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

Department of the Interior
Defense Minerals Administration
RECEIVED
NOV 24 1954

November 23, 1954

Memorandum

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

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

Subject: DMEA Docket No. 3470, Monte Cristo Uranium Company, Candy Cane Group, San Juan County, Utah

I have reviewed the subject report and have discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

We concur with the recommendation of the Field Team that the application involved under the subject docket be denied.

The report has been forwarded to the Chief, Minerals Division, in accord with the routing slip attached thereto.

John E. Crawford
John E. Crawford

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

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

PROPERTY OF THE UTAH
Defense Minerals Exploration
Research
NOV 24 1954

November 23, 1954

Memorandum

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

From: John E. Crawford, Bureau of Mines Member
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John E. Crawford

DEPARTMENT OF THE INTERIOR
March 3, 1849

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

[illegible] Denver 2, Colorado

[illegible stamp: ... Received ...]

[illegible date]

[illegible address block]

Re: [illegible]

Gentlemen:

[illegible]

[illegible]

[illegible]

Very truly yours,

W. H. King [signature]
[illegible], Region IV

for E. N. Harshman [signature]
[illegible]
[illegible], Region IV

HMC:dm

cc: DMEA
Administrator
WMTraver
AHKoschmann
ALBrokaw
Mining Div.
AEC
Chron

Reviewed by
DMEA OPERATING COMMITTEE

(date)

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

W S King

for E. N. Hawkins

Reviewed by
DMEA OPERATING COMMITTEE
11-8-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR

COPY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

October 28, 1954

Mr. Demont Neilson
Mr. Richard Minasian
Monte Cristo Uranium Company
Box 596
Moab, Utah

Re: Docket DMEA 3470

Gentlemen:

Reference is made to your application for Government aid on the Candy Kane Group.

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,

/s/ W. H. KING
W. H. King
Field Team, Region IV

/s/ E. N. HARSHMAN
A. H. Koschmann
Field Team, Region IV

HMC:dm

cc: DMEA
Administrator
WMTraver
AHKoschmann
ALBrokaw
Mining Div.
AEC
Chron

Reviewed by
DMEA OPERATING COMMITTEE
11-8-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

[illegible] OF THE INTERIOR
Defense Minerals Administration
RECEIVED
[illegible] 1954

Mining Division
Region IV

[illegible]
[illegible]

[illegible]

Memorandum

To: [illegible] Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of [illegible] (Uranium)
[illegible] Uranium Company ([illegible] Group)
San Juan County, [illegible]

[illegible]

[illegible]

[illegible] in this recommendation.

W. H. King
[illegible] King

[illegible]

[illegible]
11-8-54

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 131
Denver Federal Center
Denver 14, Colorado
October 14, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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

Subject: DMEA 3473 (Uranium) Monte Cristo Uranium Company (Candy Kane group) San Juan County, Utah

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations," by M. R. Johnson, Geological Survey, and Carl Seiser, Bureau of Mines, and of Carl Seiser's engineering report on the subject loan application.

Seiser concludes that the applicant's claims are unlikely to show ore bodies of economic importance by Government-assisted exploration and recommends denial. This application was discussed with the U. S. Atomic Energy Commission.

I approve the recommendation.

The brochure provided with your memorandum of August 30, 1954, instructing us to make a field examination is returned herewith.

W. M. Traver

W. M. Traver

Enclosures

cc: (1)
DMEA 3473
DMEA Loan.

WMT/pmx

11-8-54

IN REPLY REFER TO:

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

October 19, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3470, Monte Cristo Uranium Company (uranium), Candy Kane group, San Juan County, Utah

Enclosed are 10 copies of a geologic report by H. S. Johnson of the U. S. Geological Survey covering the above docket.

Mr. Johnson concludes that significant deposits of uranium may occur in the vicinity of the applicant's property but that there is no geologic evidence to indicate a specific exploration target on the Candy Kane claim group. He therefore recommends denial of the application for exploration assistance.

One copy of the geologic report has been furnished F. M. Traver. He will forward it directly to you.

E. M. Hardman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (10)

Reviewed by
DMEA OPERATING COMMITTEE
11-8-54
(date)

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

October 15, 1954

Memorandum

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

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3470, Monte Cristo Uranium Company (Uranium) Candy Kane group, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report by H. S. Johnson, covering the above-referenced DMEA application.

As a result of field examination, Johnson concludes that geologic conditions on the property are not favorable enough to warrant DMEA assistance for exploration. Johnson, therefore, recommends that the application be denied.

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

W Williams
For Arnold L. Brokaw

WPW/mlr

Reviewed by
DMEA [illegible] COMMITTEE
11-8-54

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKay, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3473, Candy Kane Group

Monte Cristo Uranium Company

San Juan County, Utah

Remains


E. E. Johnson, Geologist
Geological Survey

Earl Balser, Mining Engineer
Bureau of Mines


October 7, 1954


Reviewed by
INDEX DEPARTMENT COMMITTEE
11-8-54
(date)

DMEA 3470

CANDY KANE GROUP
MONEY GRINGO URANIUM COMPANY
SAN JUAN COUNTY, UTAH

# Summary, Conclusions, and Recommendations

By H. G. Johnson
Geologist
Geological Survey

Jack Palmer
Mining Engineer
Bureau of Mines

DMEA 3473

CANDY KANE GROUP
MONTE CRISTO URANIUM COMPANY
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By E. S. Johnson and Carl Heiser

Monte Cristo Uranium Company, a partnership, Richard Hinaman and Dumont Hallson, P. O. Box 396, Moab, Utah, has applied for a Defense Minerals Exploration Administration loan of $25,150.00 to explore the Candy Kane group of claims by 7,000 feet of core drilling.

A field investigation was made on September 28, 1954, by an examining team of the Geological Survey and Bureau of Mines. Richard Hinaman, president, and Dumont Hallson, vice-president of Monte Cristo Uranium Company, accompanied the examining team and the proposed exploration was discussed with them.

The exposed rocks on the Candy Kane group of claims are essentially flat dipping shales and sandstones. The Moenkopi formation of chocolate brown shale and gray shale is exposed near the bottom of Cane Springs canyon. The Chinle formation of the Upper Triassic is directly above the Moenkopi and consists of buff and red sandstones, shales, and red and green mudstones. The Chinle is capped by about 130 feet of massive, cross-bedded buff and dull red sandstones of the Wingate formation of the Lower Jurassic, which, in turn, is covered by some gray and white and red sandstones of the Kayenta formation.

Uranium occurs in the Monitoch member of the Chinle formation which is near the bottom of the Chinle. In the vicinity of the Candy Kane group the Monitoch contains considerable green mudstone with some fossilized wood. Counter readings of two to three times background count can be obtained, but no ore or channels are visible. In the vicinity of

the Candy Kane group no faulting was noted, but a strong northwesterly striking fault crosses the Cane Creek about 1 mile above the claims.

No ore has been produced from the property. The nearest substantial producer at this time is Robinet and Snyder, some 7 miles farther down Cane Springs canyon. No development work has been done on the property. There are no known channels in the Moenkopi member and no data that would indicate that it will be productive on the Candy Kane group.

The examining team does not believe that the property has enough merit to justify Government participation in an exploration project and recommends denial of the application. This decision has been discussed with the U. S. Atomic Energy Commission by the Geological Survey's Grand Junction office.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

## DMEA 3470, Monte Cristo Uranium Company, Candy Kane group, San Juan County, Utah

Uranium

Geologic report

by

H. S. Johnson
U. S. Geological Survey

DMEA 3470

## INTRODUCTION AND SUMMARY

Monte Cristo Uranium Company of Moab, Utah, applied on August 11, 1954, for DMEA assistance to explore for uranium on the Candy Kane group of claims including the Candy Kane, Candy Kane No. 2, Mortgage Lifter, Johnny Cake, Johnny Cake No. 2, Debby, Mint, and Mint No. 2 claims in secs. 9 and 16, T. 28 S., R. 22 E., S.L.M., San Juan County, Utah (fig. 1). These claims are in Cane Creek Canyon and can be reached by 3 miles of fairly good dirt road leading down Cane Creek from Cane Springs on Highway 160 about 13 miles south of Moab, Utah. The claims are recorded in the country courthouse at Monticello, Utah as follows:

| Claim | Book | Page |
|---|---|---|
| Candy Kane | 37 | 518 |
| Candy Kane No. 2 | 139 | 241 |
| Mortgage Lifter | 37 | 516 |
| Johnny Cake | 37 | 517 |
| Johnny Cake No. 2 | 139 | 243 |
| Debby | 139 | 243 |
| Mint | 97 | 122 |
| Mint No. 2 | 139 | 241 |

The applicants stated verbally that these claims have since been relocated or amended to take advantage of Public Law 585 - 83rd Congress (Multiple Land Use Bill).

On September 22, 1954, the Candy Kane group of claims was examined by W. P. Williams and H. S. Johnson of the U. S. Geological Survey and Carl Belser of the U. S. Bureau of Mines. Richard Minasian and DeMont Neilson of Monte Cristo Uranium Co., accompanied the DMEA field team representatives during the examination.

Although the general area of this part of the Colorado Plateau is thought to be favorable for uranium deposits, the geology of the claims is not considered sufficiently favorable to justify a drilling program except as a gamble of the "shot in the dark" variety. It is recommended that the application be denied.

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

## GEOLOGY

The rocks exposed in the vicinity of the Candy Kane group consist of nearly flat-lying shales, siltstones, and sandstones of the Triassic Moenkopi, Chinle, and Wingate formations and the Jurassic (?) Kayenta formation. The Permian Cutler formation outcrops about six miles down Cane Springs Canyon to the northwest and is probably 200-250 feet below the canyon floor within the boundaries of the Candy Kane group.

The Cutler formation, where exposed 6 miles to the northwest of the subject claims, is about 400 feet thick and is predominantly purplish-red arkosic sandstone with thin interbedded red shales and mudstones.

Overlying the Cutler formation, sometimes with slight angular unconformity, is the Triassic Moenkopi formation. The Moenkopi is about 200-250 feet thick and is composed of evenly bedded red-brown shale and siltstone and thin ledges of flaggy fine-grained sandstone.

The Chinle formation is about 200-250 feet thick in the vicinity of the Candy Kane group and may be roughly divided into three fairly distinct units. The lower unit forms a thick ledge 25-50 feet thick, made up largely of gray-green limy claystone and siltstone, coarse conglomeratic sandstone, and limy silt-pebble conglomerate. Wood fragments and small logs, in part carbonized and in part replaced with calcite (?), limonite, gypsum, and jarosite, are fairly abundant in the lower few feet. This ledgey unit is probably equivalent to the well defined Moss Back member that is present to the west. The Moss Back is pinching out or changing character to the northeast along a northwest-southeast trending line passing approximately through the Candy Kane group. Overlying this lower Chinle unit is about 100 feet of gray-green limy siltstone and fine-grained sandstone. Above this is about 100 feet or so of red shale, siltstone, and fine-grained sandstone.

The Wingate sandstone forms a 300-foot cliff above the Chinle formation in the walls of Cane Springs Canyon. It is fine-grained buff to light brown sandstone that is largely eolian in origin. Above this and capping the partially dissected plateau is the 150-200 foot thick Kayenta formation composed mainly of red fluviatile sandstones and shales.

There is no faulting in the immediate vicinity of the Candy Kane group, but about a mile to the east a northeast trending normal fault has 200-300 feet displacement where it crosses Cane Creek.

## ORE DEPOSITS

No economic uranium deposits are known in the immediate vicinity of the Candy Kane group. Weak uranium mineralization, averaging less than 0.05 percent $U_3O_8$ but approaching ore grade (0.10% $U_3O_8$) in a few places, is common at the Chinle-Moenkopi contact. Most of the mineralization is associated with fragments of carbonized wood and is very thin and discontinuous in size and irregular in grade. A few small carbonized logs and carbon seams in the vicinity are estimated to assay up to 0.20 to .30 percent $U_3O_8$. There are no workings on the Candy Kane group and no systematic prospecting has been undertaken other than rim walking of the Chinle-Moenkopi contact with a Geiger counter. On the Rainshower claim, joining the Mint claims on the east, a 20-foot adit has been driven at the base of the Chinle-Moenkopi contact, but no ore was found.

