State Land Board. Aug 27, 1954

Approved assignments of leases, ML. 7550, 7551, 7552, 7553, 7554

To El Paso Natural Gas Co. by

P.F. Catterson & Mary E. Catterson who reserved 2 1/2% overriding royalty.

State Land Board Aug. 6, 1955

Approved assignments of above leases To

Rare Metals Corporation of America, reserving unto El Paso an overriding royalty of 10% of the net profits. S.L.B. provides that the working interests and overriding royalties do not exceed 5% of the gross value of production.

Require subordination agreements

Performance Bond or 3 party guaranty

ore

Brushy Basin

Westwater Canyon

Recapture

Salt Wash

DMEA-3123 - denied

E.R. Randolph

piod to 1953 - 1390 tons

.28% U_3O_8

3.9 to 23% $CaCO_3$

denied because of high lime content of ore. Applicant continued production. reserve est. 200 tons

700

FILE COPY
Surname:

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

JUL 18 1956

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Re: Docket No. DMEA-4137 (Uranium)
School sec. 32, T. 38 S., R. 22 E.
San Juan County, Utah

Gentlemen:

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

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

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

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

Sincerely yours,

G. O. Mittendorf

Administrator

FMMurphy/izm 7-16-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
DMEA Field Team, Reg. III (2)
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

RCL

Docket Copy

Summary of Proposed Project

July 16, 1956

Object: Denial of application for exploration aid.

Docket No.: DMEA-4137

Commodity: Uranium

Applicant: Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Property: Lease School sec. 32, T. 38 S., R. 22 E.,
San Juan County, Utah

Amount of Application: $34,686.00

Date of Application: January 17, 1956

Referred to Region III: February 13, 1956

Field Examination Made: March 30, 1956

Field Team Report Received: June 25, 1956

Work Proposed: 100 non-core holes, to average depth of 150 feet, in two stages. Stage I - 25 holes on 700-foot centers. Stage II - 75 holes as offsets.

Estimated Costs:

15,000 feet non-core drilling @ $2.00/ft.	$30,000.00
Access roads, bulldozer 35 hours @ $15/hr.	525.00
Labor, Supervision, Consultants	1,860.00
Materials and Supplies	642.00
Taxes and Accounting	479.00
Analyses 100 samples @ $5.00/sample	500.00
Contingencies	680.00
Total	$34,686.00

Excerpts from Field Team Report:

The rocks exposed on the property in ascending order are the Salt Wash, Recapture, and Westwater Canyon members of the Morrison formation. Extensive rim exposures show very slight to no radioactivity.

The entire Salt Wash section has the appearance of a lens which is thickest near the west central part of the property. The sandstone ranges from 40 to 80 feet in thickness throughout section 32 and comprises probably 80 percent of the Salt Wash. The subordinate mudstone is generally green where it is less than two feet thick, and it rarely exceeds this thickness. Fossil trees mostly silicified, and carbonaceous material are sparce. Casts of fossil trees are common.

A total of 35 rotary non-core holes, averaging 88.5 feet in depth, were drilled on the property during April and May, 1955. The holes were probed but no samples were assayed chemically. Five holes showed weak mineralization, the others were either barren or abandoned before completion. The drilling failed to delineate any favorable areas or trends to justify further exploration.

There has been considerable exploration in the vicinity of section 32, but no significant ore deposits have been discovered. One small deposit of uranium ore was found about one mile south of the property but subsequent drilling to develop ore reserves yielded negative results. The same lack of significant uranium discoveries extends south from the Blanding mines for about 18 miles.

The field examiners considered the subject property unfavorable for the occurrence of significant ore bodies and recommended that the application be denied. The Field Team concurred in this recommendation.

Commodity Members' Comments: excerpts

U. S. Geological Survey, N. E. Nelson, June 28, 1956

In addition to the drilling, two creeks, Cottonwood, and an unnamed creek, are bordered by miles of cliffs which afford long exposures of parts of the Salt Wash and Recapture beds. No significant showings of radioactive material have been found along the rims. Mr. Nelson concurs in the Field Team's recommendation to deny the application.

U. S. Bureau of Mines, James Paone, July 10, 1956

Mr. Paone agrees with the examining team that the subject school section appears to be unfavorable for the occurrence of significant uranium ore bodies and concurs in their recommendation that the application be denied.

Rare and Miscellaneous Metals Division, F. M. Murphy, July 18, 1956

The property lies within an area where the ratio of sandstone in the Salt Wash is high as compared to the mudstone, and the Salt Wash is comparatively thin as compared to known productive areas. Moreover, the property lies in an area where no significant ore deposit has been found although it has been extensively explored. For these reasons I concur in the Field Team's recommendation.

Conclusion and Recommendation.

This Division concurs in the Field Team's recommendation that the subject application be denied, as apparently the proposed exploration work would not result in the discovery of significant occurrences of uranium ore-bearing material in the Salt Wash sandstone.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

7-13-56

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JUL 13 1956

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

July 10, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paone, Bureau of Mines Alternate Member
Uranium Commodity Committee

Subject: Report of Examination, Docket DMEA 4137 (Uranium)
Rare Metals Corporation of America, School Section 32,
T. 38 S., R. 22 E., San Juan County, Utah

I have reviewed the report of examination, DMEA Docket 4137, Rare Metals Corporation of America, School Section 32, T. 38 S., R. 22 E., San Juan County, Utah, dated June 18 and received in this office June 28, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The examining team considers the subject school section as being unfavorable for the occurrence of significant uranium ore bodies and recommends that the application for exploration assistance be denied.

We concur in the recommendation that the application be denied.

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

James Paone

James Paone

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

RECEIVED
JUL 13 1956

July 10, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paone, Bureau of Mines Alternate Member
Uranium Commodity Committee

Subject: Report of Examination, Docket DMEA 4137 (Uranium)
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We concur in the recommendation that the application be denied.

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

James Paone

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

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The examining team considers the subject school section as being unfavorable for the occurrence of significant uranium ore bodies and recommends that the application for exploration assistance be denied.

We concur in the recommendation that the application be denied.

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

James Paone

6/29/56

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1956

June 28, 1956

Re: DMEA 4137
Rare Metals Corp. of America
School Section 32
San Juan Co., Utah
$34,686.00 - Uranium

Memorandum

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

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

Subject: Review of Field Ream report.

The applicant requested assistance in doing further drilling on a school section. A total of 35 rotary non-core holes were drilled in April and May 1955. Four holes showed weak mineralization when probed.

In addition to the drilling, two creeks, Cottonwood and an unnamed creek, are bordered by miles of cliffs which afford long exposures of parts of the Salt Wash and Recapture beds. No significant showings of radioactive material have been found along the rims.

The immediate area is singularly lacking in radioactive shows. A small amount of ore was mined 1-mile of the section 32, but drilling failed to extend the small showing.

The examiners and the Field Team recommend denial of the application.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1956

June 28, 1956

[illegible] 4137
[illegible] Uranium Corp. of [illegible]
School Section 32
San Juan Co., Utah
(34,686.00) - Uranium

Memorandum

To: [illegible], Alaska Mineral Exploration Administration

From: N. [illegible] Nelson, [illegible] Geological Survey

Subject: Review of field exam report.

The applicant requested assistance in doing further drilling on a school section. A total of 35 rotary non-core holes were drilled in April and May 1955. Four holes showed weak mineralization when probed.

In addition to the drilling, two creeks, Cottonwood and an unnamed creek, are bordered by miles of cliffs which afford long exposures of parts of the salt wash and sandstone beds. No significant showings of radioactive material have been found along the rims.

The immediate area is singularly lacking in radioactive shows. A small amount of ore was mined 1-mile of the section 32, but drilling failed to extend the small showing.

The examiners and the field exam recommend denial of the application.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

N.E.Nelson:btr
C 6/28/56

cc: Director's reading file (4212)
Branch reading file (4212)
DMA(3)
Chron. file
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1956

June 28, 195[illegible]

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chool section [illegible]
an Juan Co., Utah
[illegible] - [illegible]

Memorandum

To: [illegible] Files, [illegible] Minerals Exploration Administration

From: [illegible] Nelson, [illegible] Soils Test Survey

Subject: [illegible] of field case report.

The applicant requested assistance in doing further drilling on a school section. A total of 35 rotary non-core holes were drilled in April and May 1955. Our holes showed weak mineralization when probed.

In addition to the drilling, two creeks, Cottonwood and an unnamed creek, are bordered by miles of cliffs which afford long exposures of parts of the salt ash and sandstone beds. No significant showings of radioactive material have been found along the rims.

The immediate area is singularly lacking in radioactive shows. A small amount of ore was mined 1-mile of the section [illegible], but drilling failed to extend the small showing.

The examiners and the [illegible] can recommend denial of the application.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

N. E. Nelson:btr
6/28/56

N. E. Nelson

cc: Director's reading file (4212)
Branch reading file (4212)
[illegible] (3)
Chron. file
Docket file
J. D. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
JUN 29 1956

June 28, 1956

[illegible] 4137
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[illegible] school section [illegible]
[illegible] San Juan Co., Utah
[illegible] 4,[illegible] [illegible] - [illegible]

[illegible]

[illegible] [illegible] [illegible] file, [illegible] Journal [illegible] Exploration Administration

[illegible] [illegible] [illegible], [illegible] Geological Survey

[illegible] review of [illegible] our report.

The applicant requested assistance in doing further drilling on a school section. A total of 35 rotary non-core holes were drilled in April and May 1955. Our drilling showed weak mineralization when probed.

In addition to the drilling, two areas, [illegible] and an unnamed area, are bordered by miles of cliffs which afford long exposures of parts of the salt wash and sandstone beds. No significant showings of radioactive material have been found along the rims.

The immediate area is singularly lacking in radioactive shows. A small amount of ore was mined 1-mile of the section [illegible], but drilling failed to extend the small showing.

The examiners and the [illegible] recommend denial of the application.

I concur with the recommendation.

W. E. Nelson

W. E. Nelson

W. Nelson:btr
G 6/28/56

cc: Director's reading file (4212)
Branch reading file (4212)
[illegible](3)
Chron. file
Docket file
J. M. Crawford, 3641
J. O. Hosted, 3210

7/2/56

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

RECEIVED
JUN 25 1956

June 21, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4137 (Uranium) Rare Metals Corporation of America, School Section 32, T. 38 S., R. 22 E., San Juan County, Utah

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

The field examiners conclude that the chances for finding a significant ore deposit in this area are not good. They recommend that the application be denied. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

DMEA
Date Rec'd.

JUN 20 1956

BUREAU OF MINES
Denver, Colorado

RECEIVED
JUN 25 1956

P. O. Box 360
Grand Junction, Colorado

June 11, 1956

TRANSMITTED
JUN 21 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: John F. Shaw
From: J. William Hasler
E. N. Harshman

Subject: Transmittal of joint geologic-engineering report, DMEA docket 4137 (Uranium), Rare Metals Corporation of America, (School sec. 32, T. 38 S., R. 22 E., SLM), San Juan County, Utah.

Enclosed is a joint geologic and engineering report by H. F. Albee, U. S. Geological Survey, and H. F. Robertson, U. S. Bureau of Mines, on the Rare Metals Corporation of America, School Section property in San Juan County, Utah.

The application was referred to the field and an examination was made March 30, 1956. The applicant proposes to explore for uranium in the Salt Wash and Bluff sandstone members of the Morrison formation of Jurassic age. The field examination disclosed that the ore-bearing sandstone in the area consisted of a massive sandstone unit 40 to 80 feet in thickness. The unit was thickest in the vicinity of the section but was seen to thin rapidly in either direction. The massive sandstone unit was interspersed with abundant green mudstone; however, mineralization in the area is restricted to radioactive carbonaceous material and no mineralization was observed disseminated throughout the sandstone member itself. There has been no production in the immediate area and considerable exploration work prior to the date of this application has not disclosed any uranium deposits of commercial size and grade. The property also lies in an area where the ratio of sandstone to mudstone in the Salt Wash member is high and the Salt Wash itself is thin relative to that in productive areas.

These facts, although regionally favorable, are not favorable for the local area. It is concluded that the chances of finding ore deposits of commercial size and grade in the area are not good. It is, therefore, recommended that the application for Government assistance be denied. I concur with the recommendations and conclusions of the examining team.

The Atomic Energy Commission was consulted in connection with this application. The brochure is returned herewith.

E. N. Harshman
for J. William Hasler,
Geologist

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

JWh/mlr/ch

Enclosures

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

RECEIVED
JUN 25 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

TRANSMITTED
JUN 21 1956

DMEA 4137

RARE METALS CORPORATION OF AMERICA

School Sec. 32

San Juan County, Utah

Uranium

Joint Engineering and Geologic Report

By

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

H. F. Albee, geologist
Geological Survey

H. F. Robertson, mining engineer
Bureau of Mines

June 18, 1956

DMEA 4137

RARE METALS CORPORATION OF AMERICA
SCHOOL SECTION 32
SAN JUAN COUNTY, UTAH

CONTENTS

Joint Engineering and geologic report — Page

Introduction and summary 1
Acknowledgments 1
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History and production 2
Ownership and extent 3
Present status 3
    Exploration and development 3
    Mining and milling equipment and other facilities 4
Geology 4
Ore deposits 6
Ore reserves 6
Proposed exploration 6
Conclusions and recommendations 7

ILLUSTRATIONS

Figure — Follows Page

1. Map showing location of school section 32, T. 38 S., R. 22 E., San Juan County, Utah, Rare Metals Corp. of America, DMEA 4137 2

2. Geologic map showing existing drill holes and proposed Stage I Drill Holes on Rare Metals Corp. of America, School Sec. 32, T. 38 S., R. 22 E., S. L. M., San Juan County, Utah 5

DMEA 4137
RARE METALS CORPORATION OF AMERICA
School Section 32
San Juan County, Utah

RECEIVED
JUN 25 1956

INTRODUCTION AND SUMMARY

The Rare Metals Corporation of America, 10th Floor, First Security Building, Salt Lake City, Utah, applied to the Defense Minerals Exploration Administration for assistance in the exploration for uranium in school sec. 32, T. 38 S., R. 22 E., S.L.M. San Juan County, Utah. The applicant proposes a program consisting of 100 holes, 150 feet in depth, at an overall cost of $34,686.00, to explore the Jurassic Salt Wash member and the Bluff sandstone member of the Morrison formation for uranium-vanadium ore deposits. Non-core drilling, with samples taken at 2- to 4-foot intervals, is proposed as the exploration method.

