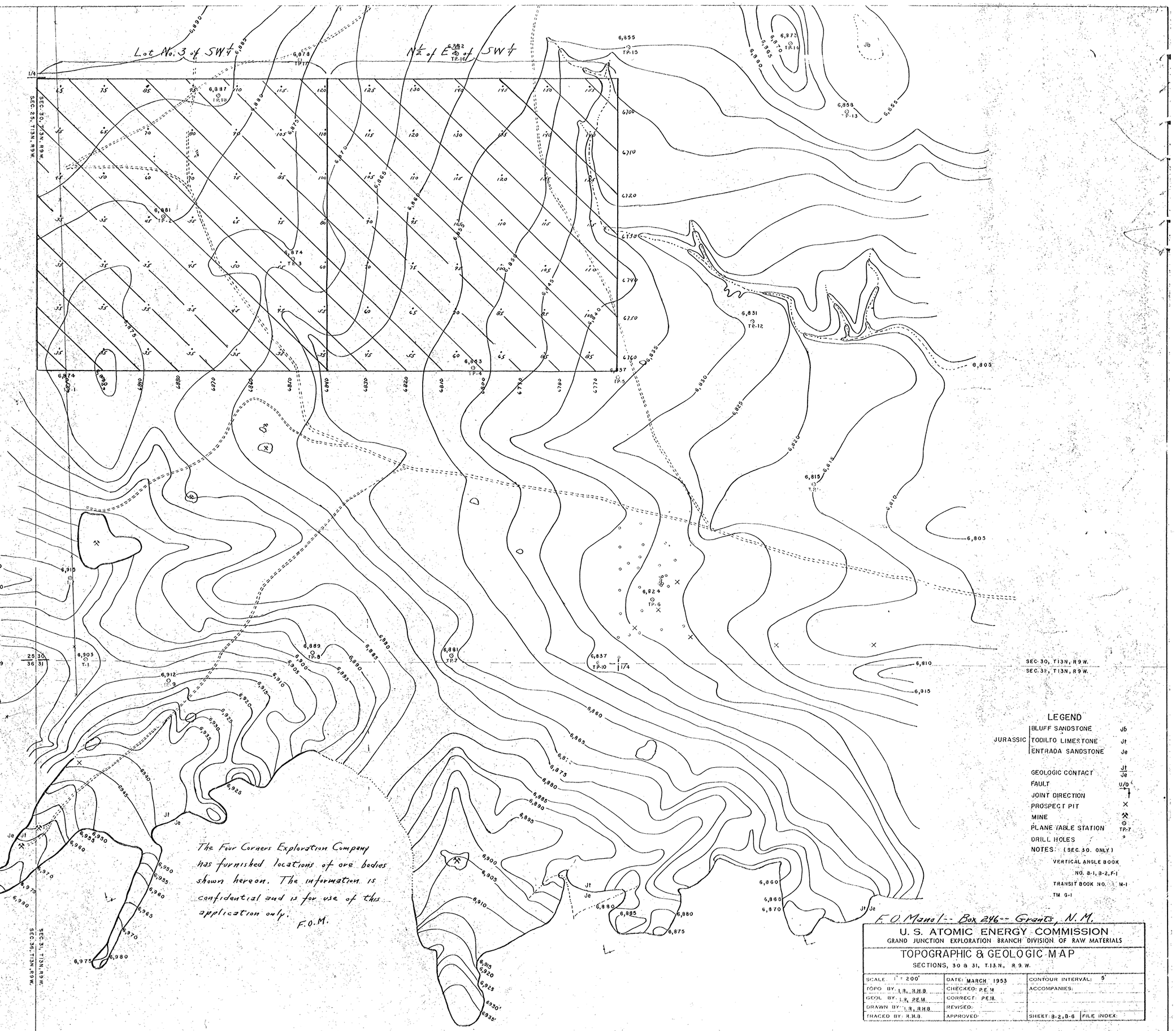
WALTER R STORMS, TUCSON ARIZONA

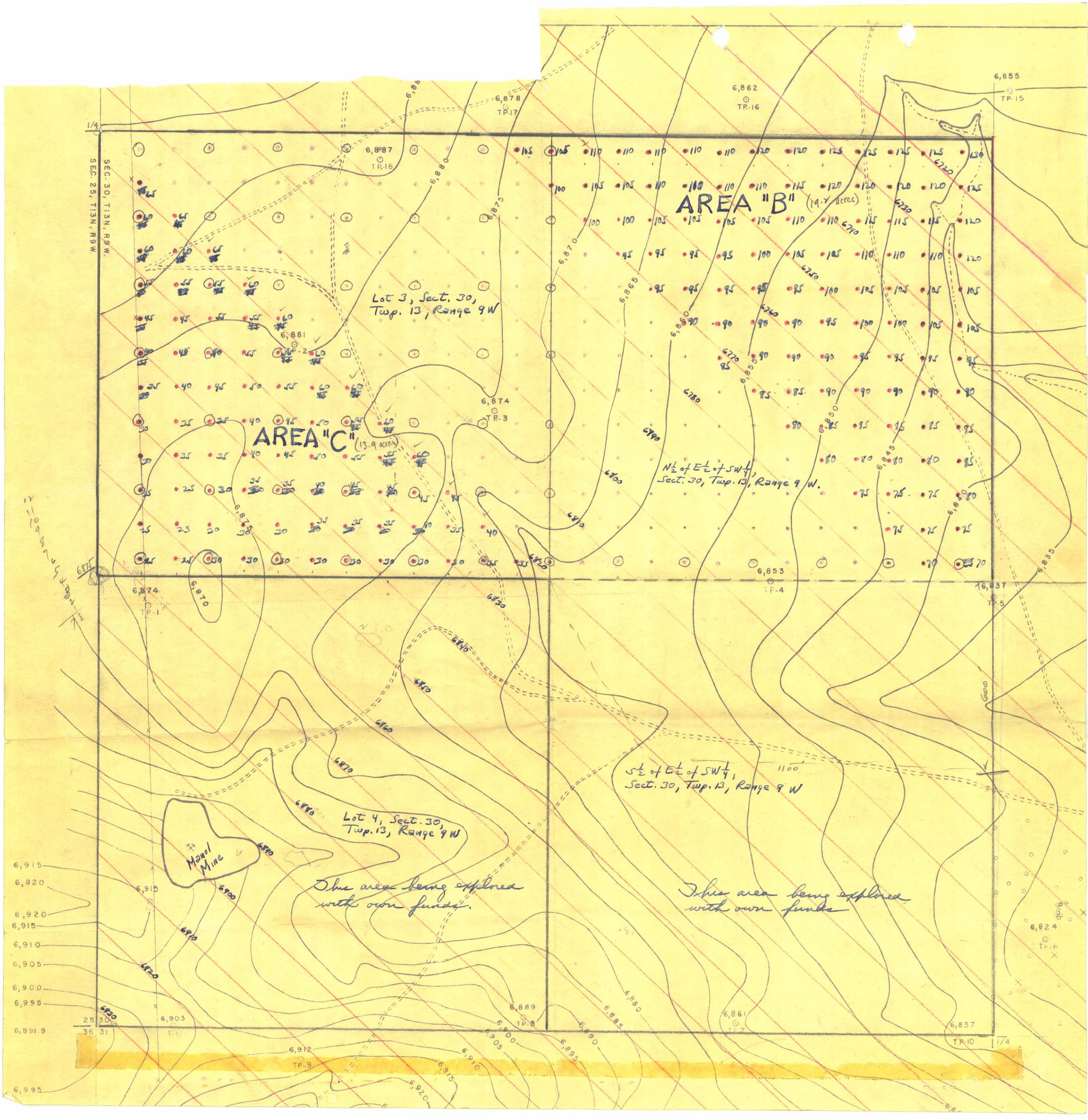
DMEA-3089 18000 50 9000 100 50 100 92

PFS 403P

LMR 408P


Lot No. 3 of SW¼
N½ of E½ of SW¼
SEC. 25, T13N, R9W
SEC. 30, T13N, R9W
SEC. 31, T13N, R9W
SEC. 36, T13N, R9W
SEC. 30, T13N, R9W.
SEC. 31, T13N, R9W.
The Four Corners Exploration Company has furnished locations of ore bodies shown hereon. The information is confidential and is for use of this application only.
F.O.M.
LEGEND
JURASSIC
BLUFF SANDSTONE Jb
TODILTO LIMESTONE Jt
ENTRADA SANDSTONE Je
GEOLOGIC CONTACT
FAULT U/D
JOINT DIRECTION
PROSPECT PIT
MINE
PLANE TABLE STATION TP-7
DRILL HOLES
NOTES: (SEC. 30. ONLY)
VERTICAL ANGLE BOOK
NO. B-1, B-2, F-1
TRANSIT BOOK NO. M-1
TM 6-1
F.O. Manol -- Box 246 -- Grants, N.M.
U. S. ATOMIC ENERGY COMMISSION
GRAND JUNCTION EXPLORATION BRANCH DIVISION OF RAW MATERIALS
TOPOGRAPHIC & GEOLOGIC MAP
SECTIONS, 30 & 31, T13N., R9W.
SCALE: 1" = 200'
DATE: MARCH 1953
CONTOUR INTERVAL: 5'
TOPO BY: I.R. R.H.B
CHECKED: P.E.M
ACCOMPANIES:
GEOL. BY: I.R. P.E.M
CORRECT: P.E.M.
DRAWN BY: I.R. R.H.B
REVISED:
TRACED BY: R.H.B
APPROVED:
SHEET B-2, B-6
FILE INDEX