About 7 or 8 miles to the northwest down Cane Springs Canyon, several small- to medium-sized deposits have been found in the Cutler and Chinle formations. The Cutler deposits are of two types: (1) bedded copper-uranium deposits in white arkosic sandstone lenses and (2) uranium-vanadium deposits in gouge and shattered sandstone along small, nearly vertical normal faults. The first of these two types usually does not contain more than a few hundred tons of mineralized rock. To date very little production has come from these. The second type of Cutler deposit is more promising and is supporting small scale production from three deposits along Cane Creek. This type Cutler deposit may have a potential of 5,000-25,000 tons of ore, or possibly more, in the vicinity of the three active mines. The average grade of the ore is estimated to be about 0.30 percent $U_3O_8$.

The Chinle formation also contains several possibly-economic uranium deposits about 8 miles northwest of the Candy Kane group. These deposits are associated with carbonaceous material immediately above the Chinle-Moenkopi contact. To date there has been little or no production from those Chinle deposits, but they do have a potential of a few thousand tons of low-grade ore.

Within the boundaries of the Candy Kane group there is some chance of uranium deposits of economic size and grade occurring at two possible horizons, the Cutler and the Chinle formations. The Cutler formation does not outcrop on the subject claims, but it is present at a depth of about 250 feet below the canyon floor. However, there are no known faults in the vicinity so the second type Cutler deposit can not be expected. The small bedded deposits of the first-mentioned Cutler type are not considered worth prospecting for even if there were some particular reason to believe they were present.

The second possibly-mineralized horizon on the Candy Kane group is at the base of the Chinle formation and it was the intention of the applicant to explore only this horizon. The Chinle in this part of the Colorado Plateau is thought by the writer to be generally favorable for uranium deposits. The Moss Back member of the Chinle is at the base of the formation here and is pinching out or changing its lithologic character to the northeast. Such a line of stratigraphic pinchout of a known mineralized horizon is considered especially favorable by some geologists working on Colorado Plateau uranium deposits. However, experience to date indicates that most of the significant deposits in the Triassic formations occur where coarser channel-fill sediments occupy a scour cut into underlying siltstones and mudstones or in thick arkosic sandstone lenses in zones of rapid lithologic change. No such geologic conditions are visible along the walls of the Cane Springs Canyon in the close vicinity of the Candy Kane group. For this reason, the Chinle formation does not appear any more favorable for uranium deposits on the claims than it does over several hundred square miles of the surrounding country.

## PROPOSED EXPLORATION

The applicant proposes to explore the Candy Kane group by core drilling on 500-foot centers from the Chinle slopes on both sides of Cane Springs Canyon and from the Wingate and Kayenta-capped plateau on the south side of the canyon (fig. 2). The holes on the Chinle slopes can be expected to average about 100 feet in depth and those collared in the Wingate or Kayenta would probably be about 600-650 feet. Some road building would be necessary to provide access to drill sites. The applicant's proposal is as follows:

| | |
|---|---|
| Road building, one bulldozer and operator at $13.00 an hour for 15 days - - - - - - - - - - - - - - | $1,560.00 |
| Powder man, 48 hours at $2.50 an hour - - - - - - | 120.00 |
| Compressor, 6 days at $20.00 a day - - - - - - - - | 120.00 |
| Core drilling, 2,000 feet from the Chinle slopes on the sides of the canyon - - - - - - - - - - - - | 5,600.00 |
| Non-core drilling, 2,100 feet to get through Wingate formation on south side of canyon - - - - - - | 4,725.00 |
| Core drilling, 2,900 feet from Wingate on south side of canyon - - - - - - - - - - - - - - - - - - - | 11,475.00 |
| Labor, supervision, consultants, engineer and geologist's fee - - - - - - - - - - - - - - - - | 1,000.00 |
| Poweder, fuses, caps, and gasoline - - - - - - - - | 100.00 |
| Jeep - - - - - - - - - - - - - - - - - - - - - - - - | 300.00 |
| Upkeep of jeep - - - - - - - - - - - - - - - - - - - - | 150.00 |
| Total - - - | $25,150.00 |
| Government's share at 75% participation- - - | $18,862.50 |

## CONCLUSIONS AND RECOMMENDATIONS

The general area of the Candy Kane group is close to the zone of Moss Back pinchout which is considered favorable for uranium deposits. The writer expects that somewhere in the area significant deposits exist. However, no tonnage of ore-grade (0.10% $U_3O_8$) material can be inferred on the subject claims nor is there any evidence of a channel or other favorable geologic conditions on the property. In short, the claims are not considered any more likely to contain significant uranium deposits than hundreds of square miles of Chinle formation in the surrounding country.

Because a drilling program on the Candy Kane group is considered by the writer to have relatively little chance of finding a significant uranium deposit, it is recommended that the application be denied.

DGSA 3470

SANDY BANK GROUP
MONTE CRISTO MINERALS COMPANY
SAN JUAN COUNTY, UTAH

# Engineering Report

By [illegible]
Mining Engineer
Bureau of Mines

11-8-54

DMRA 3470

CANDY KANE GROUP
MONTE CRISTO URANIUM COMPANY
SAN JUAN COUNTY, UTAH

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## CONTENTS


| Engineering Report | Page |
|---|---|
| Introduction | 1 |
| Acknowledgments | 1 |
| Location, topography, and physical features | 2 |
| History and production | 3 |
| Ownership and extent | 3 |
| Description of deposits | 4 |
| Present status | 4 |
| Exploration and development | 4 |
| Mining and milling equipment and other facilities | 4 |
| Proposed exploration | 4 |
| Estimate of costs | 4 |
| Conclusions | 6 |
| Recommendations | 6 |


## ILLUSTRATIONS


| Figure | Follows Page |
|---|---|
| 1. Location map, Candy Kane group, Monte Cristo Uranium Company, San Juan County, Utah | 2 |
| 2. Claim map of Candy Kane group, Monte Cristo Uranium Company, San Juan County, Utah | 4 |

DMEA 3470

CANDY KANE GROUP
MONTE CRISTO URANIUM COMPANY
SAN JUAN COUNTY, UTAH

# ENGINEERING REPORT

By

Carl Baker

## INTRODUCTION

Monte Cristo Uranium Company, Richard Minnaian, president, and Bennett Neilson, vice-president, P. O. Box 596, Moab, Utah, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on the Candy Kane group located in San Juan County, Utah. The application, DMEA 3470, requested aid in building access roads to drill sites and drilling 7,000 feet of core drill holes at an estimated cost of $25,150.00, of which the Government's participation (75 percent for uranium) would be $18,862.50. This proposed exploration was to test the Moenkopi member of the Chinle formation for possible ore bodies.

A joint field investigation was made of the Candy Kane group by a Geological Survey-Bureau of Mines examining team on September 22, 1954.

## ACKNOWLEDGEMENTS

Richard Minnaian, president, and Bennett Neilson, vice-president, of the Monte Cristo Uranium Company, were present during the examination.

Arnold L. Brokaw, Acting District Supervisor, Geological Survey, Grand Junction, Colo., assigned H. S. Johnson, geologist, to make the examination as the Geological Survey member of the team. Mr. Johnson was

accompanied by W. F. Williams, Geologist, of the Geological Survey.

## LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Candy Knob group of claims is in sec. 9, T. 28 S., R. 22 E., Salt Lake meridian, Cane Springs mining district, San Juan County, Utah (fig. 1).

The group of eight claims are about 4,750 feet long in a due north-south direction and 1,050 feet wide. Cane Springs canyon extends east-west through the center of the claims. The bottom of the canyon is about 500 feet wide and slopes up sharply on each side to the almost vertical Wingate formation above. Both to the north and south the claims extend for about 1,200 feet on the almost level tablelands which are some 600 to 800 feet above the canyon floor. The altitude of the claims is from about 4,500 feet to 5,200 feet. Annual rainfall is low and the climate is moderate. Mining operations can be carried on throughout the year. Water suitable for mining purposes flows down the creek in Cane Springs canyon. A small amount of good domestic water is available from a spring about 2 miles above the property.

Native timber is scarce in the vicinity of the claims, but native timber and lumber can be purchased at Moab. A fair secondary road, 4 miles in length connects with U. S. Highway 160 about 17 miles southwest of Moab and 41 miles north of Monticello, Utah. The nearest railhead is the Denver and Rio Grande Western Railroad at Thompsons, Utah, 57 miles to the north. Most supplies and labor are obtainable at Moab and Monticello. At the present time there are no accommodations for miners near the property.

## HISTORY AND PROSPECTS

Several small mines have been worked mostly for vanadium near U. S. Highway 160. These mines are about 5 miles northwest of the Candy Kane group and are in the Morrison formation. After the discovery of uranium ore in the Chinle formation in Big Indian Wash in 1952, considerable activity started staking claims in the Cane Springs canyon area, and Reynolds and Snyder are substantial shippers from a mine located 7 miles northwest of the Candy Kane group.

The Candy Kane group was located about 1 year ago and was recorded by John Veach April 4, 1954. The property recently was acquired by the Monte Cristo Mountain Company. No development work has been done to date and no production has been made from the property.

## OWNERSHIP AND ACCESS

The property consists of eight unpatented claims containing approximately 118 acres. The claims were located by John Veach and are recorded in the records of the County Recorder of San Juan County, Utah. The claims are as follows:

| Claim | Book | Page | Date recorded |
|---|---|---|---|
| Johnny Cake | 37 | 317 | April 4, 1954 |
| Mortgage Lifter | 37 | 316 | April 4, 1954 |
| Candy Kane | 37 | 318 | April 4, 1954 |
| Candy Kane No. 2 | 139 | 241 | July 23, 1954 |
| The Mint | 97 | 122 | |
| The Mint No. 2 | 139 | 241 | July 23, 1954 |
| Johnny Cake No. 2 | 139 | 243 | July 23, 1954 |
| Derby | 139 | 243 | July 23, 1954 |

The applications for leases from the Atomic Energy Commission are recorded in Book 37 of the records of the County Recorder.

The claims are reported to have been sold in July 1954 to the Monte Cristo Uranium Company "on a 5-percent royalty basis."

## DESCRIPTION OF THE DEPOSITS

The only known deposits of uranium are in the vicinity of the Sandy Knob group owner in the Mesabeck (bottom member) of the Chinle formation. The Mesabeck member is exposed on the slope on the south side of Cane Creek where radiation varies from 1 to 3 times background count. There are no known channels in the Mesabeck on the applicant's claims. A strong northeasterly fault crosses Cane Creek about 1 mile to the east.

## PRESENT STATUS

### Exploration and Development

The claims have not been explored or developed.

### Mining and Milling Equipment and Other Facilities

None except that Cane Creek and an Atomic Energy Commission built road crosses the property.

