C O P Y

224 New Customhouse
Denver 2, Colorado

December 6, 1954

Mr. Robert F. George
Robert F. George and Associates
708 Railway Exchange Building
Denver, Colorado

Re: Docket No. DMEA 3501

Dear Mr. George:

Reference is made to your application for Government aid on the Sandeloyas mining claims.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of uranium is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

W. H. KING
W. H. King

E. N. HARSHMAN
for A. H. Koschmann

Field Team, Region IV

HMC:dm
cc: Subject
AHKoschmann
WMTraver
ALBrokaw
Mining Div.
DMEA
AEC
Chron

Notified by
DMEA OPERATIONS DEPARTMENT
12-15-54
(date)

12/16/54

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

DEC 16 1954

[illegible]
Denver 2, Colorado

December [illegible]

Gentlemen:

To: Administrator, Defense Minerals Exploration Administration
Attention: [illegible]

From: Field Team, Region IV

Subject: Report of Examination, DMEA Docket No. [illegible] (U [illegible])
Robert F. [illegible] & Associates, [illegible]
[illegible], [illegible]

Enclosed are four copies of the report of examination of the subject [illegible] and one copy of the letter of denial to the applicant and two copies of form [illegible].

W. S. King
W. S. King

E. N. Hershman
E. N. Hershman
For A. [illegible]

Enc. [illegible]

Reviewed by
DMEA OPERATING COMMITTEE
12-15-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEPARTMENT OF THE INTERIOR
Bureau Mines Administration
RECEIVED
DEC 16 1954

Mining Division
Region IV

December 15, 1954

Old Post Office
Denver 2, Colorado

Memorandum

To: [illegible], Region IV

From: [illegible], Mining Division, Region IV

Subject: Report of Examination, DMEA Docket [illegible] (Jarman), [illegible], Class B Application, Employee Group, San Juan County, Utah

Herewith are [illegible] copies of the engineering report of examination on the subject docket.

[illegible]

The engineer examiner concludes that [illegible] is of such [illegible] that the [illegible] should be [illegible].

W. L. King

Enclosure

Reviewed by
DMEA OPERATING COMMITTEE
12-15-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 29, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3501 (Uranium) Robert F. George and Associates (Bandelayne Group) San Juan County, Utah

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations," by R. T. Chew, Geological Survey, and Carl Balser, Bureau of Mines, and of Balser's engineering report on the subject denial.

Balser concludes that the closest showing of important uranium mineralization that provided any substantial production is located 5 miles distance from the Bandelayne group and that any deposits likely to be discovered at the property would be small and probably difficult to pinpoint by more drilling without a large number of closely spaced holes. He recommends denial of the application.

I concur with his conclusions and recommendations.

The brochure, submitted with your memorandum of September 24, 1954, and the copy of the geologist Chew's report, furnished by E. E. Harshman, are also enclosed.

W. M. Traver

W. M. Traver

enclosures

cc: 10
DMEA 3501
DMEA Chron.

WMT/pmh

12-15-54

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

November 12, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Kaschmann

Subject: DMEA Docket 3201, Robert F. Gorge and Associates, Sandstone group, Claims Nos. 1-6, San Juan County, Utah

Enclosed are 11 copies of a geologic report by R. T. Shaw III of the U. S. Geological Survey covering a field examination of the subject property.

The lithology and ore occurrences on this property are similar to hundreds of others in the area, some of which have produced significant amounts of ore. Mr. Shaw concludes that there appears to be little possibility of making a significant discovery of uranium ore on these claims and recommends denial of the application.

I concur in these conclusions and recommendations.

for D R Mackenzie
A. H. Kaschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

Approved by
Date Department Director
12-15-54

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

October 28, 1954

Memorandum

To: A. H. Koschmann, Supervising Geologist, DMEA Field Team, Region IV

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3501, Robert F. George and Associates, Sandcloyas group, claims nos. 1-8, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report by R. T. Chew III, covering a field examination of the above-referenced property.

Unfavorable geologic conditions and poor production history, from a regional standpoint, have caused Chew to recommend that the application be denied.

WWilliams
For Arnold L. Brokaw

WPW/mlr

Enclosures 11

Reviewed by
DMEA OPERATING COMMITTEE
12-15-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
NUMBER IV

DMEA 1501, Sandstone Group

Robert J. George and Associates

San Juan County, Utah

Uranium

Randall T. Chew III, Geologist
Geological Survey

Carl Palmer, Mining Engineer
Bureau of Mines

November 26, 1954

12-15-54

[redacted]

[redacted]

[redacted]

[redacted]

DMEA 3561

BANDELOPAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Randall T. Shaw III and Earl Baker

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colorado, applied for a Defense Minerals Exploration Administration loan of $7,063.00 to explore the Bandelopas claims by 2,500 feet of core-hole drilling.

A field investigation was made on October 20, 1954, by an examining team of the Geological Survey and the Bureau of Mines. W. V. H. Jones and George Wright, associates of Robert F. George, accompanied the examining team on the examination.

The claims, which form a compact block 3,000 feet long by 2,400 feet wide in Secs. 5, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian, San Juan County, Utah, are located in Tenmile Canyon a tributary of Montezuma Canyon.

The ore deposition in the Bandelopas group is in the Salt Wash member of the Morrison formation about 175 feet below the top and probably about 200 feet above the unexposed bottom of the formation. It consists of a series of sandstone lenses separated by barren siltstones. In the uranium-bearing zone on the Bandelopas claims, the lens is Salt Wash medium-grained and arkosic sandstone. The lower part of the sandstone is thickly bedded with many siltstone lenses ranging from thin seams to 1 foot thick. The upper portion of the sandstone is more massive and the total thickness is at least 30 feet.

On the west side of Pearson Canyon opposite the proposed exploration vanadium mineralization is exposed in a zone about 200 feet long and 3 feet thick that has been developed by three short adits. Union Mines Development Company estimated the production from these adits as a few tons while A. George Wright claim the production was from 7 to 8 carloads of vanadium ore.

On the east side of the canyon no development work has been done. The largest uranium deposits probably contain less than 10 tons of uranium ore. The other zones associated with carbonaceous trash probably contain no material of ore grade.

Literally hundreds of uranium-vanadium occurrences are known in the Henderson Canyon area. Nearly all of these occurrences are of the magnitude of a few tons of sub-ore-grade uranium and low-grade vanadium. Although several small uranium "shows" exist on the property, lithologic conditions appear unfavorable for development of a minable ore body with a reasonable amount of exploration and it is recommended that the application be denied.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3501, Robert F. George and Associates, Sandcloyas group, claims nos. 1-8, San Juan County, Utah

Uranium

Geologic Report

by

R. T. Chew III
U. S. Geological Survey

October 28, 1954

12-15-54

DMEA 3501

INTRODUCTION AND SUMMARY

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colo., requested DMEA aid in an exploration program on the Sandcloyas group, claims nos. 1-8, located in sec. 6, T. 35 S., R. 25 E, San Juan County, southeast of Monticello, Utah, in Pearson Canyon a tributary of Montezuma Canyon, (fig. 1). The proposed project consisted of about ten diamond-drill holes and the necessary bulldozer work and other expenses. The project would cost $7,060, of which the Government's share would be $5,315.

The property was inspected on October 20, 1954, by R. T. Chew III and H. S. Johnson representing the U. S. Geological Survey, Carl Belser representing the U. S. Bureau of Mines, and A. George Wright, W. V. N. Jones, and Cloyd Johnson representing the applicant.

Literally hundreds of uranium-vanadium occurrences are known in the Montezuma Canyon area where these claims are located. Nearly all of the occurrences are of the magnitude of a few tons of sub-ore grade uranium and low-grade vanadium. Several small uranium shows exist on the property. However, lithogic conditions appear unfavorable for development of a minable ore body with a reasonable amount of exploration and it is recommended that the application be denied.

GEOLOGY AND ORE DEPOSITS

The Sandcloyas group is located in the Salt Wash member of the Jurassic Morrison formation about 175 feet below the top of the unit. The bottom of the unit is not exposed but the mineralization is probably about 200 feet above the bottom of the unit. According to the Union Mines Development Company report on the Comb Ridge district, the Salt Wash member is about 370 feet thick in Pearson Canyon. It consists of a series of sandstone lenses separated by maroon siltstones. The sandstone lenses average about 30 feet thick and are more persistent in the Montezuma Canyon area than elsewhere on the Colorado Plateau. In the lens at the Sandcloya group, the Salt Wash sand is medium grained and arkosic. The lower part of the lens is thinly bedded with many siltstone lenses ranging from thin seams to one foot thick. The upper portion of the lens is more massive with some cross-bedding. The bottom of the sandstone lens is not exposed, but the lens is at least 50 feet thick.

On the west side of Pearson Canyon opposite the proposed exploration project, vanadium mineralization is exposed in a zone about 3 feet thick and 200 feet long. The mineralization is very low grade in vanadium and contains almost no uranium. On the east side of the canyon, in the area of the proposed exploration project, there is a zone of uranium-vanadium mineralization about 5 feet long and 6 inches to one foot wide. This zone is associated with a carbonaceous siltstone along a contorted contact which probably marks a diastem, or interval, within the lens. Radioactivity occurs in at least one other higher horizon associated with carbonaceous trash and some limonite. The sandstone underlying these radioactive zones is colored very light lavender or green, is bordered with liesegang banding, and forms zones from 1 to 3 feet thick.

The largest uranium-vanadium deposit on the east side of Pearson Canyon probably contains less than 10 tons of uranium ore. The other zones associated with trash probably represent no ore-grade material. According to the Union Mines Development Company Comb Ridge reports, a few tons of vanadium ore were shipped from the low-grade vanadium deposit on the west side of the canyon during World War II, when it was known as the Little Dick No. 3 claim. There are probably 100 tons of low-grade vanadium ore remaining, but it contains almost no uranium. Three short adits, the longest about 35 feet long, have been driven into the vanadium deposit. One prospect pit has been dug into the uranium deposit at a point about 100 feet north of the best mineralization.

Literally hundreds of similar mineralized zones are known in the Montezuma Canyon area. They occur in all horizons in the Salt Wash, though they may be concentrated at certain horizons. Many of these have been prospected during and since World War II. The largest group of mines, located in Middle Montezuma Canyon, about five miles southwest of the Sandcloyas group, has produced about 4,600 tons of ore. Most of the mineralized zones have produced none or only a few tens of tons of ore material.

There are no surface indications that the Sandcloyas occurrence is more favorable than most of the other occurrences in the Montezuma Canyon area. The thickness and lenticularity of the sandstone lens is about average and the abundance of low-grade showings would appear to indicate that this occurrence is similar to the others. Therefore, there appears to be little possibility of a significant discovery of uranium ore on these claims.