The property was examined on March 30, 1956 by H. F. Albee, geologist, Geological Survey, and on May 22, 1956 by H. F. Robertson, mining engineer, Bureau of Mines.

The property has extensive rim exposures that show very slight to no radioactivity. It lies in an area where, although considerable exploration has been done, no significant ore deposits are known. The examining team, therefore, considers the subject school section as being unfavorable for the occurrence of significant uranium ore bodies and recommends that the application for government assistance be denied.

ACKNOWLEDGMENTS

The examining geologist was accompanied by L. A. Hansen, chief geologist for Rare Metals Corporation of America.

The Atomic Energy Commission was contacted concerning the subject area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

Utah school section 32, T. 38 S., R. 22 E., Salt Lake Meridian, is about 12 airline miles south of Blanding, Utah, and is reached by travelling 17 miles south of Blanding on Utah Highway 47, thence 9 miles westerly on a dirt road to Cottonwood Creek, thence north to the southwest corner of section 32 (fig. 1).

The property is in an area of broad benches, bordered by steep cliffs and flat-topped mesas. Section 32 is cut on the westerly side by Cottonwood Creek. An unnamed creek enters at the northeast corner, runs southwest to a point southwest of the center, thence southeasterly and leaves the section about the middle of the south boundary line.

The climate is arid and with hot summers and moderate winters. The small amount of yearly precipitation usually consists of scattered showers during the summer months and light snow flurries during the winter.

Water for drilling and mining purposes would be hauled from Cottonwood Creek but doemstic water would have to come from Blanding, Utah. Personnel on projects in the area usually live in house-trailers on the property or commute from Blanding.

The nearest major source of supplies is Grand Junction, Colorado, 220 miles from the property.

HISTORY AND PRODUCTION

The history of the area dates back to about 1930 when the Salt Wash outcrops were explored for vanadium. More recent uranium exploration is evident but no significant ore bodies have been developed in the vicinity of section 32. There has been no uranium production from the subject property.

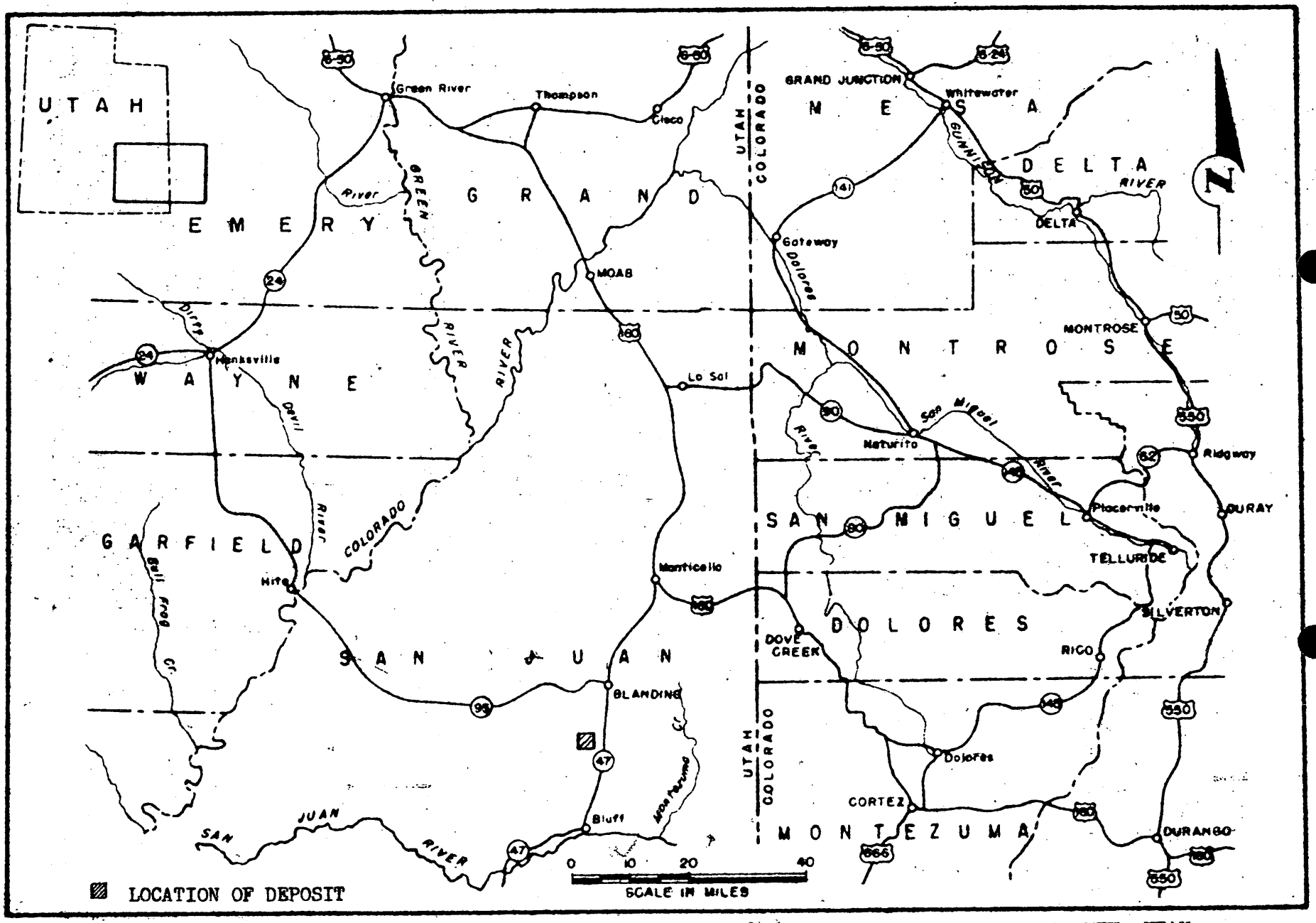

FIGURE 1 - MAP SHOWING LOCATION OF SCHOOL SECTION 32, T. 38 S., R. 22 E., SAN JUAN COUNTY, UTAH.
RARE METALS CORPORATION OF AMERICA. DMEA 4137

OWNERSHIP AND EXTENT

Utah Mineral lease No. 7553, dated March 19, 1954, granted P. F. Catterson the right to mine, remove, and dispose of uranium and vanadium from all of Section 32, (approximately 640 acres), T. 38 S., R. 22 E., Salt Lake, Meridian. The State of Utah holds a 12-1/2% overriding royalty on all uranium-vanadium production from the section. P. F. Catterson and wife, Mary E. Catterson, assigned the lease to El Paso Natural Gas Company on June 14, 1954, reserving an overriding royalty of 2-1/2% of the value of all uranium and vanadium ore produced from the property. El Paso Natural Gas Company assigned the lease to Rare Metals Corporation of America on May 5, 1955, reserving an overriding royalty of 10 percent of the net profits derived from the sale or disposition of all uranium and vanadium ores produced from the property. Rare Metals Corporation of America now control the property and are responsible for any operations performed thereon.

PRESENT STATUS

Exploration and Development

A total of 35 rotary non-core holes, averaging 88.5 feet in depth, were drilled on the property during April and May, 1955. The holes were probed for radiometric anomalies but no samples were assayed chemically. Holes 4, 8, 9, 10, and 22 showed weak mineralization when probed. All other holes were either barren or abandoned before completion. The drilling failed to delineate any favorable areas or trends to justify further exploration.

There has been considerable exploration in the vicinity of section 32, but no significant ore deposits have been discovered. One small deposit of uranium ore was found about one mile south of the property but subsequent drilling to develop reserves yielded negative results. The same lack of significant uranium discoveries extends south from the Blanding mines for about 18 miles.

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No ore has been produced from Section 32 and there are no developed ore reserves.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property. Minor supplies could be bought in Blanding, Utah, but would mostly come from Moab, Utah or Grand Junction, Colorado. There is no housing on the property.

The nearest AEC buying station is located at Monticello, Utah, a distance of 52 miles from the property.

Electricity would be supplied by gasoline or diesel-powered light plants.

GEOLOGY

School section 32 lies in the southwestern part of the Monticello mining district in Southeastern Utah. The Abajo Mountains lie about 30 miles due north of the property and the Comb Ridge anticline lies about 6 miles to the west. The rocks at the Comb Ridge anticline dip easterly from 30° to 60°. Elsewhere in the area the rocks dip from 1° to 2° southerly and in places are horizontal. In section 32 the beds are horizontal and no evidence of faulting can be seen.

The rocks exposed in the vicinity of the property are, in ascending order, the Bluff sandstone and the Morrison formation of Jurassic age, and the Burro Canyon formation and the Dakota sandstone of Cretaceous age.

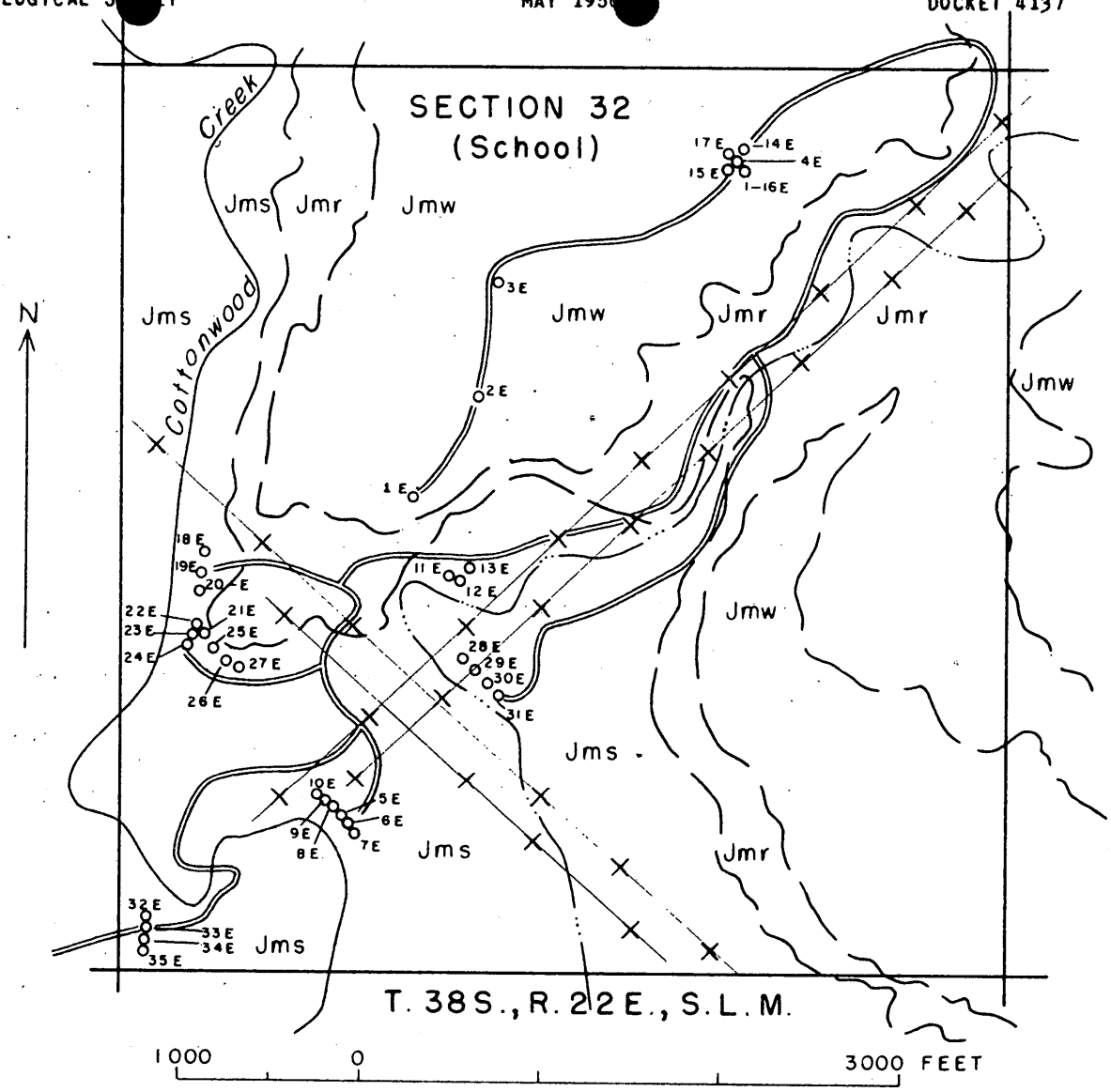
The Bluff sandstone is a thick, cliff-forming, gray-white sandstone composed of large scale cross laminations of probable eolian origin. It usually weathers into rounded Entrada-like cliffs or knobs. A strong northeast orientation of the cross-bedding is a distinguishing feature of this formation. A local, lenticular sandstone that ranges from a wedge-edge up to 80 feet thick lies between the Bluff and the Morrison formations. This is thought to be reworked Bluff which, in general lithology, resembles the Bluff sandstone.