## PROPOSED EXPLORATION

The applicant proposed to explore the claims by 7,000 feet of core drilling in 14 holes shown on the claim map (fig. 2) and estimated the following costs:

### Estimate of Costs

(a) Access roads and drill site preparation

| | |
|---|---|
| Bulldozer, operator, and supplies 15 days at $13.00 an hour | $1,560.00 |
| 2,100 feet of non-core drilling at $2.23 a foot | 4,683.00 |
| 1,200 feet of core drilling at $2.50 a foot | 3,000.00 |
| 1,500 feet of core drilling at $3.25 a foot | 4,875.00 |

| | | |
|---|---|---|
| 1,400 feet of core drilling at $4.00 a foot | $5,600.00 | |
| 800 feet of core drilling at $4.50 a foot | 3,600.00 | |
| Total contracts | | $23,360.00 |
| (b) Labor machine man at $6.50 an hour | 180.00 | |
| Miscellaneous labor | 100.00 | |
| Supervision 6 months at $100.00 | 600.00 | |
| Scientists and engineers | 300.00 | |
| Total labor and supervision | | 1,180.00 |
| (c) Supplies | | |
| Power, fuel, water | 60.00 | |
| Gasoline and oil | 40.00 | |
| Total supplies | | 100.00 |
| (d) Rentals | | |
| Jeep 6 months at $50.00 a month | 300.00 | |
| Compressor 6 days at $20.00 a day | 120.00 | |
| Total rentals | | 420.00 |
| (e) Repairs | | |
| Upkeep of Jeep 6 months at $25.00 a month | 150.00 | |
| Total repairs | | 150.00 |
| (f) Rehabilitation | | None |
| (g) Miscellaneous | | None |
| (h) Contingencies | | None |
| Total | | $25,150.00 |

The following prices for drilling on the Candy Kane group have been quoted by a reliable contractor:

| Non-core | Core |
|---|---|
| 0-300 feet at $2.25 per foot | 0-200 feet at $2.50 per foot |
| 300-600 feet at $2.75 per foot | 200-400 feet at $3.25 per foot |
| 600-700 feet at $3.00 per foot | 400-600 feet at $4.00 per foot |
| | 600-700 feet at $4.50 per foot |

The prices quoted are average but the applicant could eliminate an estimated $2,150.00 from his drilling cost by limiting coring to the section of holes through the Monument member of the Chinle formation. Also, the applicant did not allow for cost of insurance, bookkeeping, and sampling, and the supervision charge is too low. A properly adjusted estimate would total about the same amount, however.

## CONCLUSIONS

The Candy Kane group of claims is in an unproven area where production is very limited. All available information indicates that there are no ore channels on the property and no reason to expect that a uranium ore body of economic importance will be found on the property. The examining team does not believe the property has enough potential merit to justify Government participation in an exploration project.

## RECOMMENDATIONS

It is recommended that the application be denied. This recommendation has been discussed with the U. S. Atomic Energy Commission by the Geological Survey's Grand Junction office and they are in agreement.

CB/pam

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

224 New Customhouse
Denver 2, Colorado

October 28, 1954

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: **Report of Examination, DMEA Docket 3470,** (Uranium)
Monte Cristo Uranium Company, Candy Kane Group,
San Juan County, Utah

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

W H King
W. H. King

E. N. Haushman
for A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

224 New Customhouse
Denver 2, Colorado

October 28, 1954

Memorandum

To: DMEA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination, DMEA Docket 3470 (Uranium)
Monte Cristo Uranium Company (Candy Kane Group)
San Juan County, Utah

Enclosed are 11 copies of the engineering report of examination on the subject application.

The applicant requested $25,150.00 to build access roads and drill 7,000 feet of core drill holes to test the Mossback member of the Chinle formation.

The engineer examiner concludes that a drilling program has relatively little chance of finding a significant amount of uranium and 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
October 14, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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

Subject: DMEA 3470 (Uranium) Monte Cristo Uranium Company (Candy Kane group) San Juan County, Utah

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations," by H. S. Johnson, Geological Survey, and Carl Belser, Bureau of Mines, and of Carl Belser's engineering report on the subject loan application.

Belser concludes that the applicant's claims are unlikely to show ore bodies of economic importance by Government-assisted exploration and recommends denial. This application was discussed with the U. S. Atomic Energy Commission.

I approve the recommendation.

The brochure provided with your memorandum of August 30, 1954, instructing us to make a field examination is returned herewith.

W. M. Traver

W. M. Traver

enclosures

cc 10
DMEA 3470
DMEA Chron.

WMT/pam

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
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October 19, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3470, Monte Cristo Uranium Company (uranium), Candy Kane group, San Juan County, Utah

Enclosed are 10 copies of a geologic report by H. S. Johnson of the U. S. Geological Survey covering the above docket.

Mr. Johnson concludes that significant deposits of uranium may occur in the vicinity of the applicant's property but that there is no geologic evidence to indicate a specific exploration target on the Candy Kane claim group. He therefore recommends denial of the application for exploration assistance.

One copy of the geologic report has been furnished W. M. Traver. He will forward it directly to you.

E. H. Hackman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (10)

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

October 15, 1954

Memorandum

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

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3470, Monte Cristo Uranium Company (Uranium) Candy Kane group, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report by H. S. Johnson, covering the above-referenced DMEA application.

As a result of field examination, Johnson concludes that geologic conditions on the property are not favorable enough to warrant DMEA assistance for exploration. Johnson, therefore, recommends that the application be denied.

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

WPWilliams
For Arnold L. Brokaw

WPW/mlr

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKay, SECRETARY

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 4 - 1954

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3470, Candy Kane Group

Monte Cristo Uranium Company

San Juan County, Utah

Uranium

H. S. Johnson, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

October 7, 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 24 1954

DMEA 3470

# CANDY KANE GROUP
# MONTE CRISTO URANIUM COMPANY
# SAN JUAN COUNTY, UTAH

## Summary, Conclusions, and Recommendations

By H. S. Johnson
Geologist
Geological Survey

Carl Belser
Mining Engineer
Bureau of Mines

DMEA 3470

# CANDY KANE GROUP
# MONTE CRISTO URANIUM COMPANY
# SAN JUAN COUNTY, UTAH

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By H. S. Johnson and Carl Belser

Monte Cristo Uranium Company, a partnership, Richard Minasian and Demont Neilson, P. O. Box 596, Moab, Utah, has applied for a Defense Minerals Exploration Administration loan of $25,150.00 to explore the Candy Kane group of claims by 7,000 feet of core drilling.

A field investigation was made on September 22, 1954, by an examining team of the Geological Survey and Bureau of Mines. Richard Minasian, president, and Demont Neilson, vice-president of Monte Cristo Uranium Company, accompanied the examining team and the proposed exploration was discussed with them.

The exposed rocks on the Candy Kane group of claims are essentially flat dipping shales and sandstones. The Moenkopi formation of chocolate brown shale and grey stone is exposed near the bottom of Cane Springs canyon. The Chinle formation of the Upper Triassic is directly above the Moenkopi and consists of buff and red sandstones, shales, and red and green mudstones. The Chinle is capped by about 300 feet of massive, cross-bedded buff and dull red sandstones of the Wingate formation of the Lower Jurassic, which, in turn, is covered by some grey and white and red sandstones of the Kayenta formation.

Uranium occurs in the Mossback member of the Chinle formation which is near the bottom of the Chinle. In the vicinity of the Candy Kane group the Mossback contains considerable green mudstone with some fossilized wood. Counter readings of two to three times background count can be obtained, but no ore or channels are visible. In the vicinity of

the Candy Kane group no faulting was noted, but a strong northeasterly striking fault crosses the Cane Creek about 1 mile above the claims.

No ore has been produced from the property. The nearest substantial producer at this time is Robinet and Snyder, some 7 miles farther down Cane Springs canyon. No development work has been done on the property. There are no known channels in the Mossback member and no data that would indicate that it will be productive on the Candy Kane group.

The examining team does not believe that the property has enough merit to justify Government participation in an exploration project and recommends denial of the application. This decision has been discussed with the U. S. Atomic Energy Commission by the Geological Survey's Grand Junction office.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

DMEA 3470, Monte Cristo Uranium Company,
Candy Kane group, San Juan County, Utah

Uranium

Geologic report

by

H. S. Johnson
U. S. Geological Survey

DMEA 3470

## INTRODUCTION AND SUMMARY

Monte Cristo Uranium Company of Moab, Utah, applied on August 11, 1954, for DMEA assistance to explore for uranium on the Candy Kane group of claims including the Candy Kane, Candy Kane No. 2, Mortgage Lifter, Johnny Cake, Johnny Cake No. 2, Debby, Mint, and Mint No. 2 claims in secs. 9 and 16, T. 28 S., R. 22 E., S.L.M., San Juan County, Utah (fig. 1). These claims are in Cane Creek Canyon and can be reached by 3 miles of fairly good dirt road leading down Cane Creek from Cane Springs on Highway 160 about 13 miles south of Moab, Utah. The claims are recorded in the country courthouse at Monticello, Utah as follows:

| Claim | Book | Page |
|---|---|---|
| Candy Kane | 37 | 518 |
| Candy Kane No. 2 | 139 | 241 |
| Mortgage Lifter | 37 | 516 |
| Johnny Cake | 37 | 517 |
| Johnny Cake No. 2 | 139 | 243 |
| Debby | 139 | 243 |
| Mint | 97 | 122 |
| Mint No. 2 | 139 | 241 |

The applicants stated verbally that these claims have since been relocated or amended to take advantage of Public Law 585 - 83rd Congress (Multiple Land Use Bill).

On September 22, 1954, the Candy Kane group of claims was examined by W. P. Williams and H. S. Johnson of the U. S. Geological Survey and Carl Belser of the U. S. Bureau of Mines. Richard Minasian and DeMont Neilson of Monte Cristo Uranium Co., accompanied the DMEA field team representatives during the examination.

Although the general area of this part of the Colorado Plateau is thought to be favorable for uranium deposits, the geology of the claims is not considered sufficiently favorable to justify a drilling program except as a gamble of the "shot in the dark" variety. It is recommended that the application be denied.

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

## GEOLOGY

The rocks exposed in the vicinity of the Candy Kane group consist of nearly flat-lying shales, siltstones, and sandstones of the Triassic Moenkopi, Chinle, and Wingate formations and the Jurassic (?) Kayenta formation. The Permian Cutler formation outcrops about six miles down Cane Springs Canyon to the northwest and is probably 200-250 feet below the canyon floor within the boundaries of the Candy Kane group.

The Cutler formation, where exposed 6 miles to the northwest of the subject claims, is about 400 feet thick and is predominantly purplish-red arkosic sandstone with thin interbedded red shales and mudstones.

Overlying the Cutler formation, sometimes with slight angular unconformity, is the Triassic Moenkopi formation. The Moenkopi is about 200-250 feet thick and is composed of evenly bedded red-brown shale and siltstone and thin ledges of flaggy fine-grained sandstone.

The Chinle formation is about 200-250 feet thick in the vicinity of the Candy Kane group and may be roughly divided into three fairly distinct units. The lower unit forms a thick ledge 25-50 feet thick, made up largely of gray-green limy claystone and siltstone, coarse conglomeratic sandstone, and limy silt-pebble conglomerate. Wood fragments and small logs, in part carbonized and in part replaced with calcite (?), limonite, gypsum, and jarosite, are fairly abundant in the lower few feet. This ledgey unit is probably equivalent to the well defined Moss Back member that is present to the west. The Moss Back is pinching out or changing character to the northeast along a northwest-southeast trending line passing approximately through the Candy Kane group. Overlying this lower Chinle unit is about 100 feet of gray-green limy siltstone and fine-grained sandstone. Above this is about 100 feet or so of red shale, siltstone, and fine-grained sandstone.

The Wingate sandstone forms a 300-foot cliff above the Chinle formation in the walls of Cane Springs Canyon. It is fine-grained buff to light brown sandstone that is largely eolian in origin. Above this and capping the partially dissected plateau is the 150-200 foot thick Kayenta formation composed mainly of red fluviatile sandstones and shales.

There is no faulting in the immediate vicinity of the Candy Kane group, but about a mile to the east a northeast trending normal fault has 200-300 feet displacement where it crosses Cane Creek.

## ORE DEPOSITS

No economic uranium deposits are known in the immediate vicinity of the Candy Kane group. Weak uranium mineralization, averaging less than 0.05 percent $U_3O_8$ but approaching ore grade (0.10% $U_3O_8$) in a few places, is common at the Chinle-Moenkopi contact. Most of the mineralization is associated with fragments of carbonized wood and is very thin and discontinuous in size and irregular in grade. A few small carbonized logs and carbon seams in the vicinity are estimated to assay up to 0.20 to .30 percent $U_3O_8$. There are no workings on the Candy Kane group and no systematic prospecting has been undertaken other than rim walking of the Chinle-Moenkopi contact with a Geiger counter. On the Rainshower claim, joining the Mint claims on the east, a 20-foot adit has been driven at the base of the Chinle-Moenkopi contact, but no ore was found.