PROPOSED EXPLORATION

The applicant proposed an exploration program consisting of about 2,500 feet of drilling of which 500 feet was to be cored. Necessary bulldozer work and assays were also included. Total cost of the project was to be $7,060, of which the Government's share would be $5,315.00. About one-half mile of road building would be necessary to reach the drill sites.

CONCLUSIONS AND RECOMMENDATIONS

The lithology and ore occurrences at the Sandcloyas group appear similar to hundreds of others in the Montezuma Canyon area. None of the others have produced a significant amount of ore, and it is recommended that this application be denied.

This application has been brought to the attention of the U. S. Atomic Energy Commission, Exploration Division, Grand Junction Operations Office. The Commission has been asked for its help and advice in evaluating the property.

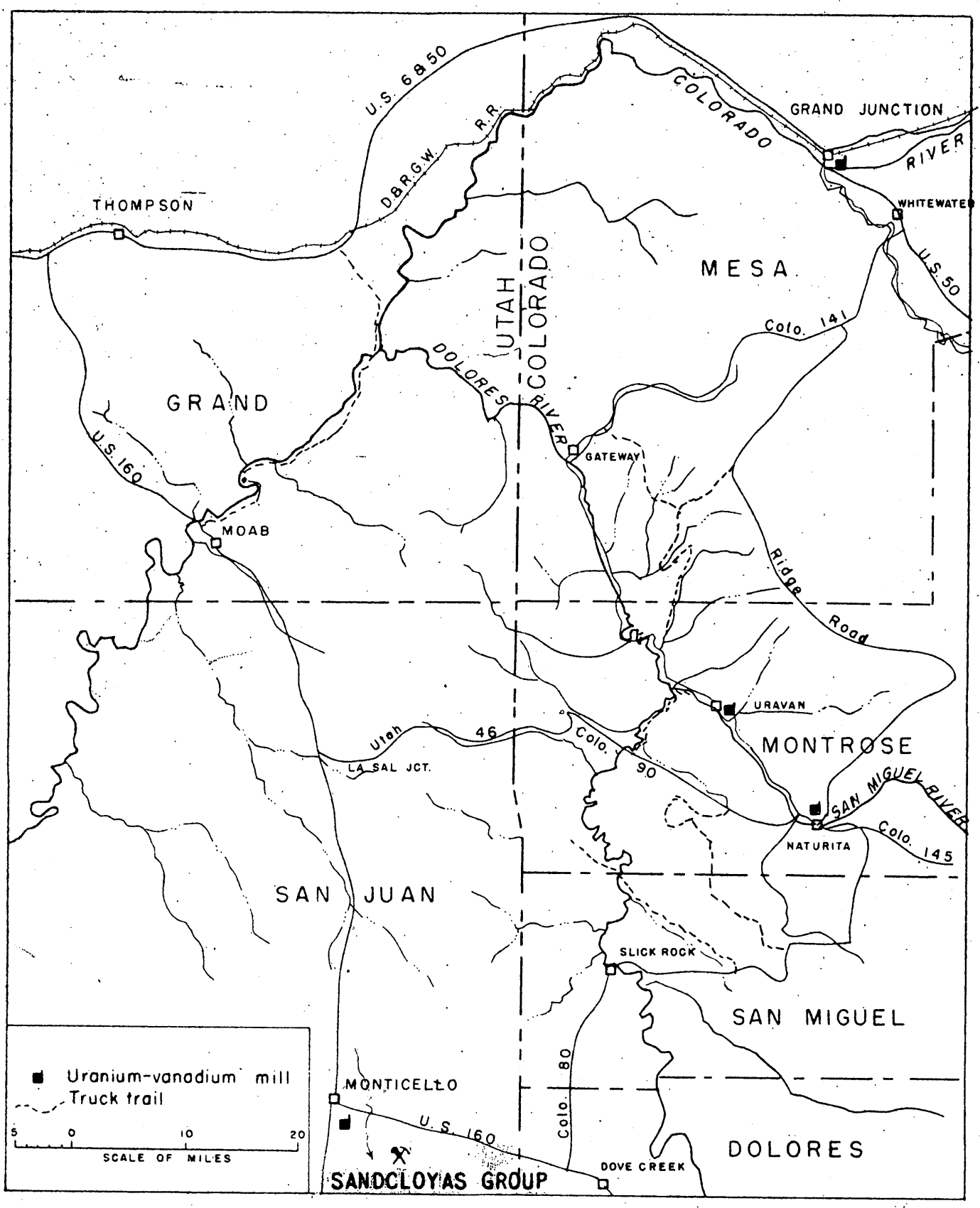
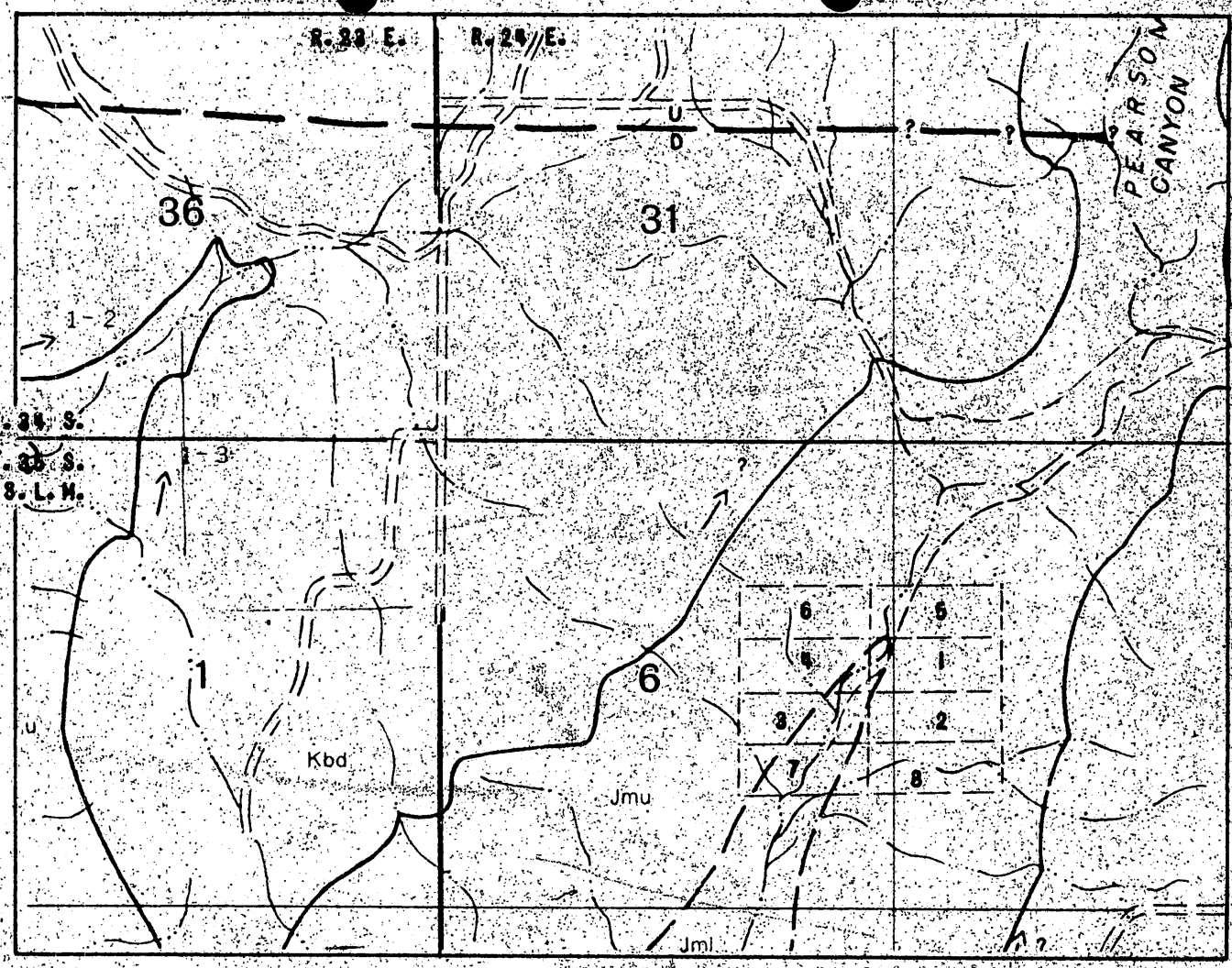


Figure 1. MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF THE SANDCLOYAS GROUP., ROBERT F. GEORGE ASSOCIATES, SAN JUAN COUNTY, UTAH



EXPLANATION

Kbd — BURRO CANYON AND DAKOTA SANDSTONE, UNDIFFERENTIATED

Jmu — UPPER (BRUSHY BASIN MEMBER) MORRISSON FORMATION

Jml — LOWER (SALT WASH AND WESTWATER MEMBERS) MORRISSON FORMATION

CLAIM BOUNDARY

6 — SECTION NUMBER

EXISTING ROAD

U/D — HIGH-ANGLE FAULT (U, UPTHROWN SIDE, D, DOWNTHROWN SIDE)

FORMATION CONTACT DASHED WHERE LOCATED APPROXIMATELY

Note: BASE FROM PHOTOGEOLOGIC MAP VERDURE 7 QUADRANGLE

Figure 2. PHOTOGEOLOGIC MAP SHOWING APPROXIMATE LOCATION OF THE SANDCLOYAS GROUP, ROBERT E. GEORGE ASSOCIATES, SAN JUAN COUNTY, UTAH

DMEA 3501

[redacted]

Engineering Report

By [redacted]
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
12-15-54
(date)

DOMA 3501

SANDOLOPAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

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ILLUSTRATIONS

Figure	Follows Page
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2. Claim map showing proposed exploration, Sandolopas Group, Robert F. George and Associates, San Juan County, Utah	3

DMEA 3501

[illegible]
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

EXAMINERS REPORT

By Carl Baker

INTRODUCTION

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colorado, on September 21, 1954, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on the Santalayna claims in the Hammerson Canyon mining district, San Juan County, Utah. The application, DMEA 3501, requested aid in completing 2,500 feet of core-hole drilling at a total estimated cost of $7,060.00. This proposed exploration was to test the Salt Wash member of the Morrison formation for uranium mineralization.

A joint field examination was made by a Geological Survey and Bureau of Mines examining team on October 20, 1954. The examining team, as a result of their investigation, recommended that the applicants' proposal be denied.

ACKNOWLEDGMENTS

W. V. E. Jones and A. George Wright, associates of Robert F. George and representing the applicant, accompanied the examining team.