The Morrison formation in this area consits of, from oldest to youngest, the Salt Wash, Recapture, Westwater Canyon, and Brushy Basin members. The Salt Wash normally consists of a series of grayish-white, cross-laminated sandstone beds separated by mudstone lenses. It usually weathers to form cliffs and benches. In section 32 the Salt Wash member ranges in thickness from 40 to 80 feet and mostly forms one massive cliff, the base of which is covered by recent sediments. Intra-formational channels are common but as the base is covered, channeling into the underlying Bluff could not be determined. The entire Salt Wash section has the appearance of a lens which is thickest within the property near drill holes 22 E., 23 E., and 24 E., (fig. 2), and thins both to the north and south. The sandstone comprises probably over 80 percent of the Salt Wash on the property. The subordinate mudstone is generally green where it is less than two feet thick, and it rarely exceeds this thickness. Fossil trees mostly silicified, and carbonaceous material are sparse. Casts of fossil trees are fairly common.

The Recapture shale consists of a series of maroon and gray mudstone beds with lenses of generally friable, white sandstone. At places in section 32 the upper surface of the Salt Wash has considerable relief, and the Recapture rests on this undulating surface in what appears to represent a hiatus. At other places the Recapture interfingers with the Salt Wash. The Recapture shale is about 40 feet thick and weathers to form a slope.

The Westwater Canyon is a greenish-yellow to gray sandstone with a subordinate amount of green to gray shale. It is in excess of 150 feet thick and weathers to form cliffs.

The Brushy Basin member and the overlying Cretaceous Burro Canyon and Dakota formations are not present in section 32. The Westwater sandstone caps most of the buttes and benches.



EXPLANATION

Jmw	**JURASSIC MORRISON FORMATION:**
Jmr	Jmw, WESTWATER CANYON MEMBER
Jms	Jmr, RECAPTURE MEMBER
	Jms SALT WASH MEMBER

GEOLOGIC CONTACT

10E EXISTING DRILL HOLES

X PROPOSED DRILL HOLES

Note: INFORMATION MODIFIED FROM APPLICANTS MAP.

Figure 2. GEOLOGIC MAP SHOWING EXISTING DRILL HOLES AND PROPOSED STAGE I DRILL HOLES ON RARE METALS CORPORATION OF AMERICA SCHOOL SECTION 32, T. 38 S., R. 22 E., S.L.M., SAN JUAN COUNTY, UTAH.

ORE DEPOSITS

There are no known uranium ore deposits in section 32 nor are there any significant known deposits in the vicinity. Evidence of considerable exploration can be seen in the area and one small mine produced some uranium.

This mine is about 1 mile south of section 32 and just below the Bluff-Salt Wash contact. The ore was from mineralized carbonaceous logs. Uranium was not found disseminated in sandstone away from the logs. Other logs still present, but with little or no radioactivity, appear to be composed of low-rank coal. The area surrounding the mine has been prospected by drilling but with apparent negative results.

The Blanding groupof mines lies about 12 miles northerly from the property and a few small mines and prospects lie along Butler Wash, which is about 5 miles west of the property. The area in the Cottonwood Wash drainage south of the Blanding mines is characterized by the lack of ore discoveries. Very slight radioactivity along the Salt Wash outcrop and in some fossil logs in section 32 was found during the field examination. Quantitative values of radioactivity reported in the application were all equivalent values. The drill holes from which these values were reported were visited and the cuttings tested with a scintillation counter. Very faint radioactivity was detected from two of the holes.

ORE RESERVES

There is no basis on which to estimate ore reserves on the property.

PROPOSED EXPLORATION

The applicant proposes drilling a total of 100- non-core holes to an average depth of 150 feet. The estimated overall cost of the project would be $34,686.00 with government assistance of $26,014.50. The first 25 holes would be drilled on about 700-foot centers along four lines as shown on fig. 2. The applicant refers to this first stage as reconnaissance

drilling. The remaining 75 holes would be used for detailed drilling of any ore bodies or geologically favorable areas that might be discovered by the stage I drilling.

The applicant feels justified in exploring the Morrison Salt Wash and the Bluff sandstone, both of Jurassic age, since small deposits of uranium have been discovered in both formations. The holes would bottom in the Summerville formation.

The cost estimates of the proposed program are given in detail in the application. Contract drilling is at $2.00 a foot. Bulldozing 35 hours is at $15.00 an hour. Labor and consultants are estimated at $1,860.00. Pickup truck, passenger car use and electronic equipment rental are estimated at $642.00. Employment taxes and accounting costs require $479.00 and sample analyses will cost $500.00. Contingencies are $680.00.

CONCLUSIONS AND RECOMMENDATIONS

Exploration for uranium ore deposits on school section 32 would be a highly speculative venture and is not recommended. The widespread occurrence of green mudstone and casts of slightly radioactive fossil logs associated with a scour and fill type sandstone does not render the property favorable. It lies within a non-productive area where, in places, similar conditions exist, and in other places rapid changes in sedimentation have taken place.

The property lies also within an area where the ratio of sandstone to mudstone in the Salt Wash is high with respect to sandstone, and the Salt Wash is comparatively thin as compared to known productive areas. These facts, although regionally unfavorable, are not conclusively unfavorable for a local area. However, when found in an area where there have been no significant discoveries and on a property with extensive rim exposures and some drilling done with only very slight and sparse mineralization found, then the regional criteria would seem to apply locally.

The field examiners consider the subject school section 32 to be geologically unfavorable for the occurrence of significant ore bodies and recommend that the application for government aid be denied.

6/26/56

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

June 21, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
JUN 25 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4137 (Uranium)
Rare Metals Corporation of America, School Section 32,
T. 38 S., R. 22 E., San Juan County, Utah

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

The field examiners conclude that the chances for finding a significant ore deposit in this area are not good. They recommend that the application be denied. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

DMEA
Date Rec'd.

JUN 20 1956

RECEIVED

JUN 25 1956

BUREAU OF MINES
Denver, Colorado

TRANSMITTE

JUN 21 1956

P. O. Box 360
Grand Junction, Colorado

June 11, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: John F. Shaw
From: J. William Hasler
E. N. Harshman

Subject: Transmittal of joint geologic-engineering report, DMEA docket 4137 (Uranium), Rare Metals Corporation of America, (School sec. 32, T. 38 S., R. 22 E., SLM), San Juan County, Utah.

Enclosed is a joint geologic and engineering report by H. F. Albee, U. S. Geological Survey, and H. F. Robertson, U. S. Bureau of Mines, on the Rare Metals Corporation of America, School Section property in San Juan County, Utah.

The application was referred to the field and an examination was made March 30, 1956. The applicant proposes to explore for uranium in the Salt Wash and Bluff sandstone members of the Morrison formation of Jurassic age. The field examination disclosed that the ore-bearing sandstone in the area consisted of a massive sandstone unit 40 to 80 feet in thickness. The unit was thickest in the vicinity of the section but was seen to thin rapidly in either direction. The massive sandstone unit was interspersed with abundant green mudstone; however, mineralization in the area is restricted to radioactive carbonaceous material and no mineralization was observed disseminated throughout the sandstone member itself. There has been no production in the immediate area and considerable exploration work prior to the date of this application has not disclosed any uranium deposits of commercial size and grade. The property also lies in an area where the ratio of sandstone to mudstone in the Salt Wash member is high and the Salt Wash itself is thin relative to that in productive areas.

These facts, although regionally favorable, are not favorable for the local area. It is concluded that the chances of finding ore deposits of commercial size and grade in the area are not good. It is, therefore, recommended that the application for Government assistance be denied. I concur with the recommendations and conclusions of the examining team.

The Atomic Energy Commission was consulted in connection with this application. The brochure is returned herewith.

E. N. Harshman
for J. William Hasler,
Geologist

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

JWh/mlr/eh

Enclosures

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

RECEIVED
JUN 25 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

TRANSMITTED
JUN 21 1956

DMEA 4137

RARE METALS CORPORATION OF AMERICA

School Sec. 32

San Juan County, Utah

Uranium

Joint Engineering and Geologic Report

By

H. F. Albee, geologist
Geological Survey

H. F. Robertson, mining engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
6-29-56
(date)

June 18, 1956

DMEA 4137

RARE METALS CORPORATION OF AMERICA
SCHOOL SECTION 32
SAN JUAN COUNTY, UTAH

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  Exploration and development 3
  Mining and milling equipment and other facilities 4
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Ore deposits 6
Ore reserves 6
Proposed exploration 6
Conclusions and recommendations 7

ILLUSTRATIONS

Figure — Follows Page

1. Map showing location of school section 32, T. 38 S., R. 22 E., San Juan County, Utah, Rare Metals Corp. of America, DMEA 4137 2

2. Geologic map showing existing drill holes and proposed Stage I Drill Holes on Rare Metals Corp. of America, School Sec. 32, T. 38 S., R. 22 E., S. L. M., San Juan County, Utah 5

DMEA 4137
RARE METALS CORPORATION OF AMERICA
School Section 32
San Juan County, Utah

RECEIVED
JUN 25 1956

INTRODUCTION AND SUMMARY

The Rare Metals Corporation of America, 10th Floor, First Security Building, Salt Lake City, Utah, applied to the Defense Minerals Exploration Administration for assistance in the exploration for uranium in school sec. 32, T. 38 S., R. 22 E., S.L.M. San Juan County, Utah. The applicant proposes a program consisting of 100 holes, 150 feet in depth, at an overall cost of $34,686.00, to explore the Jurassic Salt Wash member and the Bluff sandstone member of the Morrison formation for uranium-vanadium ore deposits. Non-core drilling, with samples taken at 2- to 4-foot intervals, is proposed as the exploration method.

The property was examined on March 30, 1956 by H. F. Albee, geologist, Geological Survey, and on May 22, 1956 by H. F. Robertson, mining engineer, Bureau of Mines.

The property has extensive rim exposures that show very slight to no radioactivity. It lies in an area where, although considerable exploration has been done, no significant ore deposits are known. The examining team, therefore, considers the subject school section as being unfavorable for the occurrence of significant uranium ore bodies and recommends that the application for government assistance be denied.

ACKNOWLEDGMENTS

The examining geologist was accompanied by L. A. Hansen, chief geologist for Rare Metals Corporation of America.

The Atomic Energy Commission was contacted concerning the subject area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

Utah school section 32, T. 38 S., R. 22 E., Salt Lake Meridian, is about 12 airline miles south of Blanding, Utah, and is reached by travelling 17 miles south of Blanding on Utah Highway 47, thence 9 miles westerly on a dirt road to Cottonwood Creek, thence north to the southwest corner of section 32 (fig. 1).

The property is in an area of broad benches, bordered by steep cliffs and flat-topped mesas. Section 32 is cut on the westerly side by Cottonwood Creek. An unnamed creek enters at the northeast corner, runs southwest to a point southwest of the center, thence southeasterly and leaves the section about the middle of the south boundary line.

The climate is arid and with hot summers and moderate winters. The small amount of yearly precipitation usually consists of scattered showers during the summer months and light snow flurries during the winter.

Water for drilling and mining purposes would be hauled from Cottonwood Creek but domestic water would have to come from Blanding, Utah. Personnel on projects in the area usually live in house-trailers on the property or commute from Blanding.

The nearest major source of supplies is Grand Junction, Colorado, 220 miles from the property.

HISTORY AND PRODUCTION

The history of the area dates back to about 1930 when the Salt Wash outcrops were explored for vanadium. More recent uranium exploration is evident but no significant ore bodies have been developed in the vicinity of section 32. There has been no uranium production from the subject property.