About 7 or 8 miles to the northwest down Cane Springs Canyon, several small- to medium-sized deposits have been found in the Cutler and Chinle formations. The Cutler deposits are of two types: (1) bedded copper-uranium deposits in white arkosic sandstone lenses and (2) uranium-vanadium deposits in gouge and shattered sandstone along small, nearly vertical normal faults. The first of these two types usually does not contain more than a few hundred tons of mineralized rock. To date very little production has come from these. The second type of Cutler deposit is more promising and is supporting small scale production from three deposits along Cane Creek. This type Cutler deposit may have a potential of 5,000-25,000 tons of ore, or possibly more, in the vicinity of the three active mines. The average grade of the ore is estimated to be about 0.30 percent $U_3O_8$.

The Chinle formation also contains several possibly-economic uranium deposits about 8 miles northwest of the Candy Kane group. These deposits are associated with carbonaceous material immediately above the Chinle-Moenkopi contact. To date there has been little or no production from those Chinle deposits, but they do have a potential of a few thousand tons of low-grade ore.

Within the boundaries of the Candy Kane group there is some chance of uranium deposits of economic size and grade occurring at two possible horizons, the Cutler and the Chinle formations. The Cutler formation does not outcrop on the subject claims, but it is present at a depth of about 250 feet below the canyon floor. However, there are no known faults in the vicinity so the second type Cutler deposit can not be expected. The small bedded deposits of the first-mentioned Cutler type are not considered worth prospecting for even if there were some particular reason to believe they were present.

The second possibly-mineralized horizon on the Candy Kane group is at the base of the Chinle formation and it was the intention of the applicant to explore only this horizon. The Chinle in this part of the Colorado Plateau is thought by the writer to be generally favorable for uranium deposits. The Moss Back member of the Chinle is at the base of the formation here and is pinching out or changing its lithologic character to the northeast. Such a line of stratigraphic pinchout of a known mineralized horizon is considered especially favorable by some geologists working on Colorado Plateau uranium deposits. However, experience to date indicates that most of the significant deposits in the Triassic formations occur where coarser channel-fill sediments occupy a scour cut into underlying siltstones and mudstones or in thick arkosic sandstone lenses in zones of rapid lithologic change. No such geologic conditions are visible along the walls of the Cane Springs Canyon in the close vicinity of the Candy Kane group. For this reason, the Chinle formation does not appear any more favorable for uranium deposits on the claims than it does over several hundred square miles of the surrounding country.

## PROPOSED EXPLORATION

The applicant proposes to explore the Candy Kane group by core drilling on 500-foot centers from the Chinle slopes on both sides of Cane Springs Canyon and from the Wingate and Kayenta-capped plateau on the south side of the canyon (fig. 2). The holes on the Chinle slopes can be expected to average about 100 feet in depth and those collared in the Wingate or Kayenta would probably be about 600-650 feet. Some road building would be necessary to provide access to drill sites. The applicant's proposal is as follows:

| | |
|---|---|
| Road building, one bulldozer and operator at $13.00 an hour for 15 days - - - - - - - - - - - - - - | $1,560.00 |
| Powder man, 48 hours at $2.50 an hour - - - - - - | 120.00 |
| Compressor, 6 days at $20.00 a day - - - - - - - - | 120.00 |
| Core drilling, 2,000 feet from the Chinle slopes on the sides of the canyon - - - - - - - - - - - - | 5,600.00 |
| Non-core drilling, 2,100 feet to get through Wingate formation on south side of canyon - - - - - - | 4,725.00 |
| Core drilling, 2,900 feet from Wingate on south side of canyon - - - - - - - - - - - - - - - - - - - | 11,475.00 |
| Labor, supervision, consultants, engineer and geologist's fee - - - - - - - - - - - - - - - - | 1,000.00 |
| Poweder, fuses, caps, and gasoline - - - - - - - - | 100.00 |
| Jeep - - - - - - - - - - - - - - - - - - - - - - - - | 300.00 |
| Upkeep of jeep - - - - - - - - - - - - - - - - - - - - | 150.00 |
| Total - - - | $25,150.00 |
| Government's share at 75% participation- - - | $18,862.50 |

## CONCLUSIONS AND RECOMMENDATIONS

The general area of the Candy Kane group is close to the zone of Moss Back pinchout which is considered favorable for uranium deposits. The writer expects that somewhere in the area significant deposits exist. However, no tonnage of ore-grade (0.10% $U_3O_8$) material can be inferred on the subject claims nor is there any evidence of a channel or other favorable geologic conditions on the property. In short, the claims are not considered any more likely to contain significant uranium deposits than hundreds of square miles of Chinle formation in the surrounding country.

Because a drilling program on the Candy Kane group is considered by the writer to have relatively little chance of finding a significant uranium deposit, it is recommended that the application be denied.

Department of the Interior
Defense Minerals Administration
RECEIVED

DMEA 3470

# CANDY KANE GROUP
# MONTE CRISTO URANIUM COMPANY
# SAN JUAN COUNTY, UTAH

Engineering Report

By Carl Belser
Mining Engineer
Bureau of Mines

DMEA 3470

# CANDY KANE GROUP
# MONTE CRISTO URANIUM COMPANY
# SAN JUAN COUNTY, UTAH

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## CONTENTS


| Engineering Report | Page |
|---|---|
| Introduction | 1 |
| Acknowledgements | 1 |
| Location, topography, and physical features | 2 |
| History and production | 3 |
| Ownership and extent | 3 |
| Description of deposits | 4 |
| Present status | 4 |
| Exploration and development | 4 |
| Mining and milling equipment and other facilities | 4 |
| Proposed exploration | 4 |
| Estimate of costs | 4 |
| Conclusions | 6 |
| Recommendations | 6 |


## ILLUSTRATIONS


| Figure | Follows Page |
|---|---|
| 1. Location map, Candy Kane group, Monte Cristo Uranium Company, San Juan County, Utah | 2 |
| 2. Claim map of Candy Kane group, Monte Cristo Uranium Company, San Juan County, Utah | 4 |

DMEA 3470

# CANDY KANE GROUP
# MONTE CRISTO URANIUM COMPANY
# SAN JUAN COUNTY, UTAH

## ENGINEERING REPORT

By

Carl Belser

## INTRODUCTION

Monte Cristo Uranium Company, Richard Minasian, president, and Demont Neilson, vice-president, P. O. Box 596, Moab, Utah, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on the Candy Kane group located in San Juan County, Utah. The application, DMEA 3470, requested aid in building access roads to drill sites and drilling 7,000 feet of core drill holes at an estimated cost of $25,150.00, of which the Government's participation (75 percent for uranium) would be $18,862.50. This proposed exploration was to test the Mossback member of the Chinle formation for possible ore bodies.

A joint field investigation was made of the Candy Kane group by a Geological Survey-Bureau of Mines examining team on September 22, 1954.

## ACKNOWLEDGEMENTS

Richard Minasian, president, and Demont Neilson, vice-president, of the Monte Cristo Uranium Company, were present during the examination.

Arnold L. Brokaw, Acting District Supervisor, Geological Survey, Grand Junction, Colo., assigned H. S. Johnson, geologist, to make the examination as the Geological Survey member of the team. Mr. Johnson was

accompanied by W. P. Williams, Geologist, of the Geological Survey.

## LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Candy Kane group of claims is in sec. 9, T. 28 S., R. 22 E., Salt Lake meridian, Cane Springs mining district, San Juan County, Utah (fig. 1).

The group of eight claims are about 4,750 feet long in a due north-south direction and 1,050 feet wide. Cane Springs canyon extends east-west through the center of the claims. The bottom of the canyon is about 800 feet wide and slopes up sharply on each side to the almost vertical Wingate formation above. Both to the north and south the claims extend for about 1,200 feet on the almost level tablelands which are some 600 to 800 feet above the canyon floor. The altitude of the claims is from about 4,500 feet to 5,200 feet. Annual rainfall is low and the climate is semiarid. Mining operations can be carried on throughout the year. Water suitable for mining purposes flows down the creek in Cane Springs canyon. A small amount of good domestic water is available from a spring about 2 miles above the property.

Native timber is scarce in the vicinity of the claims, but native timber and lumber can be purchased at Moab. A fair secondary road, 4 miles in length connects with U. S. Highway 160 about 17 miles southwest of Moab and 41 miles north of Monticello, Utah. The nearest railhead is the Denver and Rio Grande Western Railroad at Thompsons, Utah, 57 miles to the north. Most supplies and labor are obtainable at Moab and Monticello. At the present time there are no accommodations for miners near the property.

## HISTORY AND PRODUCTION

Several small mines have been worked mostly for vanadium near U. S. Highway 160. These mines are about 5 miles northeast of the Candy Kane group and are in the Morrison formation. After the discovery of uranium ore in the Chinle formation in Big Indian Wash in 1952, considerable activity started staking claims in the Cane Springs canyon area, and Robinet and Snyder are substantial shippers from a mine located 7 miles northwest of the Candy Kane group.

The Candy Kane group was located about 1 year ago and was recorded by John Weech April 4, 1954. The property recently was acquired by the Monte Cristo Uranium Company. No development work has been done to date and no production has been made from the property.

## OWNERSHIP AND EXTENT

The property consists of eight unpatented claims containing approximately 118 acres. The claims were located by John Weech and are recorded in the records of the County Recorder of San Juan County, Utah. The claims are as follows:

| Claim | Book | Page | Date recorded |
|---|---|---|---|
| Johnny Cake | 37 | 517 | April 4, 1954 |
| Mortgage Lifter | 37 | 516 | April 4, 1954 |
| Candy Kane | 37 | 518 | April 4, 1954 |
| Candy Kane No. 2 | 139 | 241 | July 23, 1954 |
| The Mint | 97 | 122 | |
| The Mint No. 2 | 139 | 241 | July 23, 1954 |
| Johnny Cake No. 2 | 139 | 243 | July 23, 1954 |
| Debby | 139 | 243 | July 23, 1954 |

The applications for leases from the Atomic Energy Commission are recorded in Book 37 of the records of the County Recorder.

The claims are reported to have been sold in July 1954 to the Monte Cristo Uranium Company "on a 5-percent royalty basis."

## DESCRIPTION OF THE DEPOSITS

The only known deposits of uranium ore in the vicinity of the Candy Kane group occur in the Mossback (bottom member) of the Chinle formation. The Mossback member is exposed on the slope on the south side of Cane Creek where radiation varies from 1 to 3 times background count. There are no known channels in the Mossback on the applicant's claims. A strong northeasterly fault crosses Cane Creek about 1 mile to the east.

## PRESENT STATUS

### Exploration and Development

The claims have not been explored or developed.

### Mining and Milling Equipment and Other Facilities

None except that Cane Creek and an Atomic Energy Commission built road crosses the property.