Arnold L. Brunner, District Supervisor, Geological Survey, Grand Junction, Colorado, assigned Randall T. Chew III, geologist, to make the examination as the Geological Survey member of the team. Chew was accompanied by H. S. Johnson of the Geological Survey.

The Atomic Energy Commission was consulted concerning production and uranium mineralization in the Pearson Canyon area and the Geological

Survey requested their advice in evaluating the property.

LOCATION, TOPOGRAPHY, AND CLIMATE

The Sandalegna group is in Fourmen Canyon, a tributary of Montezuma Canyon, and is located in secs. 5, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian, in the Montezuma Canyon mining district, San Juan County, Utah (fig. 1).

The property covers the Salt Wash rim on both sides of Fourmen Canyon for a distance of 3,000 feet. The upper part of the Salt Wash member forms steep escarpments along the sides of the canyon. In the vicinity of the Sandalegna claims the uranium mineralized zone is near the bottom of the visible escarpment.

From Monticello it is 15 miles by road to the property, the last 3 miles of which is an access road, in poor condition. Altitudes at the Sandalegna claims range from about 6,500 feet at the bottom of the canyon to about 7,000 feet on the bench above the rim. Annual rainfall is light and the country is classed as semi-arid. Winter snowfalls seldom exceed 6 inches and wet clayey roads are considered the greater handicap. Water for drilling can be obtained from a spring a few miles distant and water for domestic use is hauled from Monticello. Pinion, suitable for mine use grows on the property. Large timbers and dimension lumber can be obtained in Monticello.

The nearest ore depot, supply point, and labor market is Monticello. The nearest railroad is the Denver and Rio Grande Western at Thompson, Utah, 89 miles north over U. S. Highways 160 and 50.

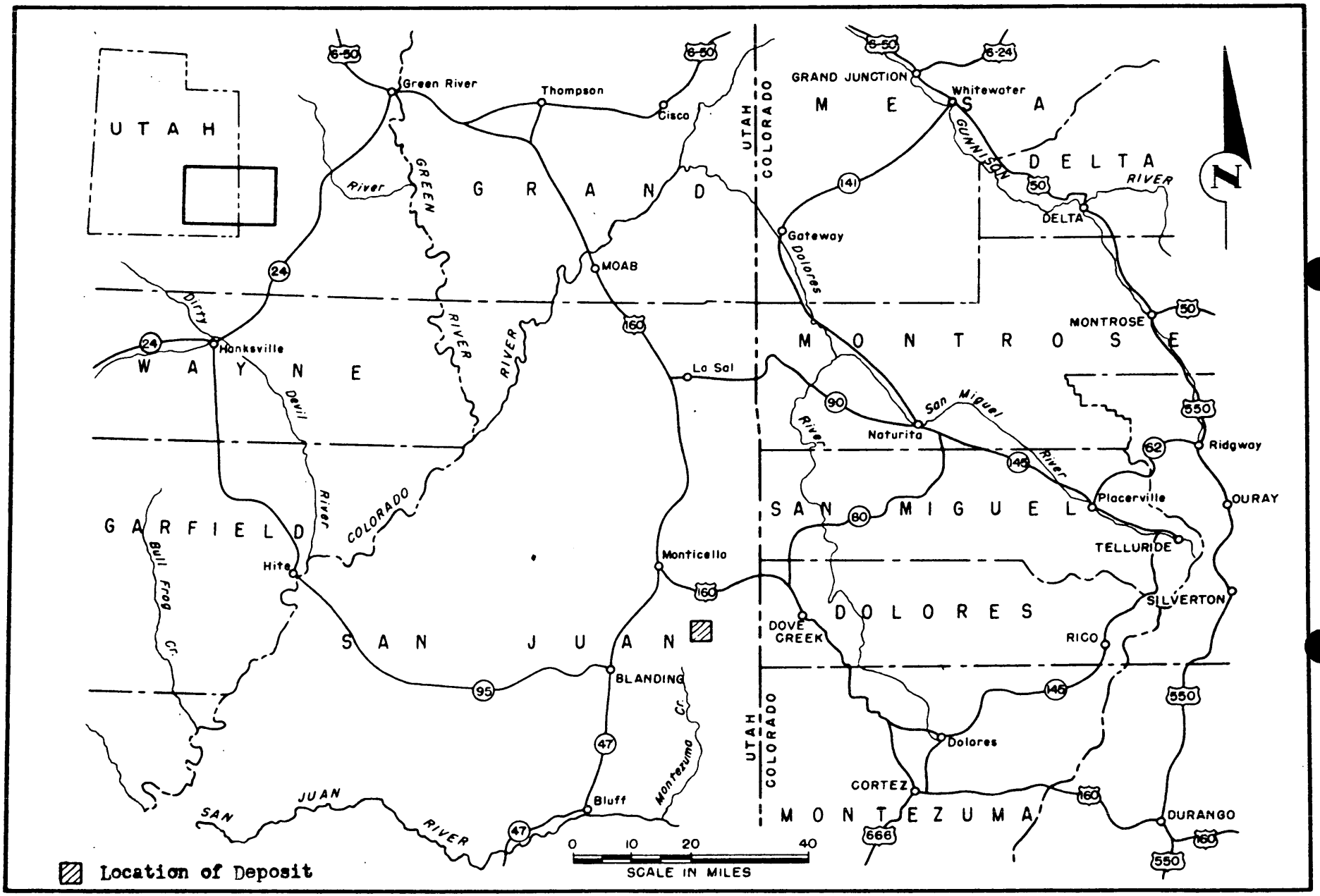


FIGURE 1 - LOCATION MAP, SANDCLOYAS GROUP, ROBERT F. GEORGE AND ASSOCIATES, SAN JUAN COUNTY, UTAH (DMEA 3501)

HISTORY AND PROSPECTING

According to reports of the Union Mines Development Company, a few tons of vanadium ore were shipped from the low-grade vanadium deposit on the west side of the canyon during World War II, when it was known as the Little Dick No. 3 claim. A. George Wright, representing the applicant, places the past production at from 7 to 8 cars of vanadium ore. Development consists of three short adits driven into the face of the cliff; after World War II, the Little Dick claims were abandoned. The area was later relocated as the Sandalayne claims by Lloyd Johnson and amended on June 22-24, 1954. The claims were leased to A. George Wright on June 22, 1954, and the lease was transferred by Wright to Robert F. George and Associates on September 9, 1954.

Formerly the property was reached by an access road from the south which made the distance from the mine to Monticello about 23 miles. The new access road, coming in from the north and built in 1954, has shortened the distance to 15 miles.

No development or production has been done on the east side of the canyon where the applicant's proposed exploration program is located.

OWNERSHIP AND RIGHTS

The Sandalayne group, as submitted in the application, consists of eight unpatented 600- by 1,500-foot claims in Secs. 3, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian (fig. 2). The claims are recorded in the office of the County Recorder of San Juan County, Utah, as follows:

Claim	Book	Page
Sandalayne No. 1	181	344
Sandalayne No. 2	181	344
Sandalayne No. 3	181	345
Sandalayne No. 4	181	345
Sandalayne No. 5	181	346
Sandalayne No. 6	181	346

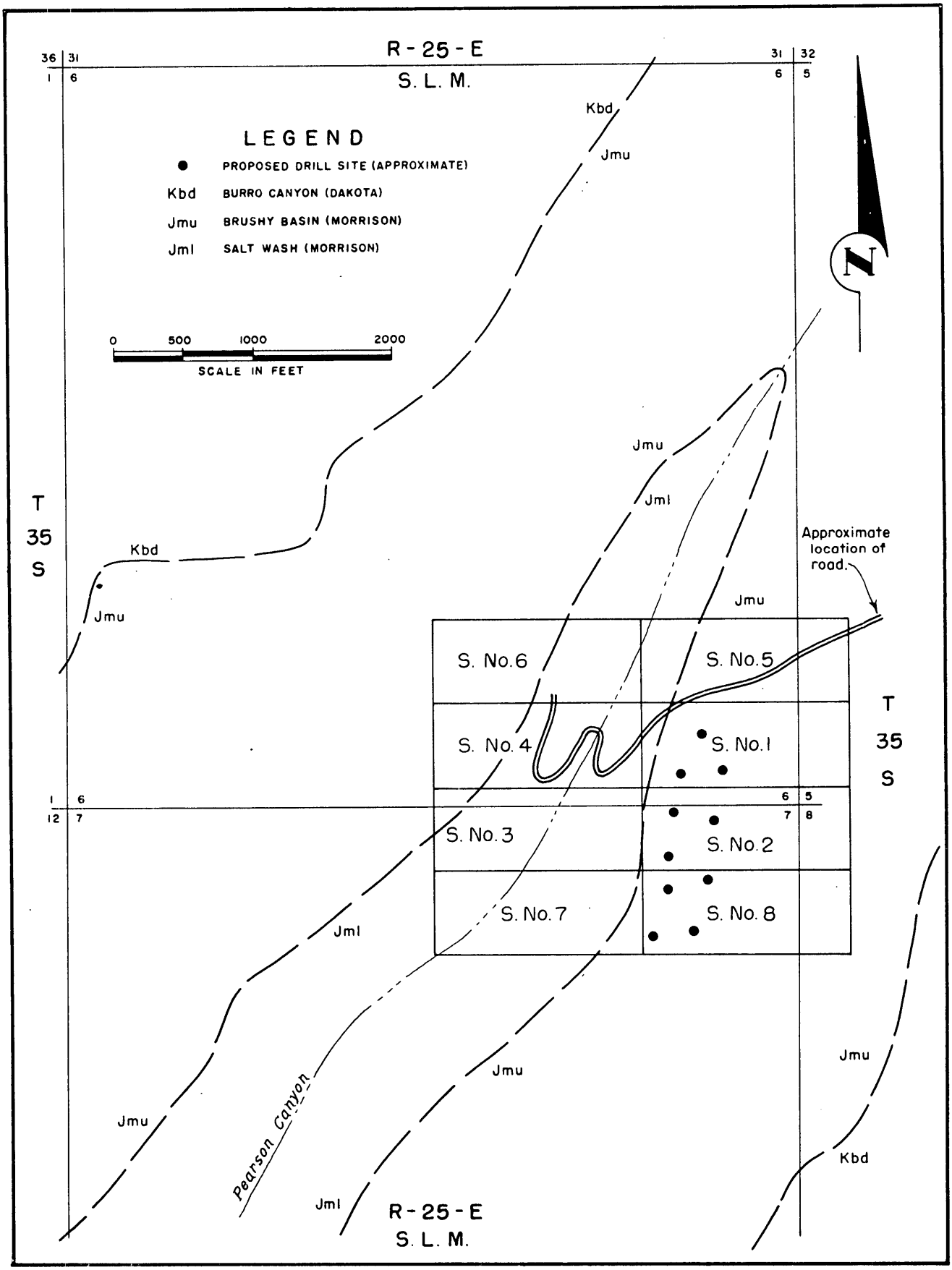


FIGURE 2 - CLAIM MAP SHOWING PROPOSED EXPLORATION, SANDCLOYAS GROUP, ROBERT F. GEORGE AND ASSOCIATES, SAN JUAN COUNTY, UTAH (DMEA 3501)

Sambalagas No. 1	121	347
Sambalagas No. 2	121	347

The applicants' leases extends to June 22, 1959, with the privilege of renewal.