Lot No. 3 of SW¼
N½ of E½ of SW¼
SEC. 30, T13N, R9W.
SEC. 25, T13N, R9W.
SEC. 31, T13N, R9W.
SEC. 36, T13N, R9W.
The Four Corners Exploration Company has furnished locations of ore bodies shown hereon. The information is confidential and is for use of this application only.
F.O.M.
SEC. 30, T13N, R9W.
SEC. 31, T13N, R9W.
LEGEND
JURASSIC
BLUFF SANDSTONE Jb
TODILTO LIMESTONE Jt
ENTRADA SANDSTONE Je
GEOLOGIC CONTACT Jt/Je
FAULT U/D
JOINT DIRECTION
PROSPECT PIT
MINE
PLANE TABLE STATION TP-7
DRILL HOLES
NOTES: (SEC. 30. ONLY)
VERTICAL ANGLE BOOK NO. 8-1, 8-2, F-1
TRANSIT BOOK NO. M-1
TM G-1
F.O. Manol -- Box 246 -- Grants, N.M.
U. S. ATOMIC ENERGY COMMISSION
GRAND JUNCTION EXPLORATION BRANCH DIVISION OF RAW MATERIALS
TOPOGRAPHIC & GEOLOGIC MAP
SECTIONS, 30 & 31, T.13.N., R.9.W.
SCALE 1" = 200'
TOPO BY: I.R., R.H.B.
GEOL BY: I.R., P.E.M.
DRAWN BY: I.R., R.H.B.
TRACED BY: R.H.B.
DATE: MARCH 1953
CHECKED: P.E.M.
CORRECT: P.E.M.
REVISED:
APPROVED:
CONTOUR INTERVAL: 5'
ACCOMPANIES:
SHEET 8-2, 8-6
FILE INDEX:


SEC. 25, T13N, R9W.
SEC. 30, T13N, R9W.
AREA "B" (19.7 acres)
AREA "C" (13.9 acres)
Lot 3, Sect. 30, Twp. 13, Range 9W
N½ of E½ of SW¼, Sect. 30, Twp. 13, Range 9 W.
S½ of E½ of SW¼, Sect. 30, Twp. 13, Range 9 W
Lot 4, Sect. 30, Twp. 13, Range 9W
Manol Mine
This area being explored with own funds.
This area being explored with own funds
6,855 TP-15
6,862 TP-16
6,878 TP-17
6,887 TP-18
6,881 TP-2
6,874 TP-3
6,853 TP-4
6,837 TP-5
6,824 TP-6
6,861 TP-7
6,889 TP-8
6,912 TP-9
6,837 TP-10
6,874 TP-1
6,903 T-1
6,891.9
6,915
6,920
6,995
1/4

SUPPLEMENT TO INSTRUCTION NUMBER 5
of DMEA Form MF-103

AREA "C"

We are designating two drilling areas on the attached structure contour map. These areas are shown with drill holes indicated with red pencilmarks, with drilling depths given immediately at the right.. The left hand area on the map shall be referred to as Area "C" in this application.

We have under lease the entire quarter section shown on the map but we are mining and exploring the south half of the quarter section with our own funds and therefore we are excluding that area from this application.

Area "C" consists of 13.9 acres, more or less. The borders of the area have not been determined. Only blowsand overlays the orebearing limestone formation because the sandstone has all been eroded away. In this area we consider it unfeasible to explore where the blow sand overburden exceeds 35 feet because this area must be XXXXX mined by open pit methods,and where the ore is at greater depths we do not feel that it will be economic to mine.

On this area we are planning the same type three phase drilling program as we mentioned with reference to Area "A" and Area "B" excepting that we will first open up our primary grid on 200 foot denters to test for the presence of the Todilto limestone which in the south half of the quarter section we often found in part or wholely eroded away. If the Todilto formation is not present there is no point in continuing with the balance of the drilling program.