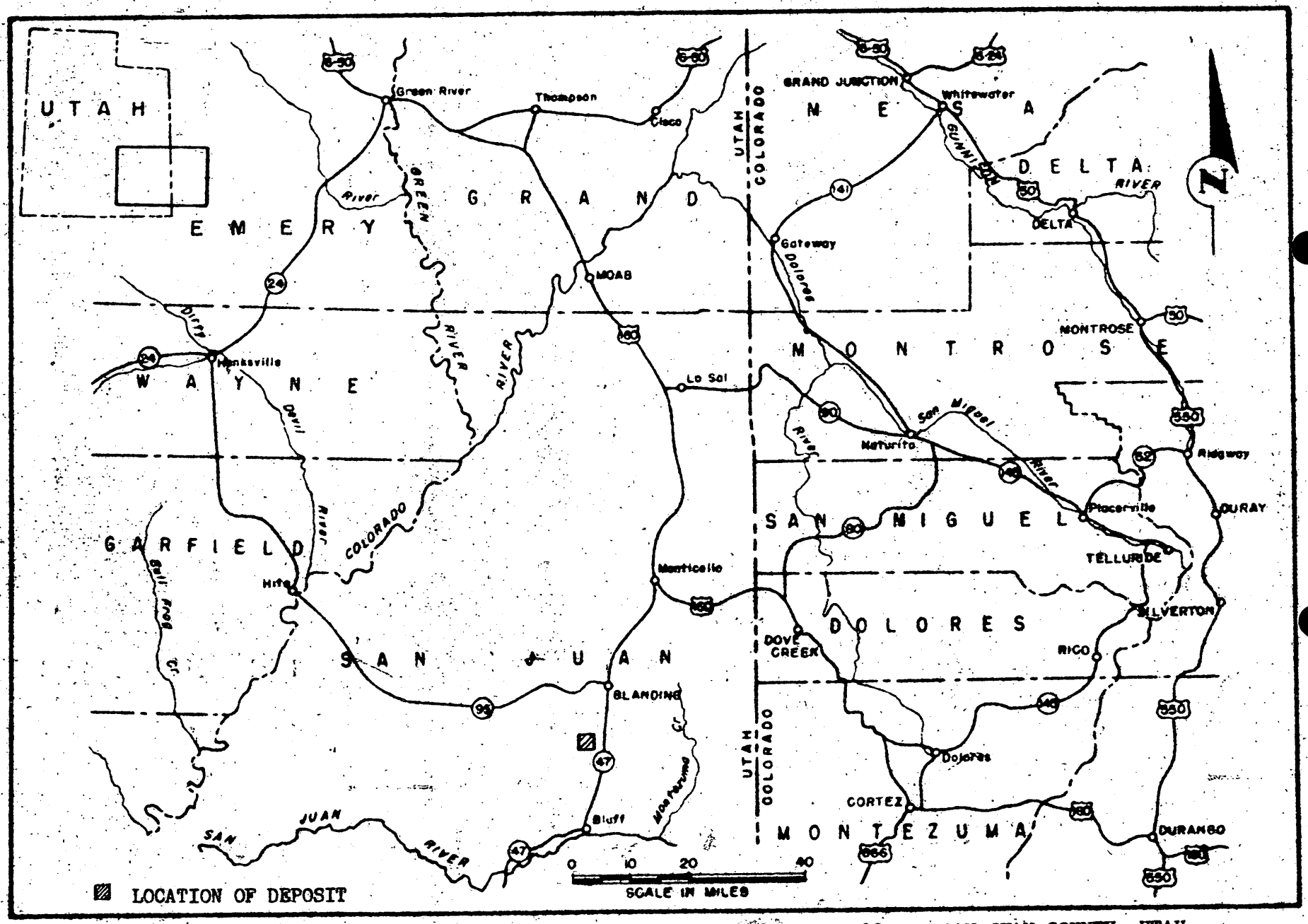

FIGURE 1 - MAP SHOWING LOCATION OF SCHOOL SECTION 32, T. 36 S., R. 22 E., SAN JUAN COUNTY, UTAH.
RARE METALS CORPORATION OF AMERICA. DMEA 4137

RECEIVED
JUN 25 1958

OWNERSHIP AND EXTENT

Utah Mineral lease No. 7553, dated March 19, 1954, granted P. F. Catterson the right to mine, remove, and dispose of uranium and vanadium from all of Section 32, (approximately 640 acres), T. 38 S., R. 22 E., Salt Lake, Meridian. The State of Utah holds a 12-1/2% overriding royalty on all uranium-vanadium production from the section. P. F. Catterson and wife, Mary E. Catterson, assigned the lease to El Paso Natural Gas Company on June 14, 1954, reserving an overriding royalty of 2-1/2% of the value of all uranium and vanadium ore produced from the property. El Paso Natural Gas Company assigned the lease to Rare Metals Corporation of America on May 5, 1955, reserving an overriding royalty of 10 percent of the net profits derived from the sale or disposition of all uranium and vanadium ores produced from the property. Rare Metals Corporation of America now control the property and are responsible for any operations performed thereon.

PRESENT STATUS

Exploration and Development

A total of 35 rotary non-core holes, averaging 88.5 feet in depth, were drilled on the property during April and May, 1955. The holes were probed for radiometric anomalies but no samples were assayed chemically. Holes 4, 8, 9, 10, and 22 showed weak mineralization when probed. All other holes were either barren or abandoned before completion. The drilling failed to delineate any favorable areas or trends to justify further exploration.

There has been considerable exploration in the vicinity of section 32, but no significant ore deposits have been discovered. One small deposit of uranium ore was found about one mile south of the property but subsequent drilling to develop reserves yielded negative results . The same lack of significant uranium discoveries extends south from the Blanding mines for about 18 miles.

No ore has been produced from Section 32 and there are no developed ore reserves.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property. Minor supplies could be bought in Blanding, Utah, but would mostly come from Moab, Utah or Grand Junction, Colorado. There is no housing on the property.

The nearest AEC buying station is located at Monticello, Utah, a distance of 52 miles from the property.

Electricity would be supplied by gasoline or diesel-powered light plants.

GEOLOGY

School section 32 lies in the southwestern part of the Monticello mining district in Southeastern Utah. The Abajo Mountains lie about 30 miles due north of the property and the Comb Ridge anticline lies about 6 miles to the west. The rocks at the Comb Ridge anticline dip easterly from 30° to 60°. Elsewhere in the area the rocks dip from 1° to 2° southerly and in places are horizontal. In section 32 the beds are horizontal and no evidence of faulting can be seen.

The rocks exposed in the vicinity of the property are, in ascending order, the Bluff sandstone and the Morrison formation of Jurassic age, and the Burro Canyon formation and the Dakota sandstone of Cretaceous age.

The Bluff sandstone is a thick, cliff-forming, gray-white sandstone composed of large scale cross laminations of probable eolian origin. It usually weathers into rounded Entrada-like cliffs or knobs. A strong northeast orientation of the cross-bedding is a distinguishing feature of this formation. A local, lenticular sandstone that ranges from a wedge-edge up to 80 feet thick lies between the Bluff and the Morrison formations. This is thought to be reworked Bluff which, in general lithology, resembles the Bluff sandstone.

The Morrison formation in this area consits of, from oldest to youngest, the Salt Wash, Recapture, Westwater Canyon, and Brushy Basin members. The Salt Wash normally consists of a series of grayish-white, cross-laminated sandstone beds separated by mudstone lenses. It usually weathers to form cliffs and benches. In section 32 the Salt Wash member ranges in thickness from 40 to 80 feet and mostly forms one massive cliff, the base of which is covered by recent sediments. Intra-formational channels are common but as the base is covered, channeling into the underlying Bluff could not be determined. The entire Salt Wash section has the appearance of a lens which is thickest within the property near drill holes 22 E., 23 E., and 24 E., (fig. 2), and thins both to the north and south. The sandstone comprises probably over 80 percent of the Salt Wash on the property. The subordinate mudstone is generally green where it is less than two feet thick, and it rarely exceeds this thickness. Fossil trees mostly silicified, and carbonaceous material are sparse. Casts of fossil trees are fairly common.

The Recapture shale consists of a series of maroon and gray mudstone beds with lenses of generally friable, white sandstone. At places in section 32 the upper surface of the Salt Wash has considerable relief, and the Recapture rests on this undulating surface in what appears to represent a hiatus. At other places the Recapture interfingers with the Salt Wash. The Recapture shale is about 40 feet thick and weathers to form a slope.

The Westwater Canyon is a greenish-yellow to gray sandstone with a subordinate amount of green to gray shale. It is in excess of 150 feet thick and weathers to form cliffs.

The Brushy Basin member and the overlying Cretaceous Burro Canyon and Dakota formations are not present in section 32. The Westwater sandstone caps most of the buttes and benches.

ORE DEPOSITS

There are no known uranium ore deposits in section 32 nor are there any significant known deposits in the vicinity. Evidence of considerable exploration can be seen in the area and one small mine produced some uranium.

This mine is about 1 mile south of section 32 and just below the Bluff-Salt Wash contact. The ore was from mineralized carbonaceous logs. Uranium was not found disseminated in sandstone away from the logs. Other logs still present, but with little or no radioactivity, appear to be composed of low-rank coal. The area surrounding the mine has been prospected by drilling but with apparent negative results.

The Blanding groupof mines lies about 12 miles northerly from the property and a few small mines and prospects lie along Butler Wash, which is about 5 miles west of the property. The area in the Cottonwood Wash drainage south of the Blanding mines is characterized by the lack of ore discoveries. Very slight radioactivity along the Salt Wash outcrop and in some fossil logs in section 32 was found during the field examination. Quantitative values of radioactivity reported in the application were all equivalent values. The drill holes from which these values were reported were visited and the cuttings tested with a scintillation counter. Very faint radioactivity was detected from two of the holes.

ORE RESERVES

There is no basis on which to estimate ore reserves on the property.

PROPOSED EXPLORATION

The applicant proposes drilling a total of 100- non-core holes to an average depth of 150 feet. The estimated overall cost of the project would be $34,686.00 with government assistance of $26,014.50. The first 25 holes would be drilled on about 700-foot centers along four lines as shown on fig. 2. The applicant refers to this first stage as reconnaissance

drilling. The remaining 75 holes would be used for detailed drilling of any ore bodies or geologically favorable areas that might be discovered by the stage I drilling.

The applicant feels justified in exploring the Morrison Salt Wash and the Bluff sandstone, both of Jurassic age, since small deposits of uranium have been discovered in both formations. The holes would bottom in the Summerville formation.

The cost estimates of the proposed program are given in detail in the application. Contract drilling is at $2.00 a foot. Bulldozing 35 hours is at $15.00 an hour. Labor and consultants are estimated at $1,860.00. Pickup truck, passenger car use and electronic equipment rental are estimated at $642.00. Employment taxes and accounting costs require $479.00 and sample analyses will cost $500.00. Contingencies are $680.00.

CONCLUSIONS AND RECOMMENDATIONS

Exploration for uranium ore deposits on school section 32 would be a highly speculative venture and is not recommended. The widespread occurrence of green mudstone and casts of slightly radioactive fossil logs associated with a scour and fill type sandstone does not render the property favorable. It lies within a non-productive area where, in places, similar conditions exist, and in other places rapid changes in sedimentation have taken place.

The property lies also within an area where the ratio of sandstone to mudstone in the Salt Wash is high with respect to sandstone, and the Salt Wash is comparatively thin as compared to known productive areas. These facts, although regionally unfavorable, are not conclusively unfavorable for a local area. However, when found in an area where there have been no significant discoveries and on a property with extensive rim exposures and some drilling done with only very slight and sparse mineralization found, then the regional criteria would seem to apply locally.

The field examiners consider the subject school section 32 to be geologically unfavorable for the occurrence of significant ore bodies and recommend that the application for government aid be denied.

2-24-56 [illegible]

RECEIVED
FEB 23 1956

February 20, 1956

Memorandum

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

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4137 (Uranium), Rare Metals Corporation of America, School Sec. 32, T. 38 S., R. 22 E., San Juan County, Utah

The subject application in the amount of $34,686.00 was received in this office on February 20, 1956.

A field examination will be made and suitable report prepared by an engineer from the Denver or Grand Junction office.

JOHN F. SHAW

John F. Shaw

cc: W. M. Traver (2)
E. N. Harshman
J. W. Hasler
M. H. Salsbury
J. F. Shaw
Sec. Op. Com. (2)

RECEIVED

FEB 23 1956

February 20, 1956

Memorandum

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cc: W. M. Traver (2)
E. N. Harabman
J. V. Easler
M. E. Salsbury
J. F. Shaw
See. Op. Com. (2)

2-23-56 lgm

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

RECEIVED FEB 20 1956

February 17, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw (2) (With brochure)
J. W. Hasler

From: Field Team, Region III

Subject: Docket DMEA 4137 (Uranium) Rare Metals Corporation of America, School Sec. 32, T. 38 S., R. 22 E., San Juan County, Utah

Enclosed is the subject application in the amount of $34,686.00. A field examination and suitable report are requested.

Your attention is directed to the attached copy of a letter from the Chairman of the Operating Committee and memoranda of review of the application by John E. Crawford and N. E. Nelson.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer, DMEA

Enclosures

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Docket 4137
Chron.

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

RECEIVED
FEB 20 1956

February 17, 1956

224 New Customhouse
Denver 2, Colorado

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J. W. Hasler

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DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer, DMEA

Enclosures

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Docket 4137
Chron.

700

FILE COPY
Surname:
Murphy
Elos
Selfridge

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

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

FEB 13 1956

Re: Docket No. DMEA-4137 (Uranium)
Rare Metals Corporation of America
School sec. 32, T. 38 S., R. 22 E.
San Juan County, Utah

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation. A copy of the application was forwarded to your office on January 25, 1956.

Enclosed are copies of memoranda, dated January 27 and February 6, 1956, from J. E. Crawford, USBM, and N. E. Nelson, USGS, respectively, relating to the subject application.

In the event the Field Team recommends an exploration contract on the subject property, it should advise the Applicant that we require Subordination Agreements signed by P. F. Catterson and Mary E. Catterson, original lessees, and the El Paso Natural Gas Company, the second or sub-lessee, as they have retained an overriding royalty under the assignment of the lease to the subject Applicant.

Also, because it is unlikely that the State of Utah will grant an Owner's Consent to Lien, the Applicant should be advised that in the event a contract is approved we will require a Performance Bond, or a suitable guaranty from a financially responsible third party.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

Enclosures

FMMurphy/izm 2-10-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

APPROVED:

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

Thor H. Kiilsgaard (JB)
Member, Geological Survey

R.C.H.

700

FILE COPY
Surname:
Murphy
Gray
Lichon
Kilgoard
Selfridge
Fitzmorris

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

FEB 13 [redacted]

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Re: Docket No. DMEA-4137 (Uranium)
School sec. 32, T. 38 S., R. 22 E.
San Juan County, Utah

Gentlemen:

The application for assistance in exploring the subject land, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to the Executive Officer of Region III at the following address:

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

Any assistance you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

G. O. Mittendorf

Administrator

FMMurphy/izm 2-10-56

cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Region III (2)

P.G.L.