DESCRIPTION OF DEPOSITS

The exposed rocks on the Sambalagas claims are Harrison formation of the Upper Sonsogia. In the bottom of the canyon the Bald Knob member of the Harrison is exposed while the Brushy Basin member is exposed higher up on the sides of the canyon. The Bald Knob member is thought to be about 370 feet thick in Fourmen Canyon with the favorable uranium ore horizon about 175 feet below the top of the unit in a sandstone lens about 50 feet thick. On the west side of the canyon uranium mineralization is exposed in a zone about 3 feet thick and 250 feet long which has been developed by several short adits. Uranium mineralization is slight. An estimated 100 tons of low-grade uranium ore remains in this area. On the east side of the canyon and in the same horizon there is a zone of uranium ore from 6 to 12 inches thick and 3 feet long. Radioactivity also exists in a slightly higher horizon where the uranium is associated with carbonaceous wood and some limonite. The largest visible deposit probably contains less than 10 tons of uranium ore.

MINERALS IN RESERVE

Total minable reserves of uranium ore at this time are estimated as less than 15 tons.

PROPERTY STATUS

Exploration and Development

The west side of the canyon has been developed by three short adits aggregating less than 90 feet in length. No development work has been done on the east side of the canyon.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property and the only other facility is an access road.

PROPOSED EXPLORATION

The applicant proposed to further explore the claims by ten core-drill holes aggregating 2,500 feet in length. The total cost, including bulldozing, was estimated at $7,050.00, or $2.82 a foot. The approximate locations of the proposed holes are shown on figure 2.

ESTIMATED COST OF PROJECT

The application, as submitted, includes all necessary costs except an item of payroll taxes and liability insurance of $30.00. Furthermore, the assaying cost shown is high and supervision estimates are low.

Estimated Cost of Core-hole Drilling

Independent Contracts

Plug bit drilling, 2,000 feet of hole at $2.00 a foot	$4,000.00	
Core drilling 500 feet of hole at $2.50	1,250.00	
Bulldozing 160 hours at $5.50 an hour plus $100.00 "move in"	980.00	
Total independent contracts		$6,230.00

Labor and Supervision

Labor	None

Supervision

Two months at $300.00 a month	$600.00	
Total labor and supervision		$600.00
Operating Materials and Supplies		None
Operating Equipment		None
Initial Rehabilitation and Repairs		None
New Buildings, Improvements, etc.		None
Miscellaneous		
Core boxes (12 at $5.00 each)	$60.00	
Assaying (20 at $5.00 each)*	100.00	
Payroll taxes and liability insurance (5 percent of $600.00)**	30.00	
Total Miscellaneous		190.00
Total estimated core-hole drilling costs		$6,990.00
Average cost per foot for 2,500 feet of core-hole drilling***		$2.80

* $100.00 less than applicants' estimate
** $30.00 more than applicants' estimate
*** $0.08 less than applicants' estimate

SUMMARY COST OF PROJECT

Core-hole drilling 2,500 feet at $2.80 a foot	$7,000.00
Government participation--75 percent	5,250.00
Total time for completion	2 months

CONCLUSIONS

There are hundreds of mineralized zones known in the Montezuma Canyon area similar to those on the Sandalayne claim and many have been prospected since World War II. The most important zone, located about 5

miles southeast of the Sandalayan group, has produced about 4,600 tons of ore. Most of the mineralized zones have produced only a few tons of ore material. Several small uranium shows exist on the Sandalayan property. However, geologic conditions appear unfavorable for the discovery of minable ore bodies with a reasonable amount of exploration by core drilling.

RECOMMENDATIONS

It is recommended that the application be denied.

Defense Minerals Administration
RECEIVED
DEC 10 1954

224 New Customhouse
Denver 2, Colorado

December 6, 1954

Mr. Robert F. George
Robert F. George and Associates
708 Railway Exchange Building
Denver, Colorado

Re: Docket No. DMEA 3501

Dear Mr. George:

Reference is made to your application for Government aid on the Gandcloyas mining claims.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of uranium is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

W. H. KING

W. H. King

E. N. Harshman

E. N. Harshman
for A. H. Koschmann

Field Team, Region IV

HNC:dm
cc: Subject
AHKoschmann
WMTraver
ALBroman
Mining Div.
DMEA
AEC
Chron

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

Defense Minerals Administration
RECEIVED
DEC 10 1954

224 New Customhouse
Denver 2, Colorado

December 6, 1954

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Report of Examination, DMEA Docket No. 3501 (Uranium)
Robert F. George & Associates, Sandcloyas group, San Juan County, Utah.

Enclosed are four copies of the report of examination on the subject docket, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. H. King
W. H. King

E. N. Harshman
E. N. Harshman
for A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEC 10 1954

Mining Division
Region IV

December 6, 1954

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination, DMEA Docket 3501 (Uranium), Robert F. George & Associates, Sandcloyas group, San Juan County, Utah

Enclosed are eleven copies of the engineering report of examination on the subject docket.

The applicant requested $7,060.00 to explore the Sandcloyas claims by 2,500 feet of core-hole drilling.

The engineer examiner concludes that any deposits of uranium likely to be discovered would not be significant. He recommends that the application be denied. We concur in this recommendation.

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 29, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3501 (Uranium) Robert F. George and Associates (Sandeloyas Group) San Juan County, Utah

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations," by R. T. Chew, Geological Survey, and Earl Belser, Bureau of Mines, and of Belser's engineering report on the subject docket.

Belser concludes that the closest showing of important uranium mineralization that provided any substantial production is located 5 miles distance from the Sandeloyas group and that any deposits likely to be discovered at the property would be small and probably difficult to pinpoint by core drilling without a large number of closely spaced holes. He recommends denial of the application.

I concur with his conclusions and recommendations.

The brochure, submitted with your memorandum of September 24, 1954, and the copy of the geologist Chew's report, furnished by E. N. Marshman, are also enclosed.

W. M. Traver

W. M. Traver

enclosures

cc 10
DMEA 3501
DMEA Chron.

WMT/peh

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

November 12, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3501, Robert F. George and Associates, Sandcloyes group, Claims Nos. 1-8, San Juan County, Utah

Enclosed are 11 copies of a geologic report by R. T. Chew III of the U. S. Geological Survey covering a field examination of the subject property.

The lithology and ore occurrences on this property are similar to hundreds of others in the area, none of which have produced significant amounts of ore. Mr. Chew concludes that there appears to be little possibility of making a significant discovery of uranium ore on these claims and recommends denial of the application.

I concur in these conclusions and recommendations.

for O.R. Macharen
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

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

October 28, 1954

Memorandum

To: A. H. Koschmann, Supervising Geologist, DMEA Field Team, Region IV

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3501, Robert F. George and Associates, Sandcloyas group, claims nos. 1-8, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report by R. T. Chew III, covering a field examination of the above-referenced property.

Unfavorable geologic conditions and poor production history, from a regional standpoint, have caused Chew to recommend that the application be denied.

WPWilliams
For Arnold L. Brokaw

WPW/mlr

Enclosures 11

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3501, Sandcloyas Group

Robert F. George and Associates

San Juan County, Utah

Uranium

Randall T. Chew III, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

November 26, 1954

DMEA 3501

SANDCLOYAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Randall T. Chew III
Geologist
Geological Survey

Carl Belser
Mining Engineer
Bureau of Mines

DMEA 3501

SANDCLOYAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Randall T. Chew III and Carl Belser

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colorado, applied for a Defense Minerals Exploration Administration loan of $7,060.00 to explore the Sandcloyas claims by 2,500 feet of core-hole drilling.

A field investigation was made on October 20, 1954, by an examining team of the Geological Survey and the Bureau of Mines. W. V. N. Jones and George Wright, associates of Robert F. George, accompanied the examining team on the examination.

The claims, which form a compact block 3,000 feet long by 2,400 feet wide in secs. 5, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian, San Juan County, Utah, are located in Pearson Canyon a tributary of Montezuma Canyon.

The ore deposition in the Sandcloyas group is in the Salt Wash member of the Morrison formation about 175 feet below the top and probably about 200 feet above the unexposed bottom of the formation. It consists of a series of sandstone lenses separated by maroon siltstones. In the uranium-bearing zone on the Sandcloyas claims, the lens is Salt Wash medium-grained and arkosic sandstone. The lower part of the sandstone is thickly bedded with many siltstone lenses ranging from thin seams to 1 foot thick. The upper portion of the sandstone is more massive and the total thickness is at least 50 feet.

On the west side of Pearson Canyon opposite the proposed exploration vanadium mineralization is exposed in a zone about 200 feet long and 3 feet thick that has been developed by three short adits. Union Mines Development Company estimated the production from these adits as a few tons while A. George Wright claims the production was from 7 to 8 carloads of vanadium ore.

On the east side of the canyon no development work has been done. The largest uranium deposits probably contain less than 10 tons of uranium ore. The other zones associated with carbonaceous trash probably contain no material of ore grade.

Literally hundreds of uranium-vanadium occurrences are known in the Montezuma Canyon area. Nearly all of these occurrences are of the magnitude of a few tons of sub-ore-grade uranium and low-grade vanadium. Although several small uranium "shows" exist on the property, lithogic conditions appear unfavorable for development of a mineable ore body with a reasonable amount of exploration and it is recommended that the application be denied.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3501, Robert F. George and Associates, Sandcloyas group, claims nos. 1-8, San Juan County, Utah

Uranium

Geologic Report

by

R. T. Chew III
U. S. Geological Survey

October 28, 1954

DMEA 3501

INTRODUCTION AND SUMMARY

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colo., requested DMEA aid in an exploration program on the Sandcloyas group, claims nos. 1-8, located in sec. 6, T. 35 S., R. 25 E, San Juan County, southeast of Monticello, Utah, in Pearson Canyon a tributary of Montezuma Canyon, (fig. 1). The proposed project consisted of about ten diamond-drill holes and the necessary bulldozer work and other expenses. The project would cost $7,060, of which the Government's share would be $5,315.