Drilling Cost Estimate on Area "C":

72	Primary holes	Average depth	46.6	feet	Cost holes each		$23.30	Total	$1,677.60
21	Secondary holes	" "	46.6	"	" "	"	$23.30	Total	489.30
93	Detail holes	" "	46.6	"	" "	"	23.30	"	2,166.90
93	Catching cuttings	" "	25.0	"	" "	"	12.50	"	1,162.50
					Total estimated drilling cost				$5,496.30

Submitted by: F. O. Manol
Box 246
Grants, New Mexico

SUPPLEMENT TO INSTRUCTION NUMBER 5
of DMEA Form MF-103

AREA "B"

We are designating two drilling areas on the attached structure contour map. These areasare shown with drill holes indicated with red pencil marks, with drilling depths given immediately at the right. The right hand area on the map shall be referred to as Area "B" in this application.

We have under lease the entire quarter section shown on the map but we are mining and exploring the south half of the quarter section with our own funds and therefore we are excluding that area from this application.

Area "B" consists of 19.2 acres, more or less. The borders of the area have not been determined. The area has sandstone overlaying the Todilto limestone formation. Therefore ore bodies found in its confines can be mined by underground methods.

We are planning a three phase drilling program on this area which we are calling our primary, secondary, and final detail programs. Our primary drilling in this area will be on a grid of 100 foot centers. These will be plain holes to be logged by the Grants, N.M. AEC Office mobile logging unit. No catching of cuttings is contemplated. We are guessing that the primary drilling will indicate mineralization in 20%, more or less, of the total area drilled. This is on the basis of our drilling experience in other parts of the same section.

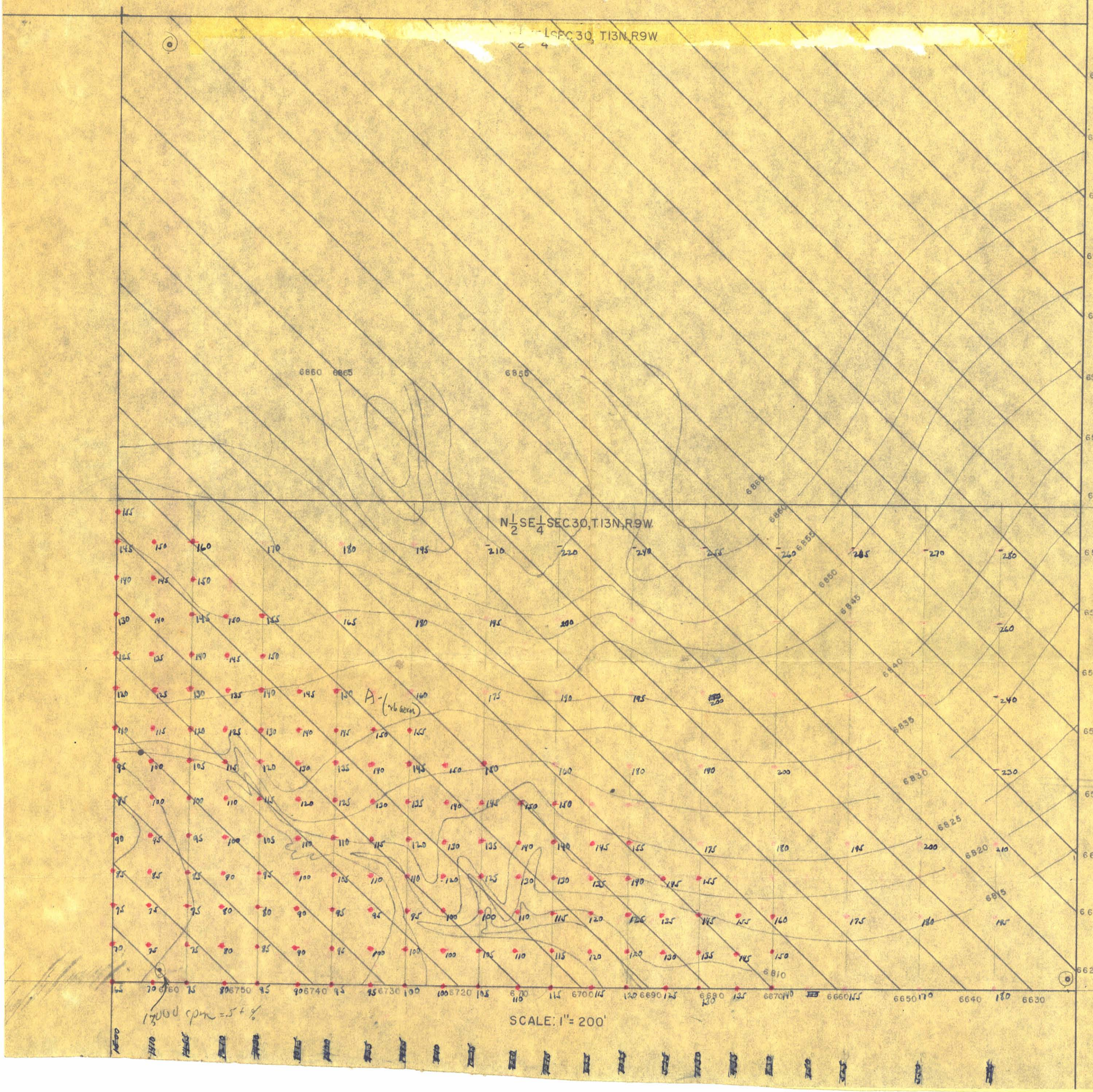
Our secondary drilling phase is a reduction of the 100 foot grid to a 50 foot grid in all suspect mineralized areas. These holes too will be plain holes with no catching of cuttings contemplated, just logging by the AEC. We are guessing that the secondary drilling program will eliminate from further consideration one-half of the total mineralized area as not having potential ore grade mineralization.