2/8/56 gla

IN REPLY REFER TO:

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

RECEIVED
FEB - 8 1956

February 6, 1956

Re: DMEA-4137
Rare Metals Corp. of America
School Sect. 32
San Juan Co., Utah
$34,686.00 - Uranium

Memorandum

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

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

Subject: Review of application

The applicant requests assistance in doing further drilling on a school section lease.

The section is underlain by Salt Wash rocks in an area that as yet is characterized by a dearth of uranium discoveries, and the results obtained in thirty five holes drilled by the applicant lend little encouragement for additional work. Of the 35 holes 5 showed mineralization. In Hole 4-E, 0.10% eU_3O_8 material was cut between 109 and 110 feet. Four close center offset holes are barren. Three holes, 1-E, 2-E and 3-E, "formation" holes drilled on the high ground southwest of No. 4-E, were barren. All other holes were near-rim holes, drilled back of rim exposures exhibiting anomalous radiometric response or showing trash. Four of the holes show mineralization.

Hole	% eU_3O_8	Footage
8-E	0.05	63-64'
9-E	0.05	64-65'
10-E	0.50*	63-64'
22-E	0.07	46.2-48.2'

*This figure may be incorrect since no specific note of it is made in the text. Probably should be 0.05% eU_3O_8.

Cottonwood Creek cuts through the westerly edge of the school section and an unnamed creek cuts diagonally across the section from near the northeast corner to a point southwest of the center of the section whence it assumes an east of south course. The two creeks produce roughly 27,000 feet of Salt Wash rim, which, presumably, has been prospected for signs of anomalous radiometric response, carbonaceous trash and other indications of uranium mineralization. The

back-rim holes prospected 6 spots showing such signs. As noted above four showed mineralization. The lines of the proposed holes are probably random lines except that they hold to the low ground, thereby insuring shorter holes. Two lines, the northeast southwest lines, by following the unnamed creek coulee prospect a minimum of new ground since miles of Salt Wash rim is already exposed. If random drilling is to be done greater dispersion should be obtained.

In view of the drilling already done and the long rim exposures, the potential of the section looks to be low. Referral to the Field Team for commensurate action is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
FEB - 8 1956

February 6, 1956

Re: DMEA-4137
Rare Metals Corp. of America
School Sect. 32
San Juan Co., Utah
$34,686.00 - Uranium

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10-E	0.50*	63-64'
22-E	0.07	46.2-48.2'

*This figure may be incorrect since no specific note of it is made in the text. Probably should be 0.05% eU_3O_8.

Cottonwood Creek cuts through the westerly edge of the school section and an unnamed creek cuts diagonally across the section from near the northeast corner to a point southwest of the center of the section whence it assumes an east of south course. The two creeks produce roughly 27,000 feet of Salt Wash rim, which, presumably, has been prospected for signs of anomalous radiometric response, carbonaceous trash and other indications of uranium mineralization. The

back-rim holes prospected 6 spots showing such signs. As noted above four showed mineralization. The lines of the proposed holes are probably random lines except that they hold to the low ground, thereby insuring shorter holes. Two lines, the northeast southwest lines, by following the unnamed creek coulee prospect a minimum of new ground since miles of Salt Wash rim is already exposed. If random drilling is to be done greater dispersion should be obtained.

In view of the drilling already done and the long rim exposures, the potential of the section looks to be low. Referral to the Field Team for commensurate action is recommended.

N. E. Nelson

N. E. Nelson

Copy to: DMEA (3)

1/30/56 gla

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

RECEIVED
JAN 30 1956

January 27, 1956

Memorandum

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

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

Subject: Application for assistance, DMEA Docket 4137, Rare Metals Corporation of America, San Juan County, Utah

I have reviewed the attached application of Rare Metals Corporation of America, DMEA Docket 4137, dated January 17 and received in this office January 25. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The Rare Metals Corporation of America wishes to explore with DMEA assistance Sec. 32, T. 38 S., R. 22 E., San Juan County, Utah. Section 32 is a State of Utah school section leased to Rare Metals.

The company has drilled 35 rotary holes on the section, including 3 offset holes. Of the 35 holes only 5 gave indications of anomolous radioactivity, ranging from .05 percent equivalent U_3O_8 to .10 equivalent U_3O_8. The 3 offset holes surrounding the one most promising of the 5 mineralized holes were barren. Prospecting has, however, shown that interesting radioactivity exists in carbonaceous trash in exposures of the Salt Wash formation along Cottonwood Creek.

It is doubtful whether additional drilling will prove the presence of any economic ore deposits on the subject section, assuming that the 35 holes previously drilled were located favorably. The determination of the need for further exploration drilling and its extent can best be determined by the Field Team, and we suggest that the application be referred to them for review and possible examination of the property. The Field Team should consult with E. R. Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford
John E. Crawford

Attachment

January 25, 1956

Subject: DMEA-4137
Re: Exploration Assistance
Section 32

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Gentlemen:

The receipt of your application dated January 17, 1956, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4137 and referred to the Rare & Misc. Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

RARE METALS CORPORATION OF AMERICA

TEXAS STREET AT STANTON • POST OFFICE BOX 1492 • EL PASO, TEXAS

RECEIVED
JAN 23 1956

ADDRESS REPLY TO:
TENTH FLOOR, FIRST SECURITY BLDG.
SALT LAKE CITY 11, UTAH

January 18, 1956

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
U. S. Bureau of Mines
Washington 25, D. C.

Dear Mr. Mittendorf:

There are enclosed four copies of an application for a D.M.E.A. loan to cover a proposed exploration program for uranium on Utah State School Section 32 in T. 38 S., R. 22 E., San Juan County, Utah.

If you should desire, or require, any additional information, we will be pleased to try and furnish it for you.

Very truly yours,

John R. Reynolds

John R. Reynolds
Chief Engineer

JRR:ak

Enclsoures

RARE METALS CORPORATION OF AMERICA

TEXAS STREET AT STANTON ○ POST OFFICE BOX 1492 ○ EL PASO, TEXAS

ADDRESS REPLY TO:
TENTH FLOOR, FIRST SECURITY BLDG.
SALT LAKE CITY 11, UTAH

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Very truly yours,

John R. Reynolds
Chief Engineer

JRR:ak

Enclsoures

COPY

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
JAN 23 1956

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-4137
Metal or Mineral Uranium
Date Received 1-23-56
Estimated Cost $34,686.00
Participation (Government %)

INSTRUCTIONS

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

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

(*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

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ 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 January 17, 1956

Rare Metals Corp. of America
(Applicant)

By John R. Reynolds

John R. Reynolds, Chief Engineer

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

1. NAME OF APPLICANT

RECEIVED

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City, Utah

JAN 23 1956

Form
MF-103

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

1. Name of Applicant.

(a) Rare Metals Corporation of America

Tenth Floor, First Security Building

Salt Lake City 11, Utah

(b) A corporation, incorporated in the State of Delaware and qualified to do business in Utah.

(c) Paul Kayser, President

C. L. Perkins, Vice President & General Manager

H. F. Steen, Vice President & General Superintendent

Howard Boyd, Vice President and Asst. General Counsel

Fred T. Wagner, Vice President & Associate General Counsel

Virgil Rittmann, Secretary-Treasurer

Box 1492, El Paso, Texas

M. H. Kline, Vice President & Asst. General Manager

H. Anne Kidd, Asst. Secretary

Tenth Floor, First Security Building, Salt Lake City, Utah

(d) Not applicable.

3. APPLICANT'S PROPERTY RIGHTS

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

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JAN 23 1956

Form
MF-103

3. Applicant's Property Rights.

(a) All of Sec. 32, T. 38 S., R. 22 E., SLBM, San Juan County, Utah.

(b) Section 32.

(c) This is a school section owned by the State of Utah and now held under a uranium and vanadium lease by Rare Metals Corporation of America.

(d) See Exhibit "A".

(e) Not applicable.

(f) Not applicable.

4. PHYSICAL DESCRIPTION

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Form
MF-103

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JAN 23 1956

4. Physical Description.

(a) A total of 35 drill holes (rotary, air) was completed between April 20 and May 25, 1955. Holes 1 to 4 were drilled at random to test formation. Holes 14 to 16 were offsets from No. 4 where a radiometric showing of 0.10 percent U_3O_8 was found at a depth of from 109 to 110 feet; further mineralization was not found. All other holes were drilled immediately behind rim exposures of mineralized logs or twigs, or back of areas showing anomalous radiometric response (see Exhibit "B"). Drill holes ranged from 58 to 158 and averaged 88.5 feet in depth. Mineralization was found in holes No. 4, 8, 9, 10, and 22, as shown in the table on the following page.

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Form
MF-103

Table of Drill Results

Drill Hole No.	Depth Drilled, feet	Depth Probed, feet	Results	Collard in	Bottomed in
1-E	160	158	Barren	Recapture	Salt Wash
2-E	160	158	"	"	"
3-E	160	156	"	"	"
4-E	140	139	.10% eU_3O_8 from 109' to 110'	"	"
5-E	100	100	Barren	Salt Wash	Bluff
6-E	100	99	"	"	"
7-E	100	99	"	"	"
8-E	100	97	.05% eU_3O_8 from 63' to 64'	"	"
9-E	100	99	.05% eU_3O_8 from 64' to 65'	"	"
10-E	100	99	1.0' of 0.5% eU_3O_8 from 63' to 64'	"	"
11-E	60	58	Barren	"	"
12-E	60	60	"	"	"
13-E	60	59	"	"	"
14-E	120	119	"	Recapture	Salt Wash
15-E	120	118	"	"	"
16-E	120	119	"	"	"
17-E	120	117	"	"	"
18-E	40	38	Barren	Salt Wash	Bluff
19-E	40	37	"	"	"
20-E	40	37	"	"	"
21-E	80	79	"	"	"
22-E	80	79	.07% eU_3O_8 from 46.2' to 48.2'	"	"
23-E	80	78	Barren	"	"
24-E	80	77	"	"	"
25-E	15		Abondoned		
26-E	100	98	Barren	Salt Wash	"
27-E	100	97	"	"	"
28-E	80	79	"	"	"
29-E	80	78	"	"	"
30-E	80	79	"	"	"
31-E	80	77	"	"	"
32-E	100	99	"	"	"
33-E	100	98	"	"	"
34-E	20	Abandoned-no air returns due to surface slump			
35-E	20	"	"	"	"
Total	3,095				

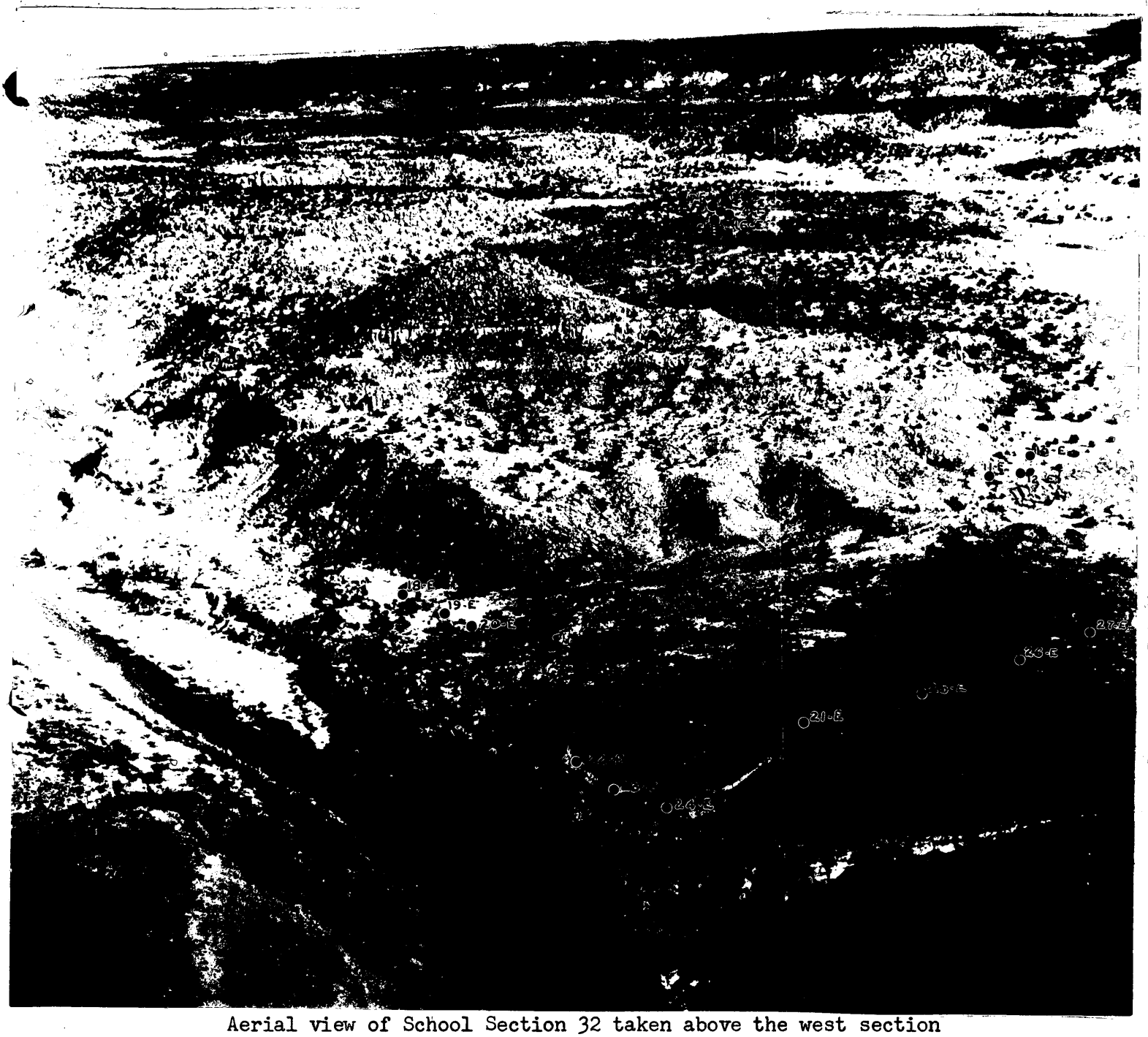
4. Continued

(b) No ore has been produced from Section 32, and there are no developed ore reserves. One small deposit of uranium ore was found about one mile south along Cottonwood Creek on a Salt Wash-Bluff sandstone contact. Several producing mines are located on Butler Wash about 5 miles west, and numerous producers are located on Cottonwood Creek about 10 miles north and west, all in the Salt Wash sandstone. Section 32 and the immediate area are relatively unexplored.