## PROPOSED EXPLORATION

The applicant proposed to explore the claims by 7,000 feet of core drilling in 14 holes shown on the claim map (fig. 2) and estimated the following costs:

### Estimate of Costs

(a) Access roads and drill site preparation

| | |
|---|---|
| Bulldozer, operator, and supplies 15 days at $13.00 an hour | $1,560.00 |
| 2,100 feet of non-core drilling at $2.25 a foot | 4,725.00 |
| 1,200 feet of core drilling at $2.50 a foot | 3,000.00 |
| 1,500 feet of core drilling at $3.25 a foot | 4,875.00 |

| | | | |
|---|---|---|---|
| | 1,400 feet of core drilling at $4.00 a foot | $5,600.00 | |
| | 800 feet of core drilling at $4.50 a foot | 3,600.00 | |
| | Total contracts | | $23,360.00 |
| (b) | Labor machine man at $2.50 an hour | 120.00 | |
| | Miscellaneous labor | 100.00 | |
| | Supervision 6 months at $100.00 | 600.00 | |
| | Consultants and engineers | 300.00 | |
| | Total labor and supervision | | 1,120.00 |
| (c) | Supplies | | |
| | Power, fuse, caps | 60.00 | |
| | Gasoline and oil | 40.00 | |
| | Total supplies | | 100.00 |
| (d) | Rentals | | |
| | Jeep 6 months at $50.00 a month | 300.00 | |
| | Compressor 6 days at $20.00 a day | 120.00 | |
| | Total rentals | | 420.00 |
| (e) | Repairs | | |
| | Upkeep of Jeep 6 months at $25.00 a month | 150.00 | |
| | Total repairs | | 150.00 |
| (f) | Rehabilitation | | None |
| (g) | Miscellaneous | | None |
| (h) | Contingencies | | None |
| | Total | | $25,150.00 |

The following prices for drilling on the Candy Kane group have been quoted by a reliable contractor:

| Non-core | Core |
|---|---|
| 0-300 feet at $2.25 per foot | 0-200 feet at $2.50 per foot |
| 300-600 feet at $2.75 per foot | 200-400 feet at $3.25 per foot |
| 600-700 feet at $3.00 per foot | 400-600 feet at $4.00 per foot |
| | 600-700 feet at $4.50 per foot |

The prices quoted are average but the applicant could eliminate an estimated $2,150.00 from his drilling cost by limiting coring to the section of holes through the Mossback member of the Chinle formation. Also, the applicant did not allow for cost of insurance, bookkeeping, and sampling, and the supervision charge is too low. A properly adjusted estimate would total about the same amount, however.

## CONCLUSIONS

The Candy Kane group of claims is in an unproven area where production is very limited. All available information indicates that there are no ore channels on the property and no reason to expect that a uranium ore body of economic importance will be found on the property. The examining team does not believe the property has enough potential merit to justify Government participation in an exploration project.

## RECOMMENDATIONS

It is recommended that the application be denied. This recommendation has been discussed with the U. S. Atomic Energy Commission by the Geological Survey's Grand Junction office and they are in agreement.

CB/pam

224 New Customhouse
Denver 2, Colorado

September 3, 1954

DMEA-3470

Memorandum

To: W. M. Traver, Jr.
Arnold Brokaw

From: Executive Officer, DMRA Field Team, Region IV

Subject: Application of Monte Cristo Uranium Company (Uranium), Candy Kane Group, San Juan County, Utah.

Enclosed is a copy of a letter from the subject applicant furnishing additional information as requested by our letter dated August 26, 1954, a copy of which is also included.

W. H. King

W. H. King

Enclosures

cc: Docket (Monte Cristo Uranium Co.)
Secretary to Operating Comm. w/copy letters
Chron.

Paragraph 1, sub-paragraph (d) amended to read:

RICHARD MINASIAN, P. O. BOX 596, MOAB, UTAH.

DEMONT NEILSON, P. O. BOX 596, MOAB, UTAH.

Paragraph 3, sub-paragraph (f) recording information on five (5) additional claims, to wit:

| CLAIM NAME and NUMBER | RECORD DATA | |
|---|---|---|
| | Book | Page |
| THE MINT | 97 | 122 |
| CANDY CANE # 2 | 139 | 241 |
| THE MINT #2 | 139 | 241 |
| JOHNNY CAKE # 2 | 139 | 243 |
| DEBBY | 139 | 243 |

All as recorded in the office of the County Recorder, San Juan County, Monticello, Utah.

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

224 New Customhouse
Denver 2, Colorado

August 27, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: Code 200

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docketing for Exploration Assistance

Enclosed herewith in duplicate is DMEA Form 3a and MF-103 with supporting data pertaining to the following application for Government assistance in exploration work:

Monte Cristo Uranium Co. (Uranium)
San Juan County
Utah

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
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Enclosures

MF-193
(Revised April 1952)

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

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

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

*Not to be filled in by applicant*

Docket No. 3470
Metal or Mineral Uranium
Date Received
Estimated Cost $25,150
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:

Monte Cristo Uranium Co., P.O. Box 596, Moab, Utah.
Partnership formed in the State of Utah.
Demont Neilson, P.O. Box 596, Moab, 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 property is composed of four full claims and four partial claims located in Sec. 9, T28S, R24E SLM. All the claims are contiguous.

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

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

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

(*e*) If you own the land, describe any liens or encumbrances on it former owner to receive a 5% royalty after development and haulage allowance.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Johnny Cake, Book 37 page 517, Mortgage Lifter, Book 37, page 516, Candy Kane, Book 37, page 513, San Juan Co., Utah.

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.

16—66551-1

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)? 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 accompanying paper.

## CERTIFICATION

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

Dated August 11, 1954

Monte Cristo Uranium Co.
(Applicant)

By Richard Minasian

Richard Minasian

**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

3. (f) contd.
Candy Kane No. 2, Mint No. 1 and 2, Debby, and Johnny Cake No. 2, have been received at the County recorder's office in Monticello, Utah, but have not been recorded yet.

4. (a) There has been no exploration or mining on these claims.
(b) There has been no production of ore on this group of claims.
(c) The claims are in the Chinle and Shinarump formations, with some Moenkopi showing below the Shinarump formation. Above the Chinle there is the Wingate sandstone formation with a thickness of around 300 feet.
(d) The claims can be reached by driving south from Moab, to the Hole in Rock cafe, thence West 4 miles along a road built by the A.E.C. Monticello is 37 miles further South from the turn-off point. A jeep can be driven to the rim of the Wingate formation from the North as well as the South of the canyon.
(e) Manpower, materials, and supplies are available at Moab and Monticello. There is a spring in the canyon with sufficient water for drinking as well as for core drilling.

5. (a) We wish to explore for uranium.
(b) It is our plan to build a road on top of the Shinarump formation on either side of the canyon and diamond drill the easy formation. Then we are going to bulldoze a road on top of the mesa. The road work would consist of bulldozing quite level ground to the edge of the Wingate formation. This is to enable the drilling rigs to be brought there. We will then rotary drill through the Wingate formation, and core drill from that point through the Chinle and Shinarump formations.
(c) The work will start within three weeks and be completed within six months from the date of an exploration project contract.
(d) The operator has had no experience of an exploratory nature, but the people doing the work--Minerals Engineering will do the drilling work--have had mining experience, and part of the work will be supervised by an E.E.C. geologist, and part by an engineer we will retain.

## [illegible]

6.

(A) [illegible] to do the drilling work out on contract to the Mineral Prospecting Co. Enclosed is a copy of their price for drilling.

Core holes will be made on [illegible] and the cost of both drilling and core holes will be listed below with the other costs.

For 1 holes, 1b, [illegible] will cost and operates at [illegible] per hour.

Costs are for Planning, 6, [illegible] [illegible] per hour [illegible]
[illegible] for 6 days at [illegible] a day [illegible]
1000 feet of core drilling on the North and South side of [illegible] below the [illegible] formation, first 1000 feet at [illegible] per foot [illegible]

Less 600 feet of core drilling at [illegible] a foot [illegible]

3000 feet of drilling on both sides of canyon on top of [illegible] at [illegible] per foot for the first 1000 feet of non-core drilling

Less 700 feet of core drilling at [illegible] per foot [illegible]
Less 1600 feet of core drilling at [illegible] per foot [illegible]
Less 300 feet of core drilling at [illegible] per foot [illegible]

(D) Labor, [illegible] Engineers
Engineer [illegible] [illegible] per foot [illegible]
(6) [illegible], Food and [illegible] [illegible] [illegible]
(7) [illegible] 100.00
(8) [illegible] 200.00
(9) [illegible] 300.00
(10) [illegible] 250.00
(11) [illegible]

[illegible]

The Company has [illegible] and [illegible] that can be readily converted into a [illegible] type of drill position of the entire unit will be [illegible] for the exploration project.

# R E P O R T

ON

EXAMINATION OF THE MONTE CRISTO URANIUM CO. CLAIMS

IN SAN JUAN COUNTY, UTAH

BY

ALAN A. SHARP

This property was examined July 26 - 29, 1954. It consists of two groups of claims in Township 28 South, Range 22 East, Salt Lake Meridian, San Juan County, Utah. These claims lie along Cane Creek Canyon, in Sections 9 and 10, with a very small part extending into Sections 3 and 4, and were staked about a year ago by John Weech of Moab, Utah who sold them this month on a 5% royalty basis to the Monte Cristo Uranium Co.

The east group has 9 full claims and 10 fractions, all of which are contiguous. The west group has 4 full claims and 4 fractions, all contiguous, which are 830' from the nearest side line of the other group. The claims were surveyed April 4, 1954 by Marx Weech, Chemical Engineer.

The eastern side line of the east group is 3 miles downstream by jeep road from the Hole-in-the-Rock Cafe on U. S. Highway 160, which in turn is 17 miles south of Moab. There is a moderate flow of water in Cane Creek the year 'round, through the area traversed by the claims. Cane Creek runs approximately to the west through the claims, then turns northwest to empty into the Colorado River, about 10 miles downstream from the claims. Muleshoe Wash empties into Cane Creek about 1/2 mile east of the claims, and Hatch Creek empties into Cane Creek about 2 miles west. About 2 miles upstream is a fresh cool water seep which provides good drinking water in small quantities.

All these claims are fully owned by the Monte Cristo Uranium Company. Officers of the Company are Richard Minasian, President and Demont Neilson, Vice President, both of Moab, Utah.

Cane Creek cuts through a nearly vertical-walled canyon with a depth varying from 0 to almost 1,000 feet. In the area of the Monte Cristo claims, the canyon exposes the Triassic Chinle and Moenkopi formations and the Jurassic Wingate sandstone, Kayenta formation, and Navajo sandstone remnants on top. The first exposure of the Moenkopi downstream is about 2900 feet west of the easterly edge of the claims and is well exposed in the rimrock of the west group of claims.

The Moenkopi consists of red-brown shale and gray sandstone which gives it the appearance of a chocolate layer cake. This chocolate layer cake was traced downstream for several miles.

Immediately above this is the Mossback sandstone member of the Chinle formation or what some geologists designate as the Chinle "D".

It is in the Mossback sandstone that uranium-bearing material is found in a clayey seam, accompanied by abundant carbon trash. Considerable silicified wood is found in and around the seam, but none is radioactive. John Weech and Richard Minasian have taken grab samples from the rimrock on several claims in both groups which assayed from .05 to .35 % $U_3O_8$ and about double that amount of $V_2O_5$.

A radiometric reconnaissance of the south rimrock on the Candy Kane claim in the west group showed gamma-ray radiation varying from 0 to 3 times background in an area about 20 feet long. Some of the rim exposed was a fresh face that had been slabbed off by blasting and prying loose. Between the east and west groups is the Rainshower group, not owned by the Monte Cristo Uranium Co. A tunnel, 20 feet long, was driven S. 40° W. following a similar showing on the rimrock about 480' east of the western Monte Cristo group. About 70' east, still on Rainshower No. 3 claim, is a high grade seam, 2 inches to 5 inches thick by 36 inches long and probably about the same extent laterally, which the author determined to have a radiometric assay of approximately 0.40 % $U_3O_8$. None of the uranium minerals has been identified under a hand lens.

Near the center of the Johnny Cake claim in the west group, radioactivity of 2 to 3 times background was detected on the north rim in a 1-inch green clayey seam, lying on top of mudstone. Above this is a sandstone and another green seam and more sandstone in which non-radioactive silicified wood was observed. No chocolate layer cake formation is visible along this section, but it does appear a short distance to the west.

A drill hole in Good Hope No. 1 claim on the east edge of the east group was tested with a deep hole probe for 135 feet, but showed no radioactivity. However, the hole is almost full of water and the collar appears to be either in the Wingate or

Kayenta sandstone which may be at least 400 feet above the Mossback sandstone horizon.