The property was inspected on October 20, 1954, by R. T. Chew III and H. S. Johnson representing the U. S. Geological Survey, Carl Belser representing the U. S. Bureau of Mines, and A. George Wright, W. V. N. Jones, and Cloyd Johnson representing the applicant.

Literally hundreds of uranium-vanadium occurrences are known in the Montezuma Canyon area where these claims are located. Nearly all of the occurrences are of the magnitude of a few tons of sub-ore grade uranium and low-grade vanadium. Several small uranium shows exist on the property. However, lithogic conditions appear unfavorable for development of a minable ore body with a reasonable amount of exploration and it is recommended that the application be denied.

GEOLOGY AND ORE DEPOSITS

The Sandcloyas group is located in the Salt Wash member of the Jurassic Morrison formation about 175 feet below the top of the unit. The bottom of the unit is not exposed but the mineralization is probably about 200 feet above the bottom of the unit. According to the Union Mines Development Company report on the Comb Ridge district, the Salt Wash member is about 370 feet thick in Pearson Canyon. It consists of a series of sandstone lenses separated by maroon siltstones. The sandstone lenses average about 30 feet thick and are more persistent in the Montezuma Canyon area than elsewhere on the Colorado Plateau. In the lens at the Sandcloya group, the Salt Wash sand is medium grained and arkosic. The lower part of the lens is thinly bedded with many siltstone lenses ranging from thin seams to one foot thick. The upper portion of the lens is more massive with some cross-bedding. The bottom of the sandstone lens is not exposed, but the lens is at least 50 feet thick.

On the west side of Pearson Canyon opposite the proposed exploration project, vanadium mineralization is exposed in a zone about 3 feet thick and 200 feet long. The mineralization is very low grade in vanadium and contains almost no uranium. On the east side of the canyon, in the area of the proposed exploration project, there is a zone of uranium-vanadium mineralization about 5 feet long and 6 inches to one foot wide. This zone is associated with a carbonaceous siltstone along a contorted contact which probably marks a diastem, or interval, within the lens. Radioactivity occurs in at least one other higher horizon associated with carbonaceous trash and some limonite. The sandstone underlying these radioactive zones is colored very light lavender or green, is bordered with liesegang banding, and forms zones from 1 to 3 feet thick.

The largest uranium-vanadium deposit on the east side of Pearson Canyon probably contains less than 10 tons of uranium ore. The other zones associated with trash probably represent no ore-grade material. According to the Union Mines Development Company Comb Ridge reports, a few tons of vanadium ore were shipped from the low-grade vanadium deposit on the west side of the canyon during World War II, when it was known as the Little Dick No. 3 claim. There are probably 100 tons of low-grade vanadium ore remaining, but it contains almost no uranium. Three short adits, the longest about 35 feet long, have been driven into the vanadium deposit. One prospect pit has been dug into the uranium deposit at a point about 100 feet north of the best mineralization.

Literally hundreds of similar mineralized zones are known in the Montezuma Canyon area. They occur in all horizons in the Salt Wash, though they may be concentrated at certain horizons. Many of these have been prospected during and since World War II. The largest group of mines, located in Middle Montezuma Canyon, about five miles southwest of the Sandcloyas group, has produced about 4,600 tons of ore. Most of the mineralized zones have produced none or only a few tens of tons of ore material.

There are no surface indications that the Sandcloyas occurrence is more favorable than most of the other occurrences in the Montezuma Canyon area. The thickness and lenticularity of the sandstone lens is about average and the abundance of low-grade showings would appear to indicate that this occurrence is similar to the others. Therefore, there appears to be little possibility of a significant discovery of uranium ore on these claims.

PROPOSED EXPLORATION

The applicant proposed an exploration program consisting of about 2,500 feet of drilling of which 500 feet was to be cored. Necessary bulldozer work and assays were also included. Total cost of the project was to be $7,060, of which the Government's share would be $5,315.00. About one-half mile of road building would be necessary to reach the drill sites.

CONCLUSIONS AND RECOMMENDATIONS

The lithology and ore occurrences at the Sandcloyas group appear similar to hundreds of others in the Montezuma Canyon area. None of the others have produced a significant amount of ore, and it is recommended that this application be denied.

This application has been brought to the attention of the U. S. Atomic Energy Commission, Exploration Division, Grand Junction Operations Office. The Commission has been asked for its help and advice in evaluating the property.

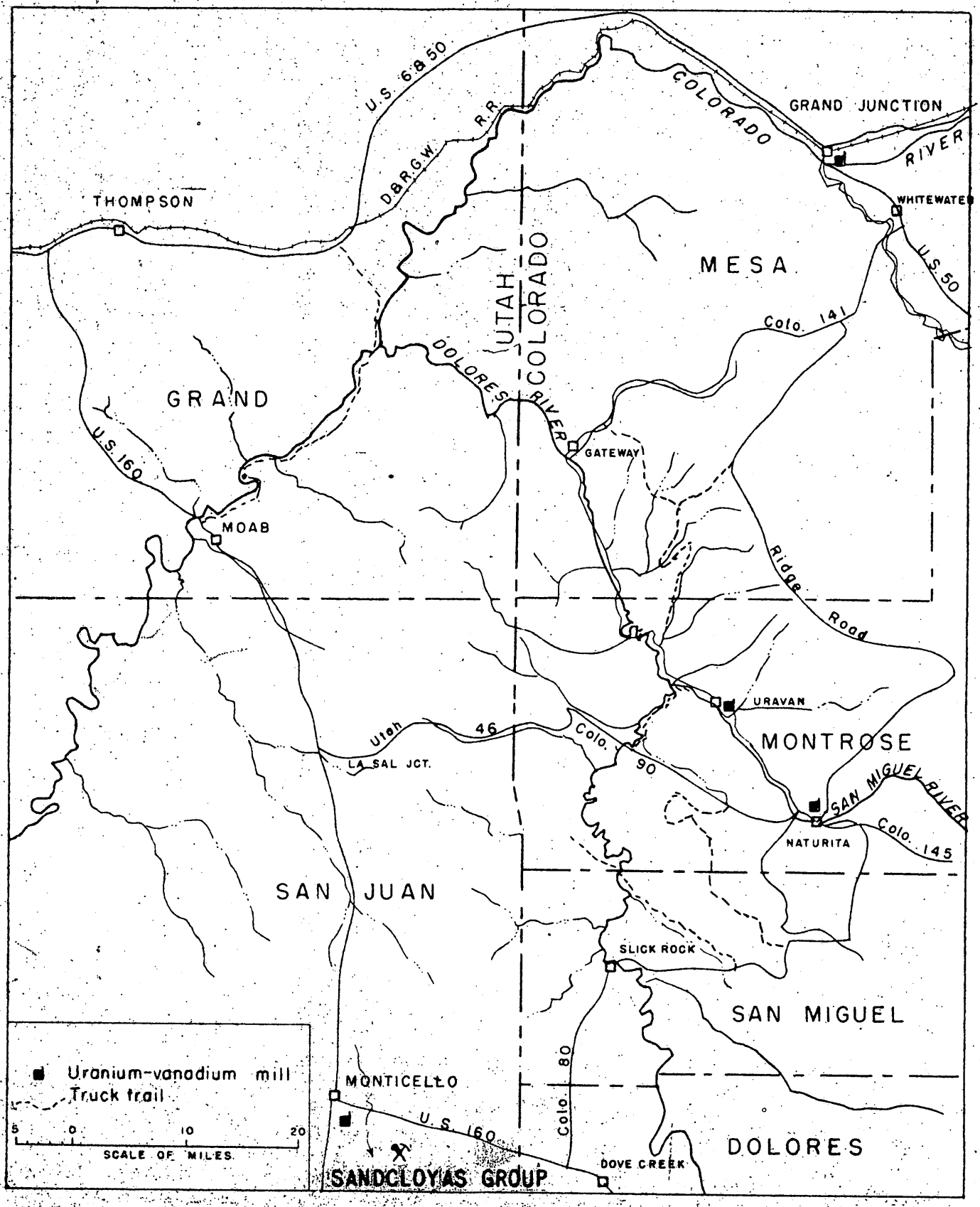
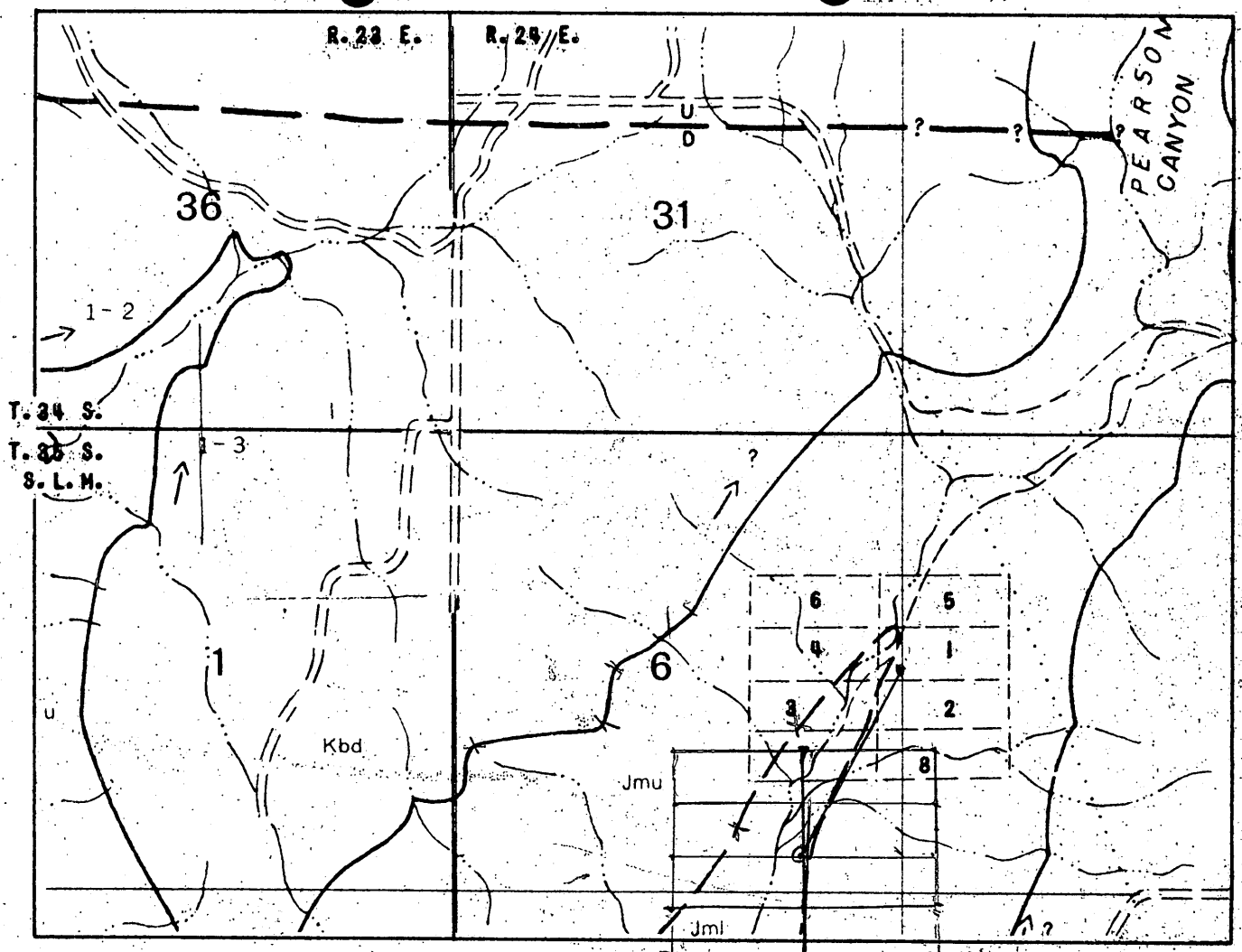