(c) Section 32 is about 12 air-line miles south and slightly west of Blanding, Utah, at an altitude in excess of 5,000 feet. The climate is arid with daytime summer temperatures often above 100° F.; however, the nights are cool. Winter temperatures rarely fall below zero, and the days are usually sunny and mild; occasional snows are seldom more than a skiff. Relief is moderate, not to exceed 300 feet. Cottonwood Creek, which heads in the high ridges on the west slopes of the Abajo Mountains to the north and flows south into the San Juan River immediately west of Bluff, provides the chief drainage of the area. (See Exhibits "C" and "D")

EXHIBITS C & D

Aerial view of south portion of section 32 taken from about 2000 feet S-W of the S-W section corner, looking about 15° north of east. Dakota-Burro Canyon at skyline, below which lie steep slopes. Prominent bench in upper center of Brushy Basin shale is formed by Westwater which with Recapture Cr. make a prominent slope to Salt Wash bench in center foregrnd. Westwater and Recapture Creek are here divided by line of sand stone about one quarter of the slope distance above Saltwash sand stone bench. Contrast the lithologic change in the Westwater-Recapture Creek from the southern part of the section as shown here and the northern half shown in the preceeding view.



Aerial view of School Section 32 taken above the west section line about 400 feet north of S-W section corner and looking N-E. Ledges in fore center show Cottonwood Creek cutting through a Salt Wash sand lens. Anomalous radioactivity assiciated with carbonaceous trees was found near the base of verticle ledge, about midway between creek bottom and top, at drill road. Numbers show drill holes as plotted on map. Plateau at skyline is bench of Dakota-Burro Canyon sandstone, beneath which are Brushy Basin slopes. Distant valley is floored with Westwater fm. which extends to prominent knoll in center of picture. Below ledges of Westwater is small slope of Recapture shale. Bench in foreground is Salt Wash.

4. (c) Continued

The Dakota sandstone and Burro Canyon formations provide a protecting cap which forms the high plateau extending for miles around the southern and eastern slopes of the Abajo Mountains and eastward into Colorado. Erosion has removed this capping for several miles north of the San Juan River to form a prominent south-facing scarp dissected by long finger-like canyons which leave prominent ridges. The Morrison formation is exposed for hundreds of miles along this scarp, and Section 32 covers such an exposure. The Bluff sandstone which forms the flat benchland north of the village of Bluff passes beneath the surface immediately south of the section. The Brushy Basin and overlying sediments have been completely erroded so that the only sediments involved on Section 32 are:

	(Westwater Canyon	0 - 150 +	feet	thick
	(Recapture Creek	30 - 40	"	"
Morrison Formation (Jurassic)	(Salt Wash S.S.	40 - 80	"	"
	Bluff S.S.	?		

The Salt Wash sandstone loses much of its typical identity and practically disappears to the south. On Section 32 it is only about 60 ± feet thick but is still characterized by

4. (c) Continued

channel sand lenses, crude sorting and cross-bedding, and contains many fossil trees, tree casts, and other carbonaceous debris. Radioactivity is intimately associated with these trees and trash. The Recapture Creek formation is predominantly a shale with occasional thin sand lenses. It is about 30 to 40 feet thick and is generally light in color and more nearly resembles the shales so typical of the Salt Wash further north around Moab. The Westwater has a maximum thickness in excess of 150 feet on Section 32 though the upper third has been removed by erosion. Section 32 covers an area of rapid facies change in all exposed beds including the Bluff sandstone. It is not unlikely that the area of intensive uranium mining on Cottonwood Creek some 10 miles to the north represents the place of maximum change, where the Salt Wash entirely replaces the Bluff, Recapture Creek, and Westwater strata. Section 32 lies in a broad syncline between the Abajo Mountains on the north, Comb Ridge on the west, and the Monument Uplift to the southwest. Dip is for all practical purposes zero. Commercial uranium ore will probably be found only in the Salt Wash. However, the occurrence of ore in the Bluff sandstone just south of the section and the intimate relation of the Bluff and Salt Wash

4. (c) Continued

in this area would indicate justification for drilling to the Bluff-Summerville contact.

Drilling to date is insufficient to prove or disprove the section, especially in view of the channel exposures and the slight but significant mineralization found in some of the holes drilled thus far.

Reasons for believing additional exploration on Section 32 is justified include the following:

1. Large acreage on favorable ore horizon.
2. Evidence of mineralized channels on exposed rims.
3. Reasonable drilling depths.
4. History of production in the general area.
5. Climate and accessibility.
6. Proximity to mill and experienced labor market.
7. Clear title and reasonable royalty.
8. Experience of operating company.

(d) Section 32 is accessible by traveling south from Blanding, Utah, for 17 miles over State Highway No. U47, a maintained gravel road, thence 9 miles by a sand road westward to Cottonwood Creek, thence north to the southwest corner of the Section. Rare Metals Corporation of America has

4. (d) Continued

constructed some access roads on the property. In the event minable ore were found, a road which now leaves Highway No. U47 about 10 miles south of Blanding and runs southwesterly almost to Section 32 could be improved and extended at modest cost. The distance to Blanding would then be reduced to about 13 miles. Ore would be trucked to Monticello, Utah, some 22 miles hortheast of Blanding on Highway U47 which here is paved. Total ore haulage would then be approximately 35 miles.

(e) Since all streams in the area are intermittent throughout much of the year, water would have to be developed locally or hauled from Blanding. Two water developments are probable: (1) From Cottonwood Creek proper, and (2) From seeps emerging in a draw about .5 mile north of the section.

Ordinary supplies such as food, gas, small tools, and minor equipment repairs, as well as housing facilities, could be obtained at Blanding. The local labor market is limited, but most of the manpower in the area is experienced in this type of mining, and it is believed that sufficient labor could be recruited in the Blanding-Monticello area. All forms of power would have to be produced on the property.

5. THE EXPLORATION PROJECT

RECEIVED
JAN 23 1956

5. The Exploration Project.

(a) The project is proposed for the exploration of uranium and vanadium.

(b) It is proposed to explore for uranium by rotary drilling using compressed air to return the cuttings. A tentative location for the proposed drill lines is shown on Exhibit "B". Holes will be drilled along these lines on 200-foot centers. It is recommended, however, that the program be flexible enough to allow for detailed drilling of any ore bodies or geologically favorable areas that might be encountered by the reconnaissance drilling. All drill holes will be probed and logged. Samples will be taken at from 2- to 4-foot intervals and radiometrically checked. Chemical determinations will be made at Rare Metals' laboratory in Murray, Utah, of a sufficient number of mineralized samples to arrive at an accurate chemical-radiometric ratio for any ore that may be encountered.

(c) The work will start within 30 days and be completed within three months from the date of an exploration contract.

(d) Rare Metals Corporation is an operating mining company with a competent staff of experienced engineers, geologists, and operating personnel. The actual exploration work will be under

5. (d) Continued.

the supervision of Harold Horst, chief of the exploration division, Rare Metals Corporation. Mr. Horst graduated in geology from the University of Indiana in 1949. From 1949 to 1954 he worked as a mining engineer and commodity-industry analyst for the U. S. Bureau of Mines. In 1954 Mr. Horst joined Rare Metals Corporation of America. From 1951 to the present Mr. Horst has spent most of his time in exploration for uranium and thorium ores.

6. ESTIMATE OF COSTS

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

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JAN 23 1956

Form
MF-103

6. Estimate of Costs.

(a)	Independent contracts.	$ 30,525.00
(b)	Labor, supervision, consultants	1,860.00
(c)	Operating materials and supplies	642.00
(d)	Operating equipment	0
(e)	Rehabilitation and repairs	0
(f)	New buildings, improvements, installations	0
(g)	Miscellaneous	979.00
(h)	Contingencies	680.00
	Total	$ 34,686.00

(Detail of above estimates follows)

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Form
MF-103

6. Estimate of Costs.

(a) Independent Contracts.

1. Drilling - 100 holes 150' deep @ $2.00 per foot. 100x150 = 15,000' @ $2/ft.	$30,000.00
2. Bulldozer - 35 hrs. @ $15/hr.	525.00
Total independent contracts	$30,525.00

6. (b) Labor, supervision, consultants.

1 Supervising Engineer-Geologist 15 days @ $20/day	$ 300.00
Expense account, 15 days @ $12/day	180.00
1 Geologist - 2 months @ $450/mo.	900.00
Expense account, 60 days @ $8/day	480.00
Total labor, supervision & consultants	$ 1,860.00

(c) Operating materials and supplies.

1 pickup truck, 60 days, 50 miles per day @ 8¢ per mile, 60x50= 3,000 @ 8¢/mi.	$ 240.00
1 passenger car, 21 days, 150 miles per day @ 8¢ per mile, 21x150= 3,150 @ 8¢/mi.	252.00
Electronic equipment rental	150.00
Total operating, materials, and supplies	$ 642.00

(d) None

(e) None

(f) None

6. (g) Miscellaneous

Employment taxes, insurance and benefits.

15% of total wages - 15% x $1,860.00	$ 279.00
Assaying.	
Estimate 100 samples @ $5.00 each	500.00
Accounting.	
2 months @ $100.00/mo.	200.00
Total miscellaneous	$ 979.00

(h) Contingencies.

Two percent of estimated cost before 6(h)	
2% x $34,000.00	$ 680.00
TOTAL COST OF PROJECT	$ 34,686.00

Company participation 25% =	$8,671.50
DMEA participation 75% =	26,014.50

RECEIVED
JAN 23 1956

Rare Metals Corporation of America
Tenth Floor, First Security Building
Salt Lake City 11, Utah

Form
MF-103

7. (a) The applicant will be prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation.

(b) The applicant proposes to furnish its share of the costs by money.

EXHIBITS

EXHIBIT "A"

Section 3 (d)

THE STATE OF UTAH

STATE LAND BOARD

SALT LAKE CITY 14

D. H. WHITTENBURG
CHAIRMAN

T. B. CURTIS
SECRETARY

H. F. SMART
LAND COMMISSIONER

LEE E. YOUNG
DIRECTOR
EXECUTIVE SECRETARY

August 6, 1955

Re: Mineral Leases Nos. 7107, 7436-44, 7543-54.

Rare Metals Corporation of America
919 Kearns Building
Salt LakeCity, Utah

Gentlemen:

The Land Board, at its meeting July 15, 1955, approved assignments of the above numbered mineral leases to you; by El Paso Natural Gas Company, reserving unto El Paso an overriding royalty equal to 10% of the net profits derived from the ore produced under these leases; and in addition, the assignments are subject to 2½% overriding royalty previously reserved.

The Board's approval is provided that the working interests and overriding royalties do not exceed a total of 5% of the gross amount received for or the gross value of the leased substances.

The State assumes no responsibility in collecting or distributing overriding royalty.

Our records have been noted and we herewith enclose the original leases and assignments.

Yours very truly,

Lee E. Young by JPM

LEE E. YOUNG
EXECUTIVE SECRETARY

jg
encl.

RECEIVED
JAN 23 1956

ASSIGNMENT

Mineral Lease No. 7553 Application No. 4347

For and in consideration of the sum of Ten and No/100th Dollars ($10.00) and other good and valuable considerations, / El Paso Natural Gas Company, a Delaware Corporation, of Post Office Box 1492, El Paso, Texas, hereinafter known as Assignor, hereby sells, assigns and transfers unto Rare Metals Corporation of America, of Salt Lake City, Utah, hereinafter known as Assignee, all its right, title and interest in and to State of Utah Mineral Lease No. 7553, embracing the following described lands:

Township 38 South, Range 22 East, S.L.M., San Juan Co., Utah

Section 32: All

Containing 640 acres, more or less

Reserving, however, unto said El Paso Natural Gas Company, an overriding royalty equal to 10 % of the net profits derived from the sale or disposition of all uranium and vanadium ore which may be produced, saved, marketed and sold from said lands pursuant to said lease.

In addition to the above described overriding royalty reservation, this Assignment is made subject only to the following described overriding royalty:

An overriding royalty in favor of P. F. Catterson and Mary E. Catterson, equal to two and one-half percent (2½%) of the value of all of the uranium and vanadium ore which may be produced, saved, marketed and sold from said lands pursuant to said lease, as excepted and reserved in Assignment of said lease from P. F. Catterson and Mary E. Catterson to El Paso Natural Gas Company, dated June 14, 1954, to which reference is here made.