Through this claim passes an extensive fault which the United States Geological Survey has traced on the surface for more than 3 miles and has been thought to project through to Hatch Canyon. It strikes northeast. Another major fault has been traced for a similar length in Trough Springs Canyon, about 5 miles northwest. This fault also strikes northeast and traverses Cane Creek Canyon at right angles. The upthrow side is on the edge of the long Cane Creek Anticline on a southeast axis, which lies along the northeast side of the canyon for the last 4 miles. Other major faults are found within a few miles of the claims.

To the east of the first major fault described, the Kayenta formation dips $7^{\circ}$ northeast on the south side of Cane Creek. The Navajo sandstone dips $3\frac{1}{2}^{\circ}$ northeast, west of the fault on the north side of the canyon; this is in the area of the west group of claims.

The Atomic Energy Commission has established a camp in Cane Creek Canyon about 6 miles from the west group of claims. It was responsible for the construction of the Cane Springs Canyon access road which now reaches almost to the Colorado River. The Atomic Energy Commission is now engaged in extensive geological and exploratory investigations in this area.

The field geologist for the Atomic Energy Commission in this district informed me that the Mossback formation is a

favorable zone in which to find uranium deposits along Cane Creek Canyon. He further stated that most of the deposits would more likely be much larger in size than those found in the Morrison Salt Wash sandstone.

Numerous private companies are also actively exploring Cane Creek Canyon. Ore bodies have been reported as found by Climax Uranium Company, near the Colorado River; the Old Texas Mining Company, near the Atomic Energy Commission's Camp; the Cimota Exploration Company nearby; and possibly by other companies. Mining has also been indicated in Cane Springs Canyon about 3 miles northeast of the east group, along another major fault in the canyon.

CONCLUSIONS:

There are indications favorable to the location of uranium ore bodies in the Monte Cristo claims. The mild radioactivity along the rim, the occurrences of the Mossback sandstone member of the Chinle formation, numerous major faults in the area, the activity of the Atomic Energy Commission, and the finds attributed to private companies all point to the need for further prospecting and exploration of the claims. This of course can best be carried on by a drilling program.

Respectfully submitted,

Alan A. S[illegible]p
B. S., E. [illegible]
Mining Engineer

July 29, 1954
Moab, Utah

July 29, 1954

Prices quoted to MONTE CRISTO URANIUM CO., for drilling about 4 Miles west of Hole In The Rock.

| NON - CORE | | CORE | |
|---|---|---|---|
| 0 - 300 ft | @ $ 2.25 per ft. | 0 - 200 ft | @ $ 2.50 per ft. |
| 300 - 600 | 2.75 | 200 - 400 | 3.25 |
| 600 - 700 | 3.00 | 400 - 600 | 4.00 |
| | | 600 - 700 | 4.50 |

MINERALS ENGINEERING CO.

SHERMAN ASPLUND (Field Supt)

SIGNED S. Asplund

EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

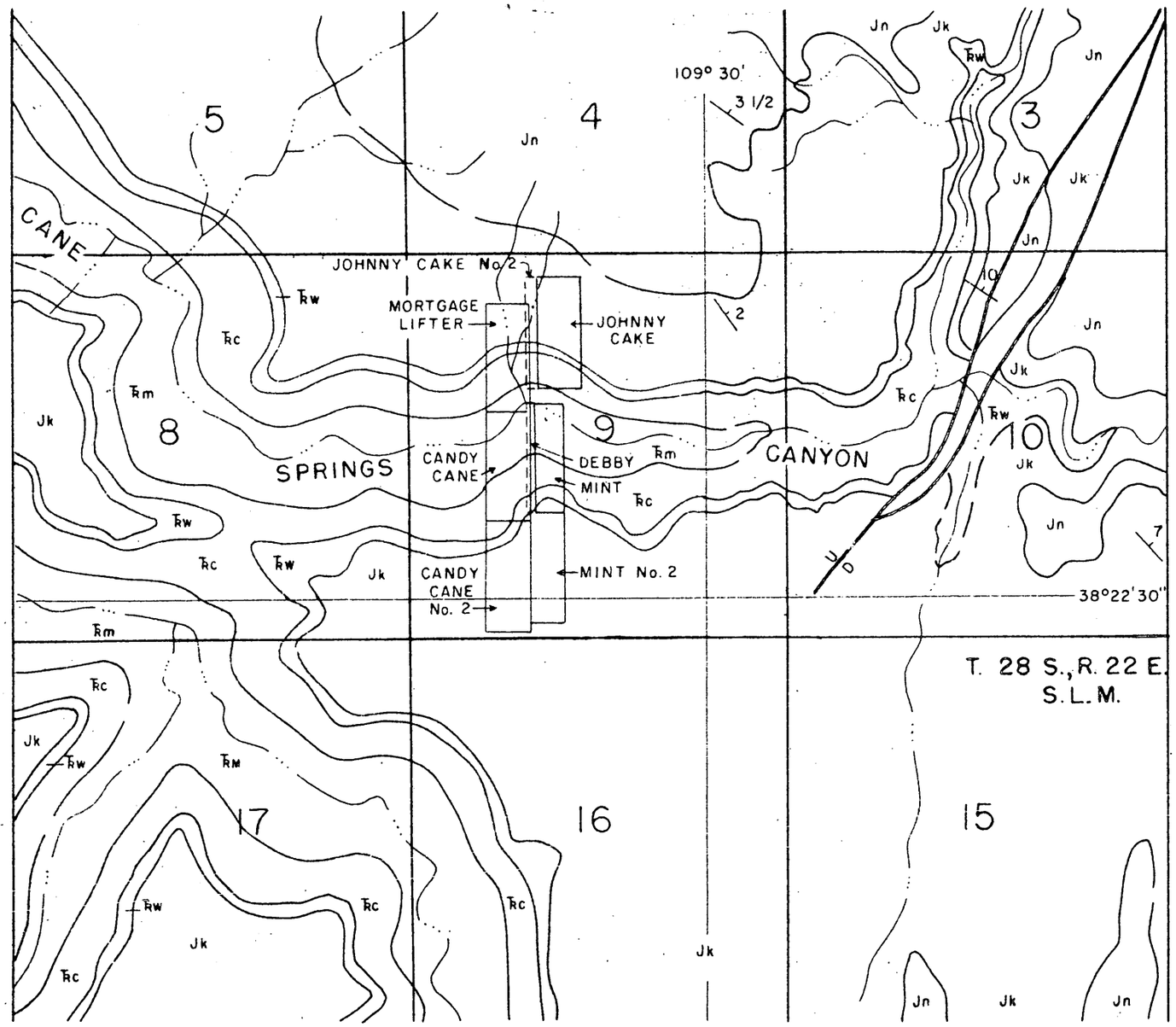
U. S. GEOLOGICAL SURVEY
SOUTH 157 HOWARD ST.
SPOKANE 4, WASHINGTON

SPOKANE WASH.
AG 13 7 PM
1954

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

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3470




N

EXPLANATION

Jn — NAVAJO SS

Jk — KAYENTA FM

Ŧw — WINGATE SS

Ŧc — CHINLE FM

Ŧm — MOENKOPI FM

FORMATION CONTACT

U D — FAULT (SHOWING RELATIVE MOVEMENT)

2 — STRIKE AND DIP OF BEDS

15 — LAND SECTION NUMBER

BASE FROM PHOTOGEOLOGIC QUADRANGLE MAPS, CARLISLE 1, AND 8; MT. PEALE 4, AND 5.