This leaves about 10 % of the original drilled area for detail drilling of ore bodies on a 25 foot grid. On our detail holes we plan to catch cuttings XXXX for assay purposes every two feet of depth while in the ore bearing Todilto limestone formation. This will be for about 25 feet in each detail hole.

Drilling Cost Estimate on Area "B":

98	Primary holes	Average depth	105.6	feet	Cost holes each		$55.60	Total	$5,448.80
30	Secondary holes	" "	105.6	"	" "	"	55.60	"	1,668.00
138	Detail holes	" "	105.6	"	" "	"	55.60	"	~~[illegible]~~ 7,672.80
138	Catching cuttings	" "	25.0	"	" "	"	12.50	"	1,725.00
					Total estimated drilling cost				$16,514.60

Submitted by: F. O. Manol
Box 246
Grants, N.M.


LOT C 30, T13N, R9W
N½SE¼SEC.30, T.13N, R9W.
A-(26 acres)
1300 cpm = 5+%
SCALE: 1" = 200'

SUPPLEMENT TO INSTRUCTION NUMBER 5
of DMEA Form MF-103

AREA "A"

We are designating the drilling area shown by red pencil marks with depth figures at the right on the attached structure contour map as Area "A" in this application.

We have under lease the entire quarter section shown on the map but at this time we propose to drill only to depths of 150 feet. Leaving the remainder of the area for development at some future date.

Area "A" consists of about 26 acres, more or less. It has sandstone overlaying the Todilto limestone formation. Therefore ore bodies found inits confines can be mined by underground methods.

We are planning a three phase drilling program on this area which we are calling our primary, secondary, and final detail programs. Our primary drilling in this area will be on a grid of 100 foot centers. These will be plain holes to be logged by the Grants, N.M. AEC Office mobile logging unit. No catching of cuttings is contemplated. We are guessing that the primary drilling will indicate mineralization in 20% (more or less) of the total area drilled. This is on the basis of our drilling experience in other parts of the same section.

Our secondary drilling phase is a reduction of the 100 foot grid to a 50 foot grid in all suspect mineralized areas. These holes too will be plain holes with no catching of samples contemplated, just logging by the AEC. We are guessing that the secondary drilling program will eliminate from further consideration one-half of the total mineralized area as not having potential ore grade mineralization.

This leaves about 10% of the original drilled area for detail drilling of ore bodies on a 25 foot grid. On our detail holes we plan to catch cuttings while in the ore bearing Todilto limestone formation. This will be for about twenty five feet in each detail hole.

Drilling Cost Estimate on Area "A":

146	Primary holes	Average depth	118.5 feet	Cost Holes each	$68.50	Total $10,001.00
43	Secondary holes	" "	118.5 "	" " "	68.50	" 2,945.50
201	Detail holes	" "	118.5 "	" " "	68.50	" 13,768.50
201	Catching Cuttings	" "	25.0 "	" " "	12.50	2,512.50
			Total Estimated Drilling Cost			$29,227.50

J O Manol
Box 246