IN WITNESS WHEREOF, this 5th day of May, A.D., 1955.

ATTEST:

A C Martch
Assistant Secretary

EL PASO NATURAL GAS COMPANY

By: C L Perkins
C. L. Perkins
Vice President

U & V U-21

STATE OF TEXAS
COUNTY OF EL PASO } ss

On this, the 23rd day of June, 1955, before me appeared C. L. Perkins, to me personally known, who after being by me duly sworn did say that he is the Vice-President of EL PASO NATURAL GAS COMPANY, a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said C. L. Perkins acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Martha B. Ivey
Notary Public in and for El Paso County, Texas

My commission expires:

MARTHA B. IVEY,
Notary Public, in and for El Paso County, Texas
My Commission expires June 1, 1957

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JAN 23 1956

ACCEPTANCE OF ASSIGNMENT

Mineral Lease # 7553

Comes now RARE METALS CORPORATION OF AMERICA, a Delaware corporation, and hereby accepts the Assignment from El Paso Natural Gas Company of Post Office Box 1492, El Paso, Texas assigning to Rare Metals Corporation of America Utah State Mineral Lease No. 7553 which Assignment is dated 5th of May, 1955, and hereby assumes and agrees to perform all of the covenants and obligations of said lease on the part of the Lessee to be kept and performed.

IN WITNESS WHEREOF, Rare Metals Corporation of America has executed this Acceptance this _____ day of June, 19 55.

ATTEST:

By _____
Assistant Secretary

RARE METALS CORPORATION OF AMERICA

By _____
Vice President

STATE OF TEXAS)
) SS.
COUNTY OF EL PASO)

On this 23rd. day of June, A.D., 1955 personally appeared before me H. F. Steen who being by me duly sworn did say that he is the Vice President of RARE METALS CORPORATION OF AMERICA and that said instrument was signed in behalf of said corporation by authority of its by-laws, and said H. F. Steen acknowledged to me that said corporation executed the same.

Given under my hand and seal this 23rd. day of June, 1955.

My commission expires:

MARTHA B. IVEY
Notary Public, In and for El Paso County, Texas
My commission expires June 1, 1957

Martha B. Ivey
Notary Public
Residing At: El Paso, Texas

THE STATE OF UTAH

STATE LAND BOARD

SALT LAKE CITY 1

P. H. MULCAHY
CHAIRMAN

T. S. CURTIS
SECRETARY

A. N. SMITH
EXECUTIVE SECRETARY

LEE E. YOUNG
MANAGER

Aug. 27, 1954

Re: ML 7550, 7551, 7552,
7553 and 7554

El Paso Natural Gas Company
Bassett Tower
El Paso, Texas

Gentlemen:

The Land Board, at its meeting Aug. 20, 1954 approved assignments of the above numbered leases to you; by P. F. Catterson & Mary E. Catterson who reserved 2½% overriding royalty. It is understood these are considered unconditional assignments as the State assumes no responsibility in collecting or distributing overriding royalty.

Our records have been noted and we enclose the original leases, assignments and Acceptances of same.

Yours truly,

A. N. SMITH
EXECUTIVE SECRETARY

JJ

ASSIGNMENT

MINERAL LEASE NO. 7553 APPLICATION NO. 4347

FOR AND IN CONSIDERATION OF THE SUM OF TEN AND NO/100TH DOLLARS ($10.00) AND OTHER GOOD AND VALUABLE CONSIDERATION, P. F. CATTERSON, JOINED HEREIN BY MARY E. CATTERSON, HIS WIFE OF 3939 PARKER COURT, INDIANAPOLIS, INDIANA, HEREINAFTER KNOWN AS ASSIGNOR, HEREBY SELLS, ASSIGNS AND TRANSFERS UNTO EL PASO NATURAL GAS COMPANY OF EL PASO, TEXAS, HEREINAFTER KNOWN AS ASSIGNEE, ALL THEIR RIGHT, TITLE, AND INTEREST IN AND TO STATE OF UTAH MINERAL LEASE NO. 7553 EMBRACING THE FOLLOWING DESCRIBED LAND:

TOWNSHIP 38 SOUTH, RANGE 22 EAST, S.L.M., SAN JUAN CO., UTAH

SECTION 32: ALL

CONTAINING 640 ACRES, MORE OR LESS

RESERVING, HOWEVER, UNTO SAID P. F. CATTERSON AND MARY E. CATTERSON, HIS WIFE, AN OVERRIDING ROYALTY EQUAL TO TWO AND ONE-HALF PERCENT (2-1/2%) OF THE VALUE OF ALL OF THE URANIUM AND VANADIUM ORE WHICH MAY BE PRODUCED, SAVED, AND MARKETED FROM SAID LANDS PURSUANT TO SAID LEASE.

WITNESS OUR HANDS THIS 14TH DAY OF JUNE, 1954.

WITNESS:

Merand P. Ellison P. F. Catterson

Margorie D. Shipley Mary E. Catterson

ACKNOWLEDGMENT

STATE OF UTAH)
) SS
COUNTY OF SALT LAKE)

ON THE 14TH DAY OF JUNE, A.D., 1954, PERSONALLY APPEARED BEFORE ME, P. F. CATTERSON AND MARY E. CATTERSON, HIS WIFE, THE SIGNERS OF THE ABOVE INSTRUMENT, WHO DULY ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME.

MY COMMISSION EXPIRES FEB. 4, 1958

Margorie D. Shipley
NOTARY PUBLIC
RESIDING IN SALT LAKE CITY, UTAH

U + U-U-2)

Proof Read

MINERAL LEASE NO. 7553

UTAH STATE LEASE
FOR

APPLICATION NO. 4347

GRANT: School - 640 acres

URANIUM AND VANADIUM

THIS INDENTURE OF LEASE AND AGREEMENT entered into in duplicate this 19 day of March 19 54, by and between the State Land Board, acting in behalf of the State of Utah, hereinafter called the Lessor, and

P. F. CATTERSON

party of the second part, hereinafter called the Lessee, under and pursuant to Title 65, Utah Code Annotated, 1953.

WITNESSETH: That the Lessor, in consideration of the rents and royalties to be paid and the covenants to be observed by the Lessee, as hereinafter set forth, does hereby grant and lease to the Lessee the exclusive right and privilege to mine, remove, and dispose of all of the said minerals in, upon, or under the following described tract of land situated in San Juan County, State of Utah, to-wit:

All of Section Thirty-two (32), Township Thirty-eight (38) South, Range Twenty-two (22) East, Salt Lake Meridian.

containing a total of 640 acres, more or less, together with the right to use and occupy so much of the surface of said land as may be required for all purposes reasonably incident to the mining, removal, and disposal of said minerals, according to the provisions of this lease, for a period of ten years, beginning January 2nd, first succeeding the date of issuance hereof, and as long thereafter as said minerals may be produced in commercial quantities from said lands, upon condition that at the end of each twenty (20) year period succeeding the first day of the year in which this lease is issued, such re-adjustment of terms and conditions may be made as the Lessor may determine to be necessary in the interest of the State.

ARTICLE I

It is expressly understood and agreed that this lease is granted subject in all respects to and under the conditions of the laws of the State of Utah and existing Rules and Regulations or Rules and Regulations as may be hereafter approved and adopted by the State Land Board.

ARTICLE II

It is further expressly understood and agreed that this lease covers only the mining, removal, and disposal of the minerals specified in this lease, but the Lessee shall promptly notify the Lessor of the discovery of any minerals excepting those enumerated herein.

ARTICLE III

The Lessee in consideration of the granting of the rights and privileges aforesaid, hereby covenants and agrees as follows:

FIRST: To pay to the Lessor as rental for the land covered by this lease the sum of Fifty (50) Cents per acre per annum. All such annual payments of rental to be made in advance on the 2nd day of January of each year, except the rental for the year in which this lease is issued, which is payable on the execution of this lease, such rental to be credited against the royalties as they accrue for the year.

SECOND: To pay a royalty of 12½% of the gross amount received for or the gross value of the leased substances, including the State's royalty share of any bonus received by the Lessee from the sale of the leased substances. The basis for computing the amount due to the Lessor shall be as follows:

(a) If the leased substance extracted are sold under a bonafide contract of sale the amount of money or its equivalent actually received by the owner, Lessee, or other person operating the leased premises from the sale of the leased substances less a reasonable cost, if any, of transporting the leased substances from the place where extracted to the place where under the contract of sale, the leased substances are to be delivered.

(b) If the leased substances extracted are treated at a mill, smelter, processing plant, or reduction works which receives the leased substances from independent sources and which is owned or controlled by the same interests owning or controlling the mine, such disposal shall be treated as a sale within the meaning of this section for the purpose of determining gross proceeds or otherwise, and in such determination a rate or charge for sampling, assaying, milling, smelting, or refining the leased substances therefrom shall be deducted which shall not exceed an amount to be determined by applying the same rates as are applied by such mill, smelter, or reduction works or competing works, and ores of substantially like character and in like quantities received from independent sources. In the event of controversy the Lessor shall have the power to determine such rates and charges. Transportation charges may also be deducted as provided in sub-division (a) hereof.

(c) If a mill or other reduction works is operated exclusively in connection with a mine such mill or reduction works shall be treated as a part of the mine and the cost of operating such mill or reduction works shall, for the purpose of fixing the royalty imposed by this lease, be regarded as part of the cost of mining, and the cost of assaying, sampling, smelting, refining, and transportation only shall be deducted as herein provided.

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THIRD: Said royalties to be paid quarterly on or before the 15th day of the month next succeeding the quarter in which the material is produced.

FOURTH: To prepare and forward to the State Land Office, on or before the 15th day of the month next succeeding the quarter in which the material is produced, a certified statement as to the production, market, and price received on all of the leased substances disposed of from said lands, and such other additional information as the State Land Board may from time to time require.

FIFTH: That at the option of the Lessor it may require the payment of royalties in kind, F.O.B., at the lease-site; the amount being 12½% of the leased substances extracted.

SIXTH: To commence actual operations upon the land included herein on or before December 31, 1954 and there after to diligently operate the property in accordance with the provisions contained in this lease. Failure to so continue the operation of the land included herein for a period of more than six (6) months without prior written approval of the State Land Board shall be cause for forfeiture, and that upon the violation of this provision or any of the other terms of this lease the Lessor may at its option after thirty (30) days notice by registered mail cancel this lease. After the expiration of the said thirty (30) days and the cancellation of the lease no notice of such cancellation need be given the Lessee.

SEVENTH: To keep at the mine office clear, accurate and detailed maps on tracing cloth, on a scale not more than 50 feet to the inch, of the workings in each section of the leased lands and on the lands adjacent, and to be so arranged with reference to a public land corner that the maps can be readily and correctly superimposed, and to furnish to the Lessor annually, or upon demand, certified copies of such maps and such written statements of operations as may be called for. All surveys shall be made by a licensed engineer and all maps certified to by him.

EIGHTH: To not at any time fence any watering place upon the lands leased where the same is the only accessible and feasible source of water incident to the lands leased. Nor shall the Lessee or assigns at any time permit or contribute to the pollution of any surface or subsurface water available, naturally or otherwise, for domestic or irrigation use.

NINTH: To not sell, assign, mortgage, pledge, hypothicate, or otherwise transfer or incumber this lease or any interest therein, nor sublet any portion of the leased premises, or any of the rights and privileges herein granted, without the written consent of the Lessor being first had and obtained.

ARTICLE IV

The Lessor hereby excepts and reserves from the operation of this lease:

FIRST: The right to permit for joint or several use such easements or rights-of-way upon, through, or in the land hereby leased as may be necessary or appropriate to the working of these or other lands belonging to or administrated by the Lessor containing mineral deposits or for other use.

SECOND: The right to use, lease, sell, or otherwise dispose of the surface of said lands or any part thereof, under existing State Laws or Laws hereafter enacted, insofar as said surface is not necessary for the use of the Lessee in the mining, removal, or disposal of the leased substances therein, and to lease other mineral deposits, excepting those enumerated herein which may be contained in said lands.

ARTICLE V

Upon cancellation of this lease for any cause herein the Lessee shall be entitled to remove from the lease holdings only personal property prior to complete fulfillment of the provisions of this lease, and that improvements attached to the land such as buildings, timbering, or other construction or construction material in place, shall remain undisturbed upon the ground and the property surrendered in good usable condition.

ARTICLE VI

It is mutually understood and agreed that it shall be the responsibility of the Lessee to slope the sides of all operations of a surface nature to an angle of not less than 45° or to erect a barrier around such operation as the State Land Board may require. Such sloping or fencing shall become a normal part of the operation of the lease so as to keep pace with such operation to the extent that such operation shall not constitute a hazard.

ARTICLE VII

It is mutually understood and agreed by the parties hereto that all of the terms, covenants, conditions, and obligations in this lease contained, shall be binding upon the heirs, executors, administrators, and assigns of the Lessee.

ARTICLE VIII

It is mutually understood and agreed that the Lessee may terminate this lease at any time upon giving three (3) months notice in writing to the Lessor and upon payment of all rents and royalties and other sums due and payable to the Lessor, and upon complying with the terms of this lease with respect to the preservation of the workings in such order and condition as to permit of the continued operation of the leased premises.