0 2000 4000 6000 FEET

CLAIMS TAKEN FROM MAP SUBMITTED BY MONTE CRISTO URANIUM COMPANY

Figure 2. GEOLOGIC MAP SHOWING CANDY CANE GROUP OF CLAIMS, SAN JUAN COUNTY, UTAH

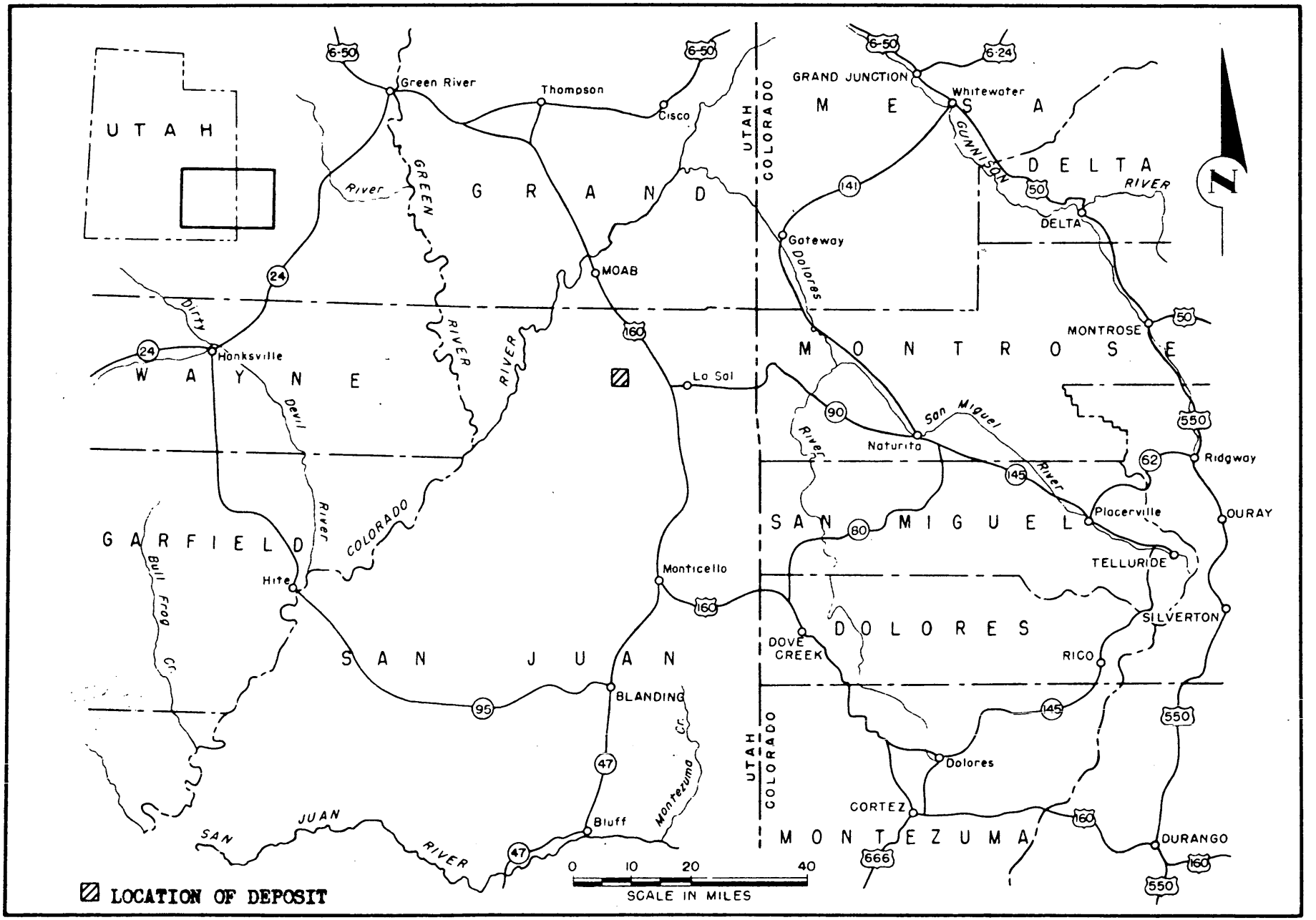



FIGURE 1 - LOCATION MAP, CANDY KANE GROUP, MONTE CRISTO URANIUM COMPANY, SAN JUAN COUNTY, UTAH.
DMEA 3470

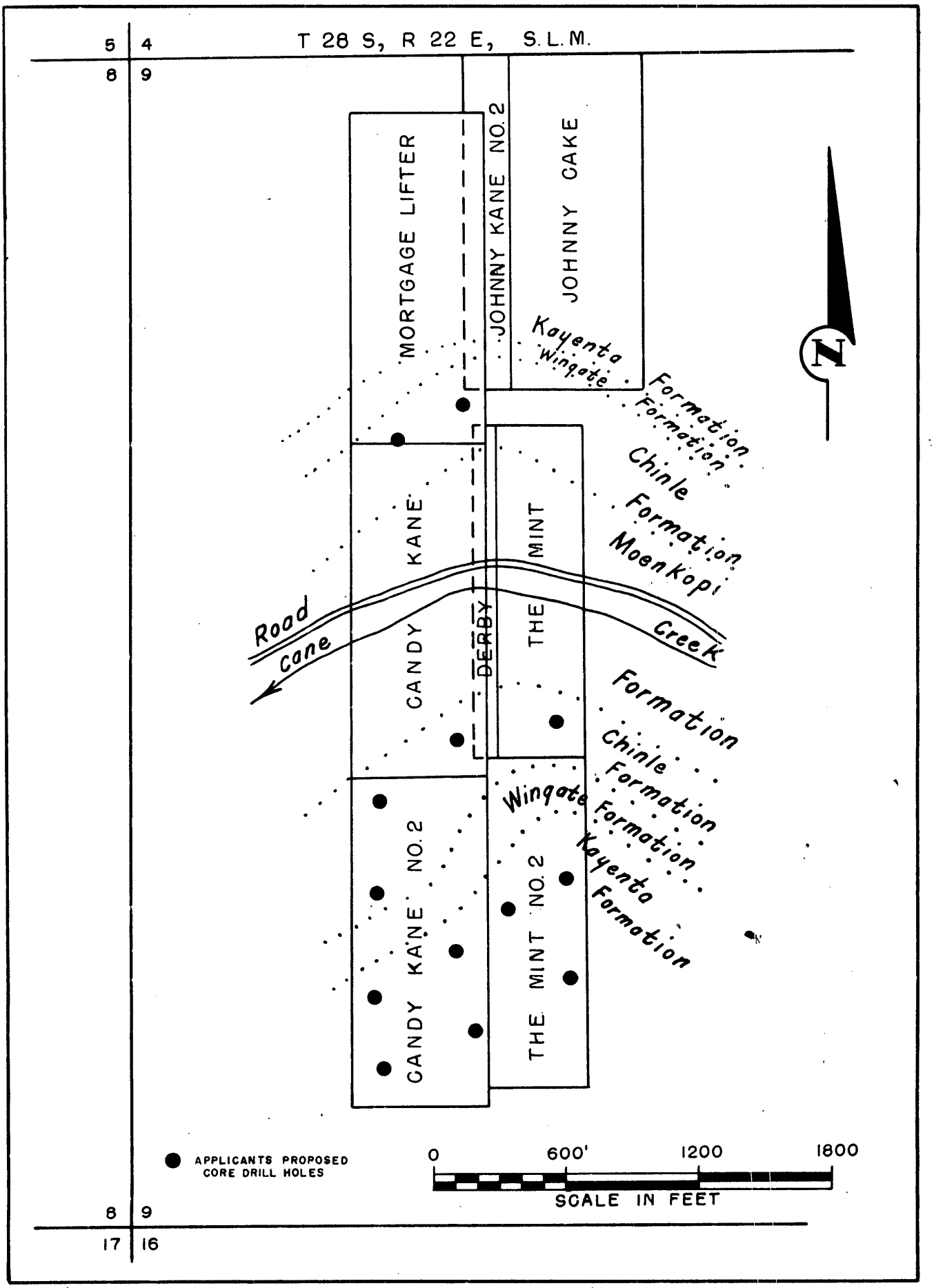



FIGURE 2 - CLAIM MAP OF CANDY KANE GROUP, MONTE CRISTO URANIUM COMPANY, SAN JUAN COUNTY, UTAH (DMEA 3470)

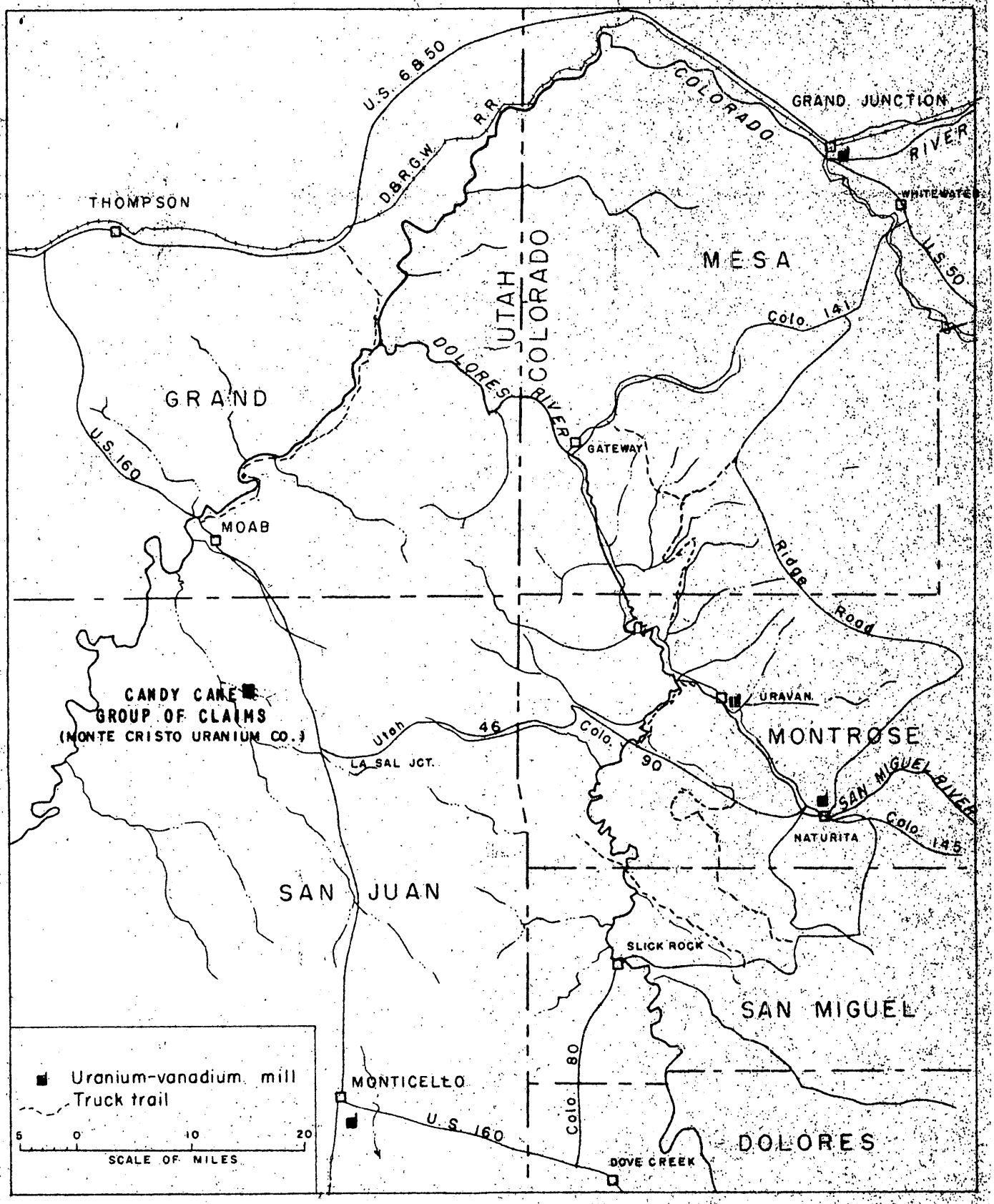
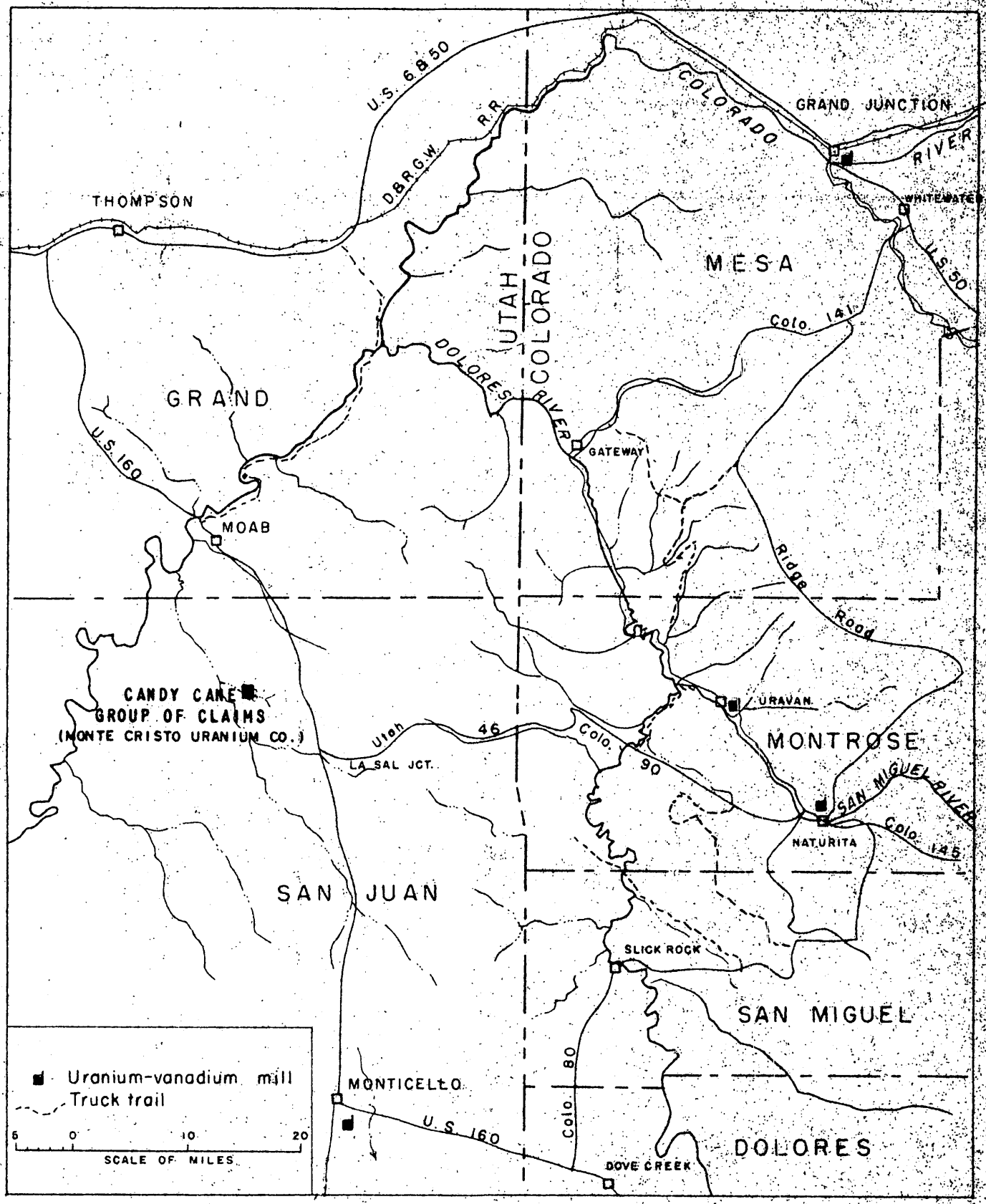