Figure 1. MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF THE SANDCLOYAS GROUP., ROBERT F. GEORGE ASSOCIATES, SAN JUAN COUNTY, UTAH



EXPLANATION

Kbd	BURRO CANYON AND DAKOTA SANDSTONE, UNDIFFERENTIATED
Jmu	UPPER (BRUSHY BASIN MEMBER) MORRISSON FORMATION
Jml	LOWER (SALT WASH AND WESTWATER MEMBERS) MORRISON FORMATION
— — —	CLAIM BOUNDARY
6	SECTION NUMBER
	EXISTING ROAD
U / D	HIGH-ANGLE FAULT (U, UPTHROWN SIDE, D, DOWTHROWN SIDE)
	FORMATION CONTACT DASHED WHERE LOCATED APPROXIMATELY

Note: BASE FROM PHOTOGEOLOGIC MAP VERDURE 7 QUADRANGLE

Figure 2. PHOTOGEOLOGIC MAP SHOWING APPROXIMATE LOCATION OF THE SANDCLOYAS GROUP, ROBERT F. GEORGE ASSOCIATES, SAN JUAN COUNTY, UTAH

DMEA 3501

SANDCLOYAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

Engineering Report

By Carl Belser
Mining Engineer
Bureau of Mines

DMEA 3501

SANDCLOYAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

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ILLUSTRATIONS

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2. Claim map showing proposed exploration, Sandcloyas Group, Robert F. George and Associates, San Juan County, Utah	3

DMEA 3501

SANDCLOYAS GROUP
ROBERT F. GEORGE AND ASSOCIATES
SAN JUAN COUNTY, UTAH

ENGINEERING REPORT

By Carl Belser

INTRODUCTION

Robert F. George and Associates, 708 Railway Exchange Building, Denver, Colorado, on September 21, 1954, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on the Sandcloyas claims in the Montezuma Canyon mining district, San Juan County, Utah. The application, DMEA 3501, requested aid in completing 2,500 feet of core-hole drilling at a total estimated cost of $7,060.00. This proposed exploration was to test the Salt Wash member of the Morrison formation for uranium mineralization.

A joint field examination was made by a Geological Survey and Bureau of Mines examining team on October 20, 1954. The examining team, as a result of their investigation, recommended that the applicants' proposal be denied.

ACKNOWLEDGMENTS

W. V. N. Jones and A. George Wright, associates of Robert F. George and representing the applicant, accompanied the examining team.

Arnold L. Brokaw, District Supervisor, Geological Survey, Grand Junction, Colorado, assigned Randall T. Chew III, geologist, to make the examination as the Geological Survey member of the team. Chew was accompanied by H. S. Johnson of the Geological Survey.

The Atomic Energy Commission was consulted concerning production and uranium mineralization in the Pearson Canyon area and the Geological

Survey requested their advice in evaluating the property.

LOCATION, TOPOGRAPHY, AND CLIMATE

The Sandcloyas group is in Pearson Canyon, a tributary of Montezuma Canyon, and is located in secs. 5, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian, in the Montezuma Canyon mining district, San Juan County, Utah (fig. 1).

The property covers the Salt Wash rims on both sides of Pearson Canyon for a distance of 3,000 feet. The upper part of the Salt Wash member forms steep escarpments along the sides of the canyon. In the vicinity of the Sandcloyas claims the uranium mineralized zone is near the bottom of the visable escarpment.

From Monticello it is 15 miles by road to the property, the last 3 miles of which is an access road, in poor condition. Altitudes at the Sandcloyas claims range from about 6,500 feet at the bottom of the canyon to about 7,000 feet on the bench above the rims. Annual rainfall is light and the country is classed as semi-arid. Winter snowfalls seldom exceed 6 inches and wet clayey roads are considered the greater handicap. Water for drilling can be obtained from a spring a few miles distant and water for domestic use is hauled from Monticello. Pinion, suitable for mine use grows on the property. Large timbers and dimension lumber can be obtained in Monticello.

The nearest ore depot, supply point, and labor market is Monticello. The nearest railroad is the Denver and Rio Grande Western at Thompson, Utah, 89 miles north over U. S. Highways 160 and 50.

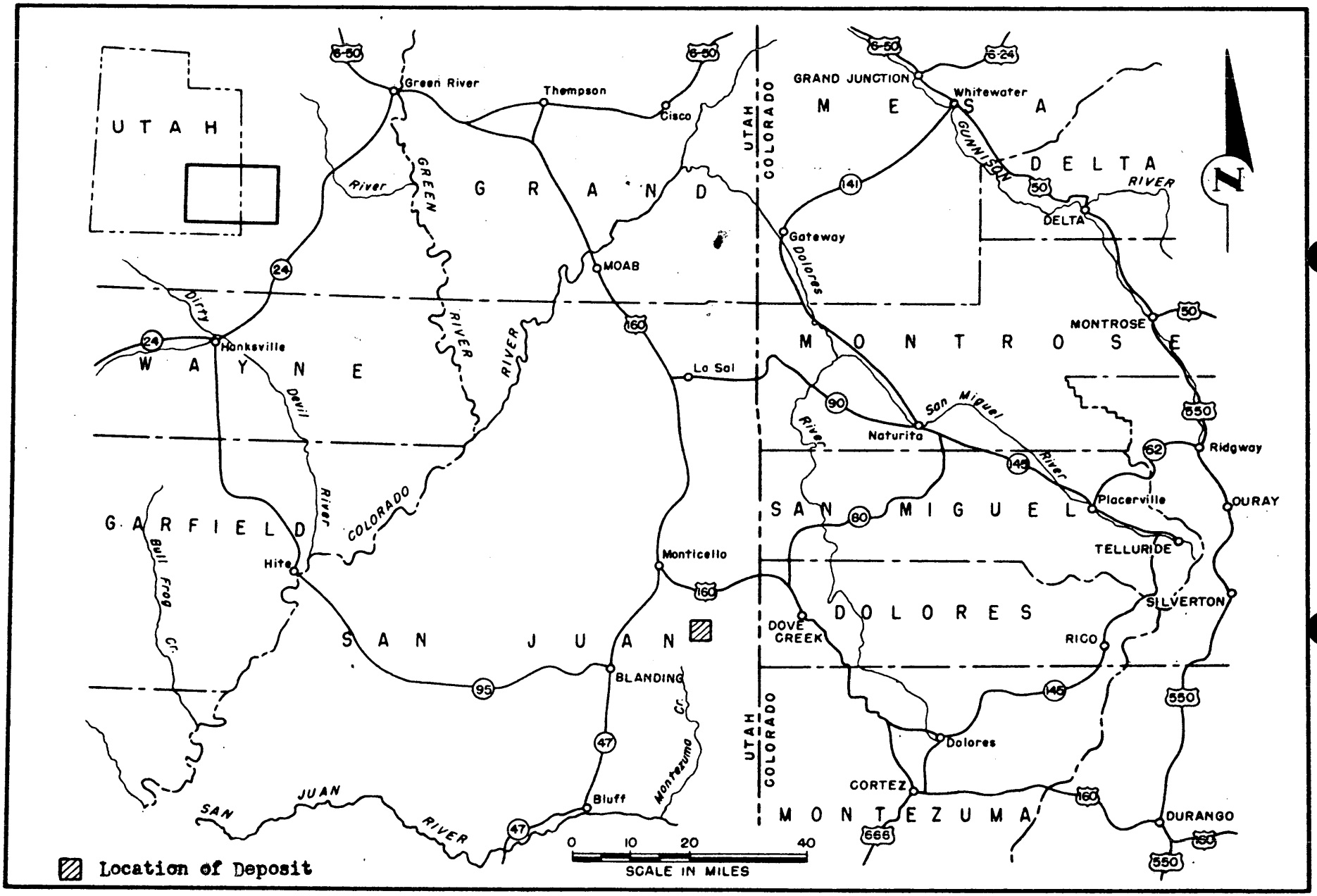


FIGURE 1 - LOCATION MAP, SANDCLOYAS GROUP, ROBERT F. GEORGE AND ASSOCIATES, SAN JUAN COUNTY, UTAH (DMEA 3501)

HISTORY AND PRODUCTION

According to reports of the Union Mines Development Company, a few tons of vanadium ore were shipped from the low-grade vanadium deposit on the west side of the canyon during World War II, when it was known as the Little Dick No. 3 claim. A. George Wright, representing the applicant, places the past production at from 7 to 8 cars of vanadium ore. Development consists of three short adits driven into the face of the cliff; after World War II, the Little Dick claims were abandoned. The area was later relocated as the Sandcloyas claims by Cloyd Johnson and amended on June 22-24, 1954. The claims were leased to A. George Wright on June 22, 1954, and the lease was transferred by Wright to Robert F. George and Associates on September 9, 1954.

Formerly the property was reached by an access road from the south which made the distance from the mine to Monticello about 23 miles. The new access road, coming in from the north and built in 1954, has shortened the distance to 15 miles.

No development or production has been done on the east side of the canyon where the applicant's proposed exploration program is located.