ARTICLE IX

It is mutually understood and agreed by and between the parties hereto that the Lessor, its officers and agents, shall have the right at all times to go in and upon the leased lands and premises, during the term of said lease to inspect the work done and the progress thereof on said lands and the products obtained therefrom, and to post any notices on the said land that it may deem fit and proper; and also shall permit any authorized representatives of the Lessor to examine all books and records pertaining to operations under this lease, and to make copies of and extracts from the same, if desired.

ARTICLE X

It is mutually understood and agreed that this lease is issued only under such title as the State of Utah may now hold, the Lessor shall not be liable for any damages sustained by the Lessee, nor shall the Lessee be entitled to or claim any refund of rentals or royalties or other monies theretofore paid to the Lessor.

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JAN 23 '53

ARTICLE XI

LESSEE agrees to observe faithfully the provisions of Title 65, Chapter 1, Section 18, Utah Code Annotated 1953.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names the day and year first above written.

STATE OF UTAH, STATE LAND BOARD

By A N Smoot
EXECUTIVE SECRETARY LESSOR

P. F. Patterson

LESSEE

APPROVED AS TO FORM:
ATTORNEY GENERAL
Robert H. Rizzari

STATE OF UTAH
COUNTY OF Salt Lake } ss.

On the 8 day of June 1954, personally appeared before me A N Smoot who being by me duly sworn did say that he is the Executive Secretary of the State Land Board of the State of Utah and that said instrument was signed in behalf of said Board by resolution of the Board, and said A N Smoot acknowledged to me that said Board executed the same in behalf of the State of Utah.

Given under my hand and seal this 8 day of June 1954

My commission Expires: 4/12/58

Notary Public, residing at: Salt Lake City

STATE OF UTAH
COUNTY OF Salt Lake } ss.

On the 1st day of June 1954, personally appeared before me P. F. Patterson the signer of the above instrument, who duly acknowledged to me that he executed the same.

Given under my hand and seal this 1st day of June 1954.

My commission Expires: Feb. 4, 1958

Notary Public, residing at: Marjorie D. Shipley
Salt Lake City, Utah

STATE OF UTAH
COUNTY OF } ss.

On the day of 19 , personally appeared before me

who being by me duly sworn did say that he is an officer of and that said instrument was signed in behalf of said corporation by resolution of its Board of Directors, and said acknowledged to me that said corporation executed the same.

Given under my hand and seal this day of 19

My commission Expires:

Notary Public, residing at:

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JAN 23 1956

To accompany DMEA application
submitted (1/7/56) by
Irving G. Irving & Robert H. Nelson
43 Hirbour Bldg, Butte, Mont

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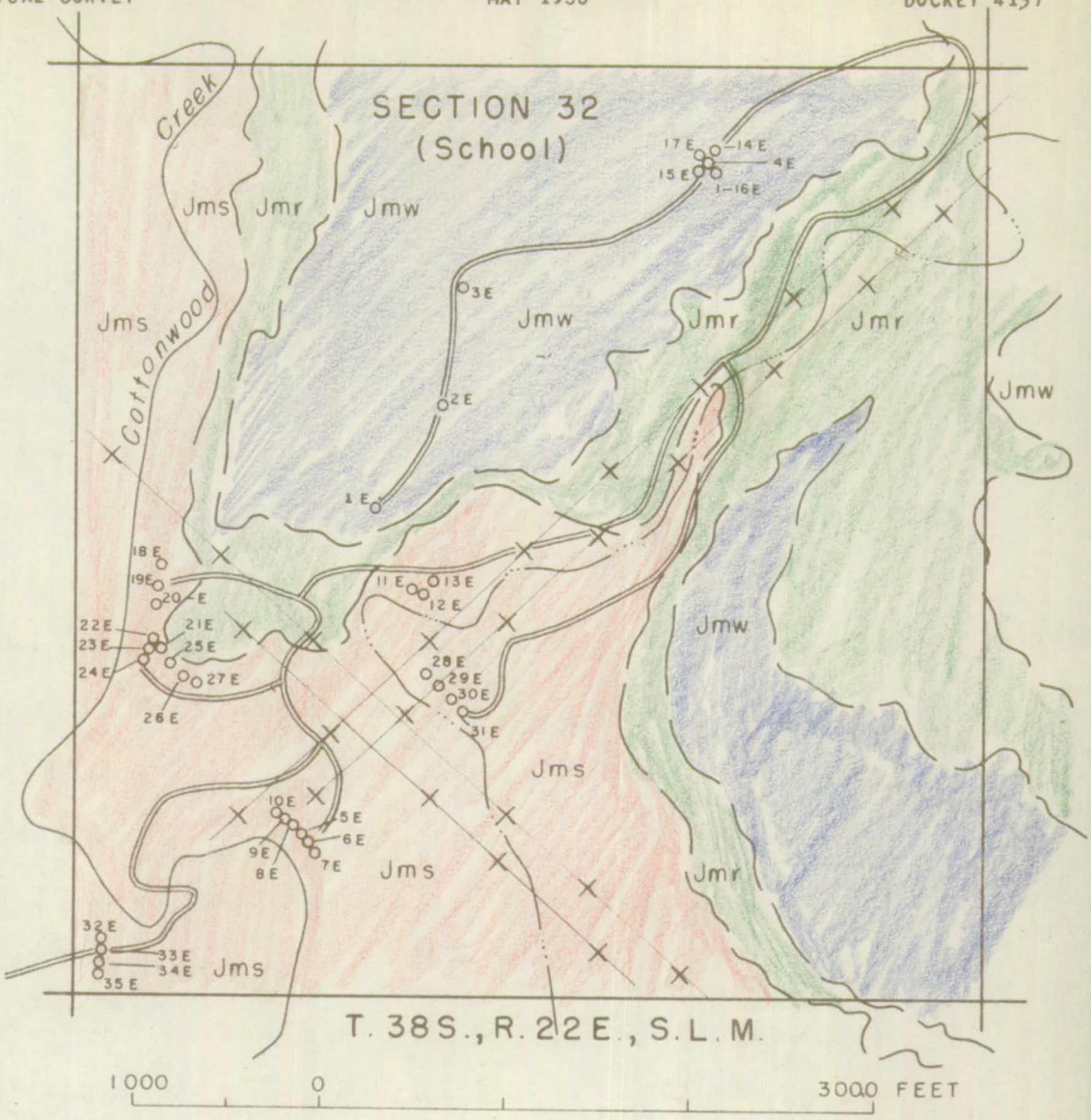
— Maps —



EXPLANATION

Jmw
Jmr
Jms

JURASSIC MORRISON FORMATION:
Jmw, WESTWATER CANYON MEMBER
Jmr, RECAPTURE MEMBER
Jms SALT WASH MEMBER

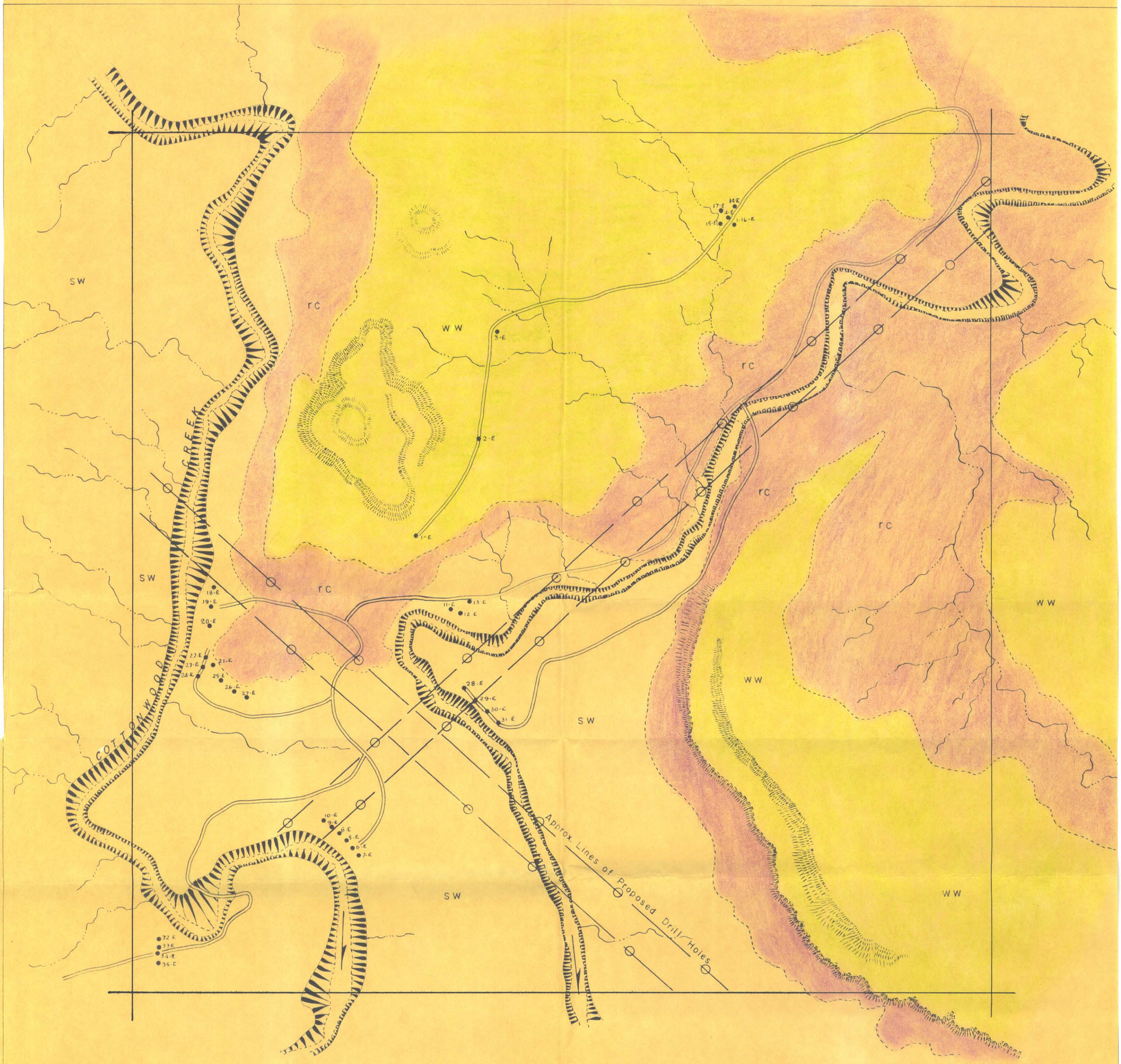
GEOLOGIC CONTACT

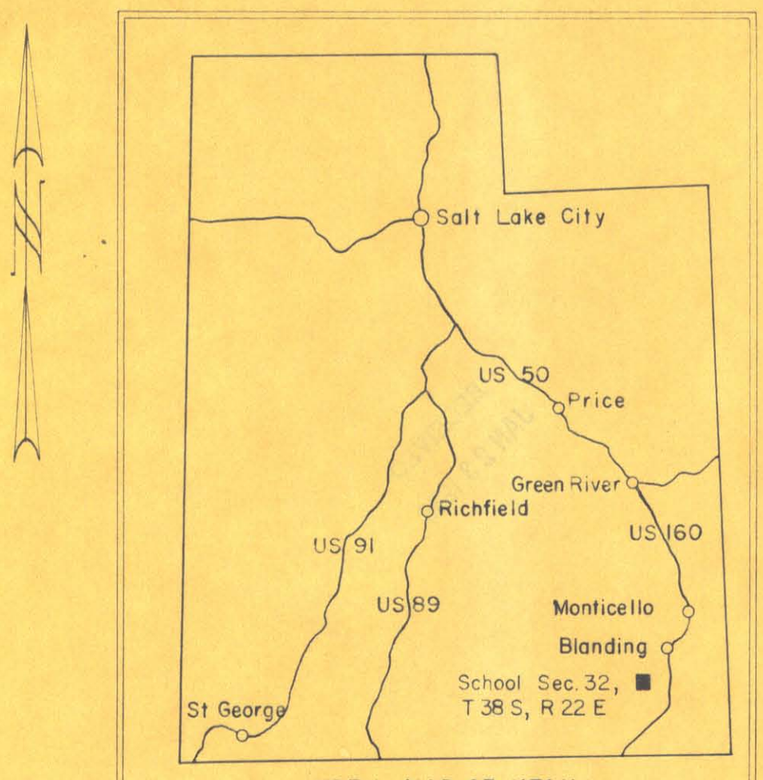
10E EXISTING DRILL HOLES

X PROPOSED DRILL HOLES

Note: INFORMATION MODIFIED FROM APPLICANTS MAP.

Figure 2. GEOLOGIC MAP SHOWING EXISTING DRILL HOLES AND PROPOSED STAGE I DRILL HOLES ON RARE METALS CORPORATION OF AMERICA SCHOOL SECTION 32, T. 38 S., R. 22 E., S.L.M., SAN JUAN COUNTY, UTAH.





INDEX MAP OF UTAH
Showing Location of School Sec. 32

LEGEND

- WW Westwater SS
- rc Recapture Sh
- sw Salt Wash SS
- ● Drill Holes
- ○ Proposed Drill Holes
- — — Approx. line of proposed D. H.
- ═ Road
- ⋯ Geologic Contact

RARE METALS CORPORATION OF AMERICA
Salt Lake City, Utah

SCHOOL SEC. 32, T 38S, R 22 E, SAN JUAN COUNTY, UTAH

SCALE: 1"=400' approx.	DATE: 1-10-56	REVISIONS:
DRAWN BY: S.O.	CHECKED BY:	
TRACED BY:	APPROVED BY:	
DRAWING NO.		

Exhibit "B"