OWNERSHIP AND EXTENT

The Sandcloyas group, as submitted in the application, consists of eight unpatented 600- by 1,500-foot claims in Secs. 5, 6, 7, and 8, T. 35 S., R. 25 E., Salt Lake meridian (fig. 2). The claims are recorded in the office of the County Recorder of San Juan County, Utah, as follows:

Claim	Book	Page
Sandcloyas No. 1	121	344
Sandcloyas No. 2	121	344
Sandcloyas No. 3	121	345
Sandcloyas No. 4	121	345
Sandcloyas No. 5	121	346
Sandcloyas No. 6	121	346

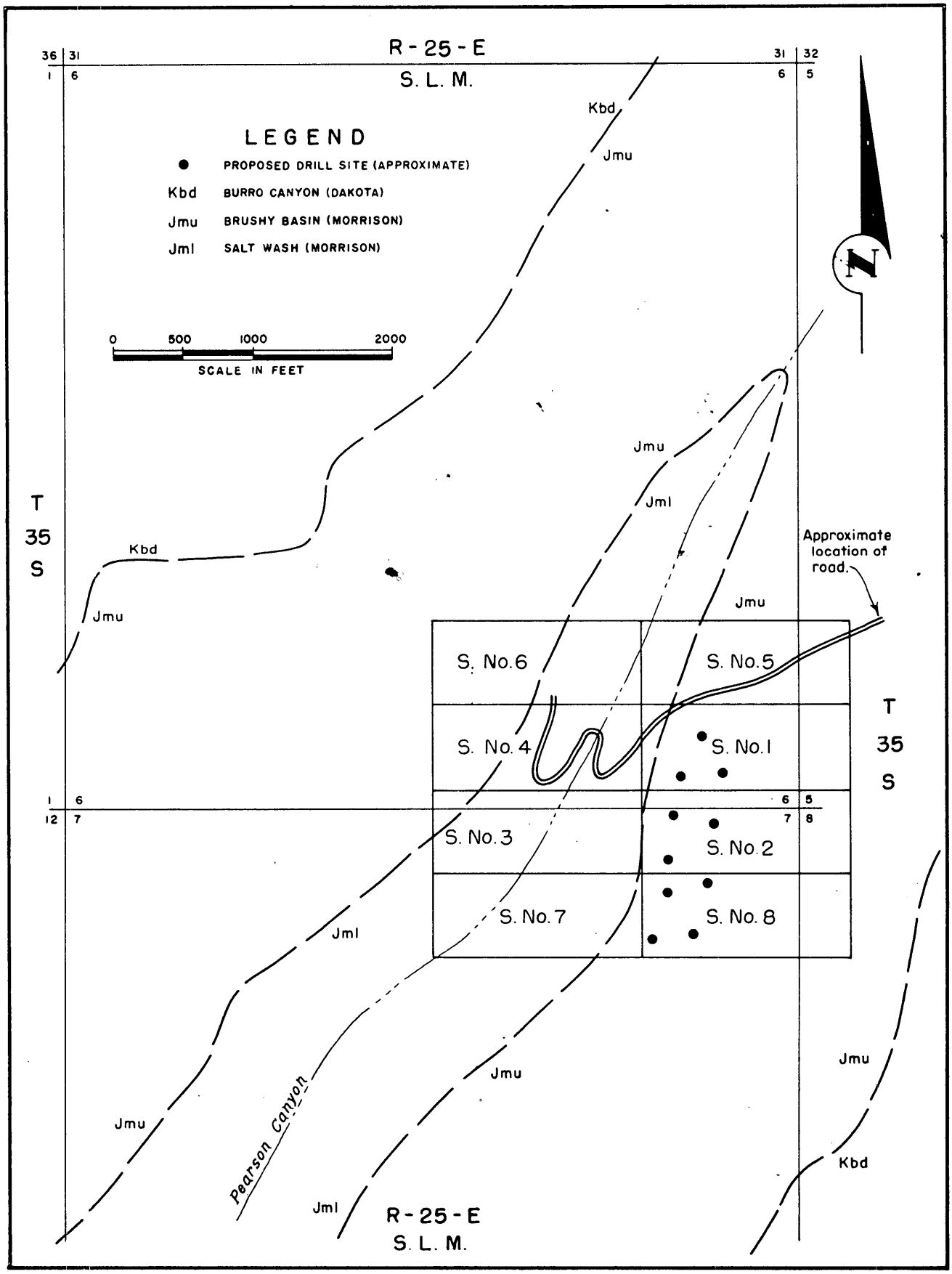


FIGURE 2 - CLAIM MAP SHOWING PROPOSED EXPLORATION, SANDCLOYAS GROUP, ROBERT F. GEORGE AND ASSOCIATES, SAN JUAN COUNTY, UTAH (DMEA 3501)

Sandcloyas No. 7	121	347
Sandcloyas No. 8	121	347

The applicants' lease extends to June 22, 1959, with the privilege of renewal.

DESCRIPTION OF DEPOSITS

The exposed rocks on the Sandcloyas claims are Morrison formation of the Upper Jurassic. In the bottom of the canyon the Salt Wash member of the Morrison is exposed while the Brushy Basin member is exposed higher up on the sides of the canyon. The Salt Wash member is thought to be about 370 feet thick in Pearson Canyon with the favorable uranium ore horizon about 175 feet below the top of the unit in a sandstone lens about 50 feet thick. On the west side of the canyon vanadium mineralization is exposed in a zone about 3 feet thick and 200 feet long which has been developed by several short adits. Uranium mineralization is slight. An estimated 100 tons of low-grade uranium ore remains in this area. On the east side of the canyon and in the same horizon there is a zone of uranium ore from 6 to 12 inches thick and 5 feet long. Radioactivity also exists in a slightly higher horizon where the uranium is associated with carbonaceous trash and some limonite. The largest visible deposit probably contains less than 10 tons of uranium ore.

MINEABLE ORE RESERVES

Total mineable reserves of uranium ore at this time are estimated as less than 15 tons.

PRESENT STATUS

Exploration and Development

The west side of the canyon has been developed by three short adits aggregating less than 90 feet in length. No development work has been done on the east side of the canyon.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property and the only other facility is an access road.

PROPOSED EXPLORATION

The applicant proposed to further explore the claims by ten core-drill holes aggregating 2,500 feet in length. The total cost, including bulldozing, was estimated at $7,060.00, or $2.82 a foot. The approximate locations of the proposed holes are shown on figure 2.

ESTIMATED COST OF PROJECT

The application, as submitted, includes all necessary costs except an item of payroll taxes and liability insurance of $30.00. Furthermore, the assaying cost shown is high and supervision estimates are low.

Estimated Cost of Core-hole Drilling

Independent Contracts		
Plug bit drilling, 2,000 feet of hole at $2.00 a foot	$4,000.00	
Core drilling 500 feet of hole at $2.50	1,250.00	
Bulldozing 100 hours at $8.50 an hour plus $100.00 "move in"	950.00	
Total independent contracts		$6,200.00
Labor and Supervision		
Labor	None	

Supervision		
Two months at $300.00 a month	$600.00	
Total labor and supervision		$600.00
Operating Materials and Supplies		None
Operating Equipment		None
Initial Rehabilitation and Repairs		None
New Buildings, Improvements, etc.		None
Miscellaneous		
Core boxes (12 at $5.00 each)	60.00	
Assaying (20 at $5.00 each)*	100.00	
Payroll taxes and liability insurance (5 percent of $600.00)**	30.00	
Total Miscellaneous		190.00
Total estimated core-hole drilling costs		$6,990.00
Average cost per foot for 2,500 feet of core-hole drilling***		$2.85

* $100.00 less than applicants' estimate
** $30.00 more than applicants' estimate
*** $0.02 less than applicants' estimate

SUMMARY COST OF PROJECT

Core-hole drilling 2,500 feet at $2.85 a foot	$7,000.00
Government participation--75 percent	5,250.00
Total time for completion	2 months

CONCLUSIONS

There are hundreds of mineralized zones known in the Montezuma Canyon area similar to those on the Sandcloyas claims and many have been prospected since World War II. The most important zone, located about 5

miles southwest of the Sandcloyas group, has produced about 4,600 tons of ore. Most of the mineralized zones have produced only a few tons of ore material. Several small uranium shows exist on the Sandcloyas property. However, geologic conditions appear unfavorable for the discovery of mineable ore bodies with a reasonable amount of exploration by core drilling.

RECOMMENDATIONS

It is recommended that the application be denied.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
SEP 27 1954

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. 3501
Metal or Mineral Uranium
Date Received
Estimated Cost $7,060
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: Robert F. George, 708 Railway Exchange Bldg., Denver, Colo., W.V.N. Jones, Aspen, Colo., and A. George Wright, Monticello, Utah, doing business as Robert F. George & Associates, 708 Railway Exchange Bldg., Denver, Colo.

(*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 (Tract-2) Sandcloyns 1 to 8 inclusive and the same being all contiguous and adjoining and the same being located in the Montezuma Mining district, San Juan County, State of Utah, and specifically therein in Section 6, Tp. 35 S., R. 25 E., S.L.B.M.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. Secured via Lease from Cloyd Johnson & Lewis Fuller of Monticello, Utah.

(*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. (Said Lease copy attached)

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

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

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.

(Copy attached)

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

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

(*c*) The work will start within 30 days and be completed within 2 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)? (YES)

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

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

Explain in detail on acompanying paper. (Copy attached)

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 14 Sep, 1954

Robert F. George & Associates
(Applicant)

By Robert F. George

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

SHEET-1

Robert F. George & Associates
708 Railway Exchange
Denver 2, Colorado

3-f: continuation -- Sandcloyes 1 to 8 incl. filed at Monticello, Utah.
Entry No. M-9250
Amended Notice of Lease Application
Claims surveyed, Reg. Eng'r 1351, Utah.

(Unpatented)

Name of Claim	Book	Page
Sandcloya-1	121	344
Sandcloya-2	121	344
Sandcloya-3	121	345
Sandcloya-4	121	345
Sandcloya-5	121	346
Sandcloya-6	121	346
Sandcloya-7	121	347
Sandcloya-8	121	347

All of the above being located in Section 6, Tp. 35 S., R. 25 E. in San Juan County, State of Utah.

Robert F. George & Associates
708 Railway Exchange
Denver 2, Colorado

4-a; continuation -- Sandcloyas 1 to 8 incl.

Properties have two drifts that are approximately twenty feet and fourty feet in length. The excavations were made in 1941 and the material mined was Vanadium. In the Spring of the Year 1954, some hundred feet of hand rim stripping in the vicinity of the above workings tended to disclose good showings of Uranium ore in place.

The area is accessible to motorized vehicles. Paved State Road 160 is followed eastward approximately 5 miles from Monticello, Utah, thence southerly on what is known locally as the 'Little Boulder Road' for a distance of approximately nine miles to property site.

-b: Specific Production figures not available.

-c: Ores of Uranium occur in bedded deposits in sandstone of the third Morrison formation in the area. The Sandcloya claims presents Uranium ore showings in place along the Strike of the Sandstone formation. Pre-exploratory work has shown mineralized zones exist for distances of fifty to over a hundred feet in a rather uniform manner along the strike of the sandstone outcrops. Samples have averaged as high as .38 % U_3O_8 in content.

Because of the extent of the numerous Uranium ore showings occuring on the Sandcloya properties, it is believed an exploratory drilling type program will prove the economic possibilities of the property in a manner that is consistent with the best practices. Drilling will be done back of Uranium ore shows in practically all instances to explore the third Morrison formation.

-d: Monticello, Utah, is the main residence point within the area of properties. Accessibility is over excellent paved highway and good secondary type roads. Time from property site to Monticello, Utah, is approximately twenty minutes by automobile.

-e: Manpower, materials and supplies are available at Monticello, Utah. Water for industrial and domestic purposes occurs within two miles of the Sandcloya properties. Also, climatically, the weather is considered favorable from the standpoint of working conditions.

5-b: continuation --

(See Sandcloya Property Map)

The above plat shows via red-dotted line known extent of zones of Uranium ore. Small circles indicate approximate locations of drill holes in relation to proving up the continuity features of the known ore showings in place. Holes of approximately two hundred feet in depth will tend to prove the ore-bearing zones. This relatively shallow drilling depth is made possible in this property area due to erosional features. The high Dakota formation is gone leaving only a small section of the upper 'Brushy Basin' member of the Morrison formation in evidence for drilling activity.

5-b: continuation --

The dip on the Third Morrison is from 2° to 5° to the east; hence on the east side of the property the holes will be deeper than the west, with an estimated average of 200 ft. throughout. The first five holes are numbered in red back of the ore rim shown in yellow. We have not laid out a further pattern for the ten holes requested as this will of necessity have to be worked out on the ground with the Atomic Energy Commission engineers, who have expressed willingness to assist in this program through the Grand Junction office. The ten to eleven holes necessary will include 500 ft. of coring and these figures of depth are estimated, but it is our thought that 2500 ft. of holes will be necessary for the projected ten to eleven holes contemplated. The road is dotted in on the map and the requested 100 hours of bulldozer work will be of mostly surface and sub-soil excavation work with very little rock, with an estimated 2400 ft. of cross-patterned roadwork.

Robert F. George & Associates
708 Railway Exchange
Denver 2, Colorado

5-d: continuation --

It is proposed that drilling be done under contract with a reliable concern; Such concerns as 'Sprague & Henwood, Joy Manufacturing Company or the Minerals Engineering Company' being in this category.

Supervision in the field is to be under Mr. A. George Wright, a registered professional engineer and a registered land surveyor in the State of Colorado. In the past Mr. Wright has served as Chief Field geologist for the International Minerals and Chemicals Corporation on a Manganese project at Chamberlain, South Dakota. Also, as Superintendent of Mines and Quarries for the U. S. Gypsum Company at Sweetwater, Texas. As Assistant Footage Contract Engineer under Mr. Wm. Boetcher, on the Stork Tunnel development of the Climax Molybdenum Company at Climax, Colorado.

Administration will be under the direction of Mr. Robert F. George, of the firm of George and Downing, Oil Producers, of Denver, Colorado.

SHEET-4

Robert F. George & Associates
708 Railway Exchange
Denver 2, Colorado

6- : ESTIMATE OF COSTS --

6-a: Independent Contracts --

No.Ft. Wet Rotary Type Drilling	$ Per Plug Ft.	$ Per Core Ft.	Total
2000 Feet	$ 2.00		$ 4000
500 "		$ 2.50	$ 1250
2500 Feet	$ 4000	$ 1250	$ 5250

To test Third Morrison Formation Holes will run between 160 and 220 feet in depth.

Bulldozer Operations	$ Per Hour	$ Move In	Total
100 Hours	$ 8.50	$ 100	$ 950
100 Hours	$ 850	$ 100	$ 950

Assay Costs	$ 200
Core Boxes, 10 holes (12 @ $5.00)	$ 60
Supervision, 2 months @ $300.00	$ 600

6-b: Laborers, Helpers, furnished by Contractor.

Supervision furnished by Applicant.

6-c: Operating Materials and Supplies furnished by Contractor.

6-d: Operating Equipment furnished by Contractor.

6-e: Rehabilitation and Repairs --- (None Required)

6-f: New Buildings and Fixed Installations - (None Required)

6-g: Miscellaneous - (None Required) - Included in Contractor's Acct.

6-h: Contingencies - (None Required) - Included in Contractor's Acct.

7-b: Share of Costs --

Total Estimated Costs	$ 7080.00
Applicant's Costs	$ 1770.00
DMEA Costs	$ 5310.00

SHEET-4

Robert F. George & Associates
708 Railway Exchange
Denver 2, Colorado

6- : ESTIMATE OF COSTS --

6-a: Independent Contracts --

No.Ft. Wet Rotary Type Drilling	$ Per Plug Ft.	$ Per Core Ft.	Total
2000 Feet	$ 2.00		$ 4000
500 "		$ 2.50	$ 1250
2500 Feet	$ 4000	$ 1250	$ 5250

To test Third Morrison Formation Holes will run between 160 and 220 feet in depth.

Bulldozer Operations	$ Per Hour	$ Move In	Total
100 Hours	$ 8.50	$ 100	$ 950
100 Hours	$ 850	$ 100	$ 950

Assay Costs	$ 200
Core Boxes, 10 holes (12 @ $5.00)	$ 60
Supervision, 2 months @ $300.00	$ 600

6-b: Laborers, Helpers, furnished by Contractor.

Supervision furnished by Applicant.

6-c: Operating Materials and Supplies furnished by Contractor.

6-d: Operating Equipment furnished by Contractor.

6-e: Rehabilitation and Repairs --- (None Required)

6-f: New Buildings and Fixed Installations - (None Required)

-g: Miscellaneous - (None Required) - Included in Contractor's Acct.

6-h: Contingencies - (None Required) - Included in Contractor's Acct.

7-b: Share of Costs --

Total Estimated Costs	$ 7060.00
Applicant's Costs	$ 1745.00
DMEA Costs	$ 5315.00

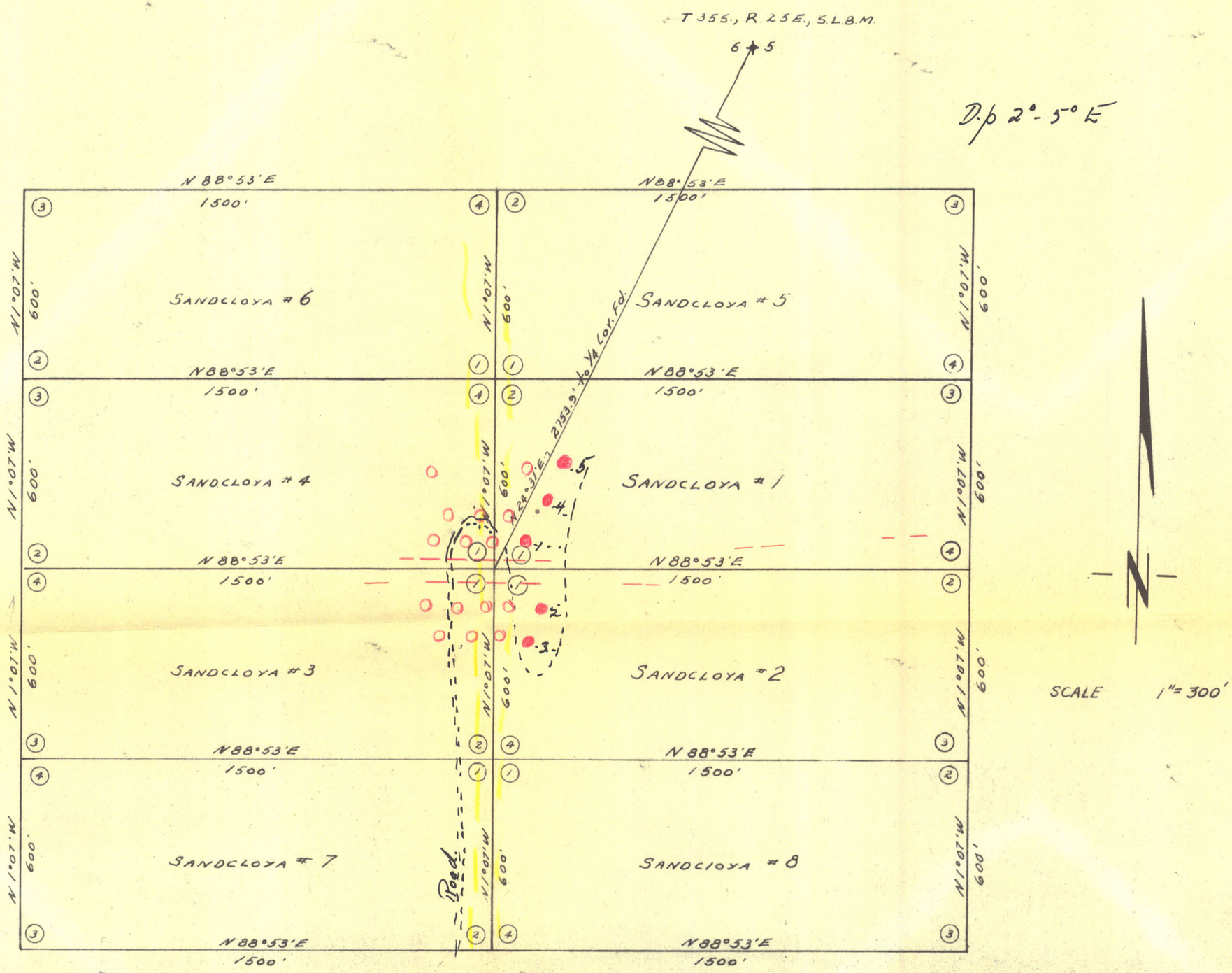
OFFICIAL BUSINESS

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

1954
COLO.

21

Defense Minerals Exploration Administration
U.S. Dept. of the Interior
Interior Bldg.
Washington 25, D.C.



SURVEYED JUNE 22-24, 1954

Frank A. Sherer
REG. LAND SURVEYOR #1361

SURVEY FOR ROB'T. F. GEORGE & ASSOCIATES

708 RAILWAY EXCHANGE BLDG., DENVER, COLORADO

GEO. WRIGHT'S LEASE FROM CLOYD JOHNSON IN SECTION 6 TOWNSHIP 35 SOUTH, RANGE 25 EAST, S.L.B.M.

SAN JUAN SURVEYING SERVICE
MONTICELLO, UTAH