Figure 1. INDEX MAP OF PART OF UTAH AND COLORADO SHOWING LOCATION OF CANDY CANE GROUP OF CLAIMS, SAN JUAN COUNTY, UTAH

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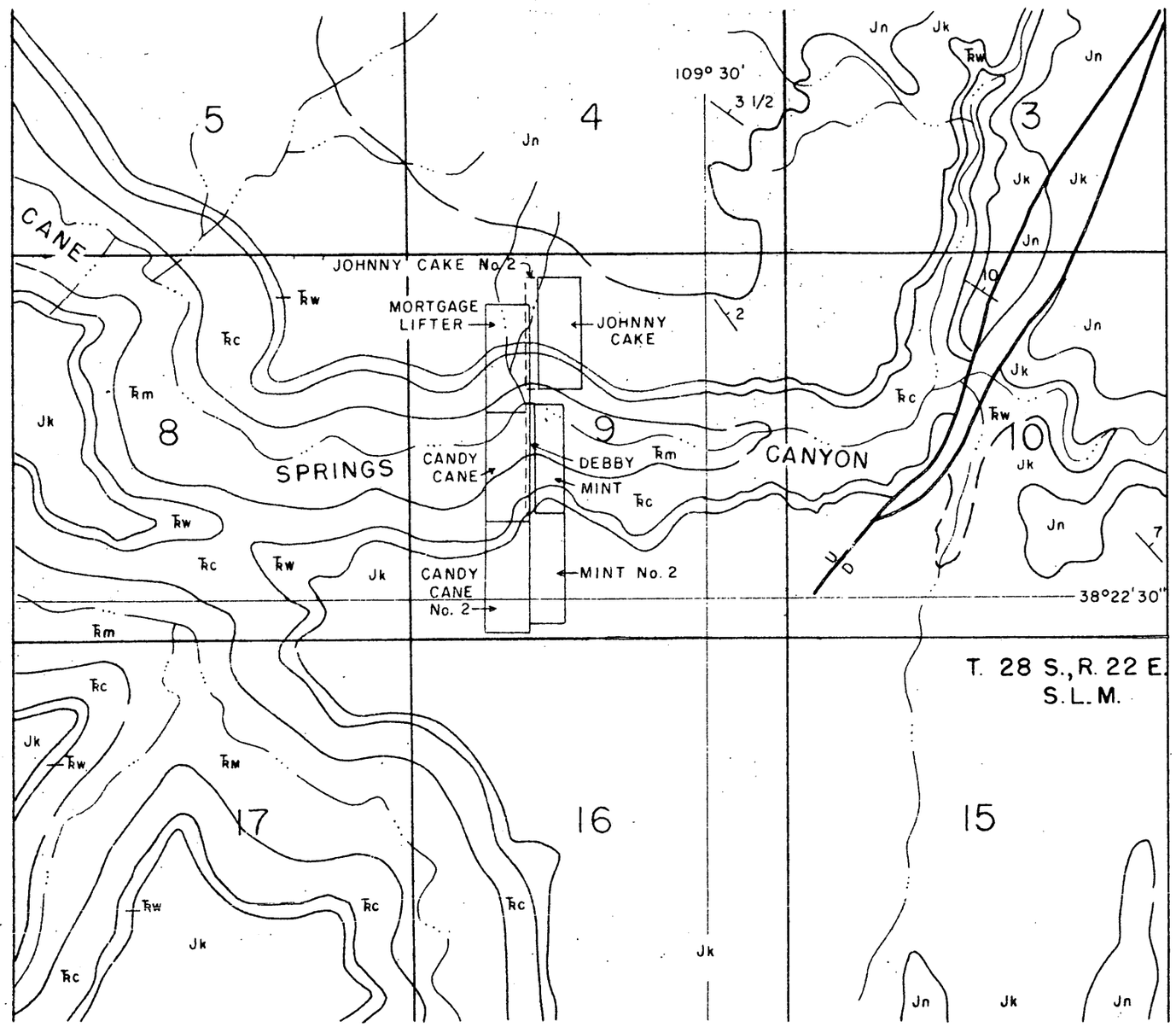
U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3470




N

EXPLANATION

Jn — NAVAJO SS

Jk — KAYENTA FM

Ꞧw — WINGATE SS

Ꞧc — CHINLE FM

Ꞧm — MOENKOPI FM

FORMATION CONTACT

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2 — STRIKE AND DIP OF BEDS

15 — LAND SECTION NUMBER

BASE FROM PHOTOGEOLOGIC QUADRANGLE MAPS, CARLISLE 1, AND 8; MT. PEALE 4, AND 5.

0 2000 4000 6000 FEET

CLAIMS TAKEN FROM MAP SUBMITTED BY MONTE CRISTO URANIUM COMPANY

Figure 2. GEOLOGIC MAP SHOWING CANDY CANE GROUP OF CLAIMS, SAN JUAN COUNTY, UTAH

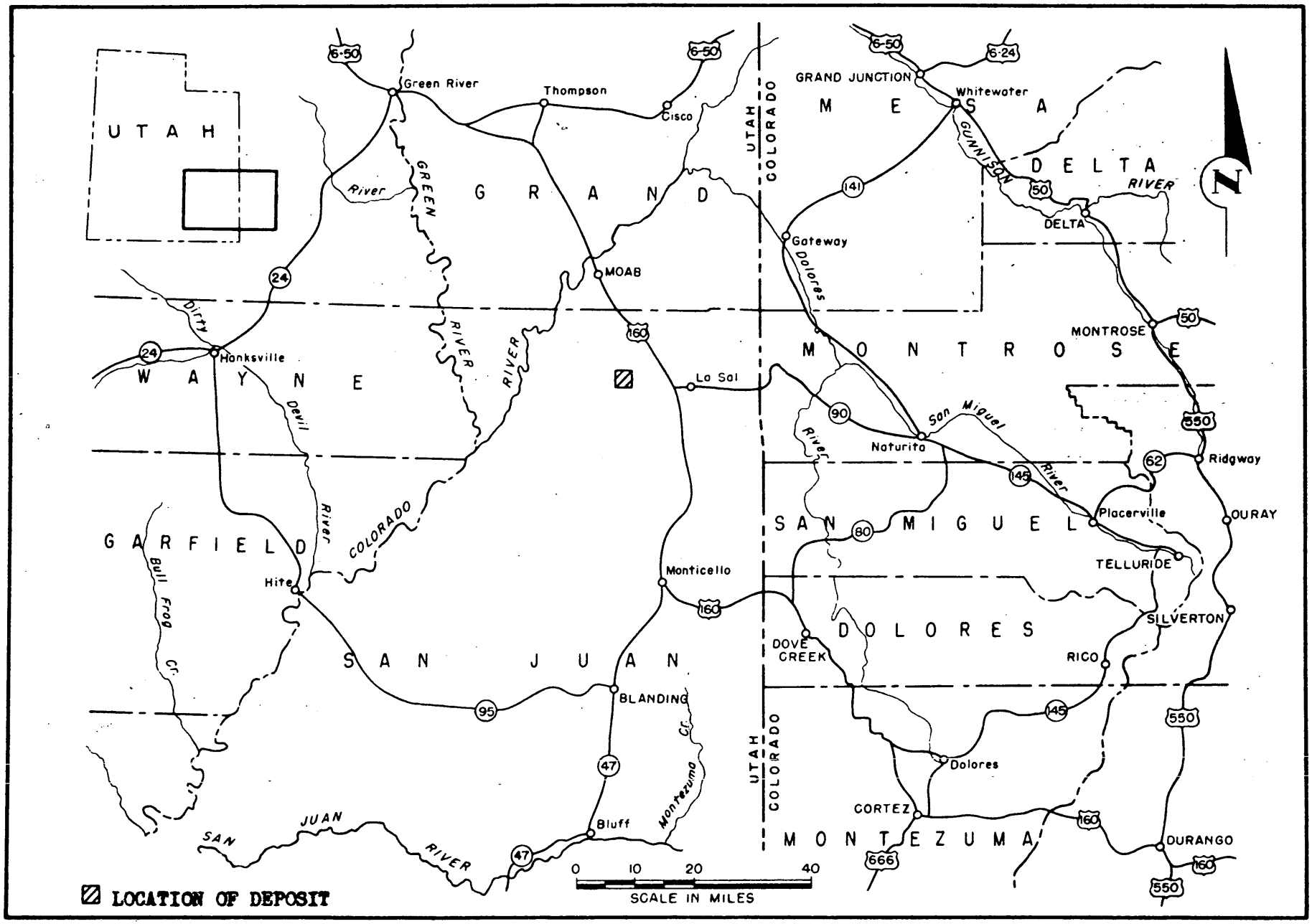



FIGURE 1 - LOCATION MAP, CANDY KANE GROUP, MONTE CRISTO URANIUM COMPANY, SAN JUAN COUNTY, UTAH.
DMEA 3470

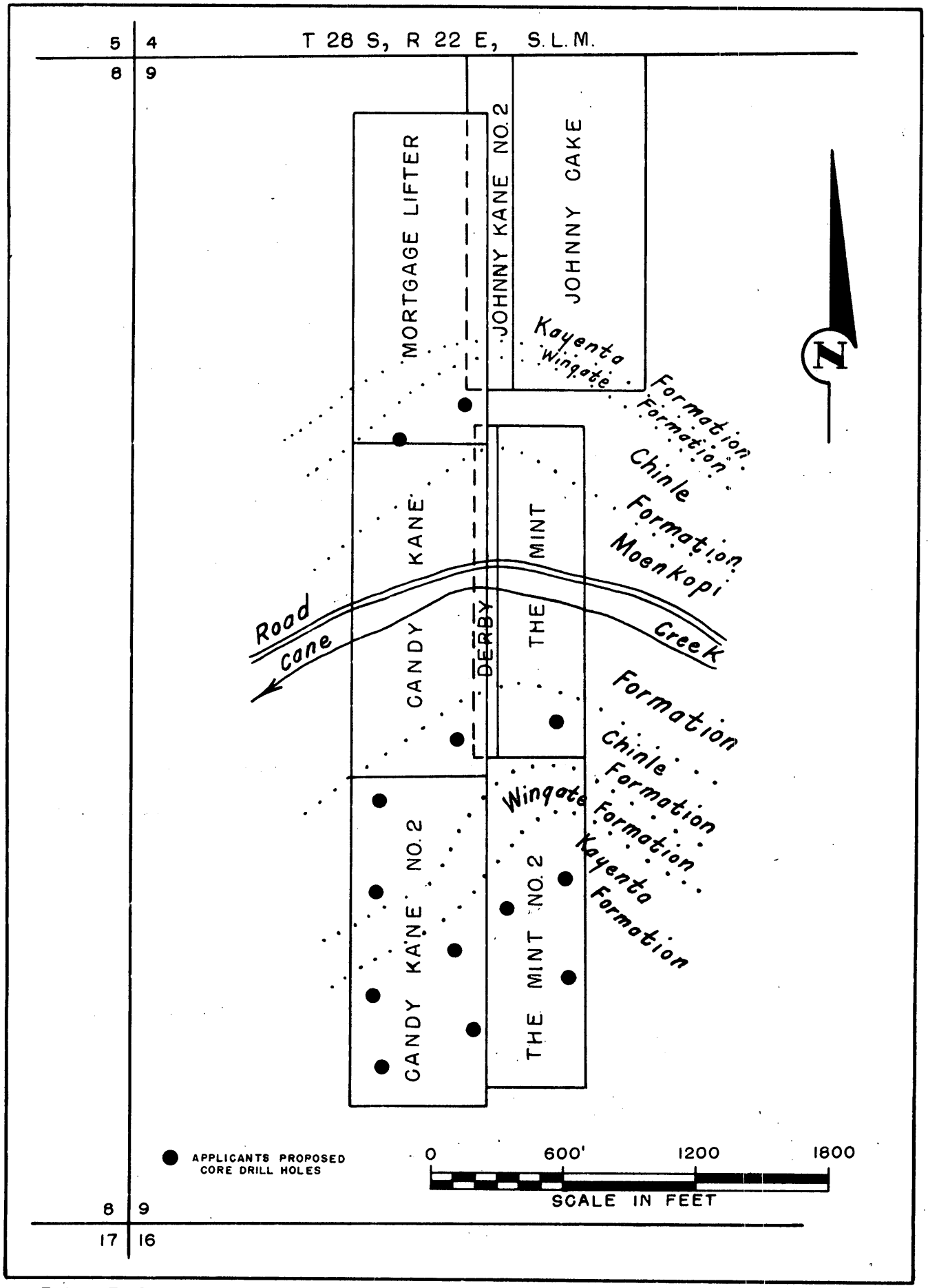
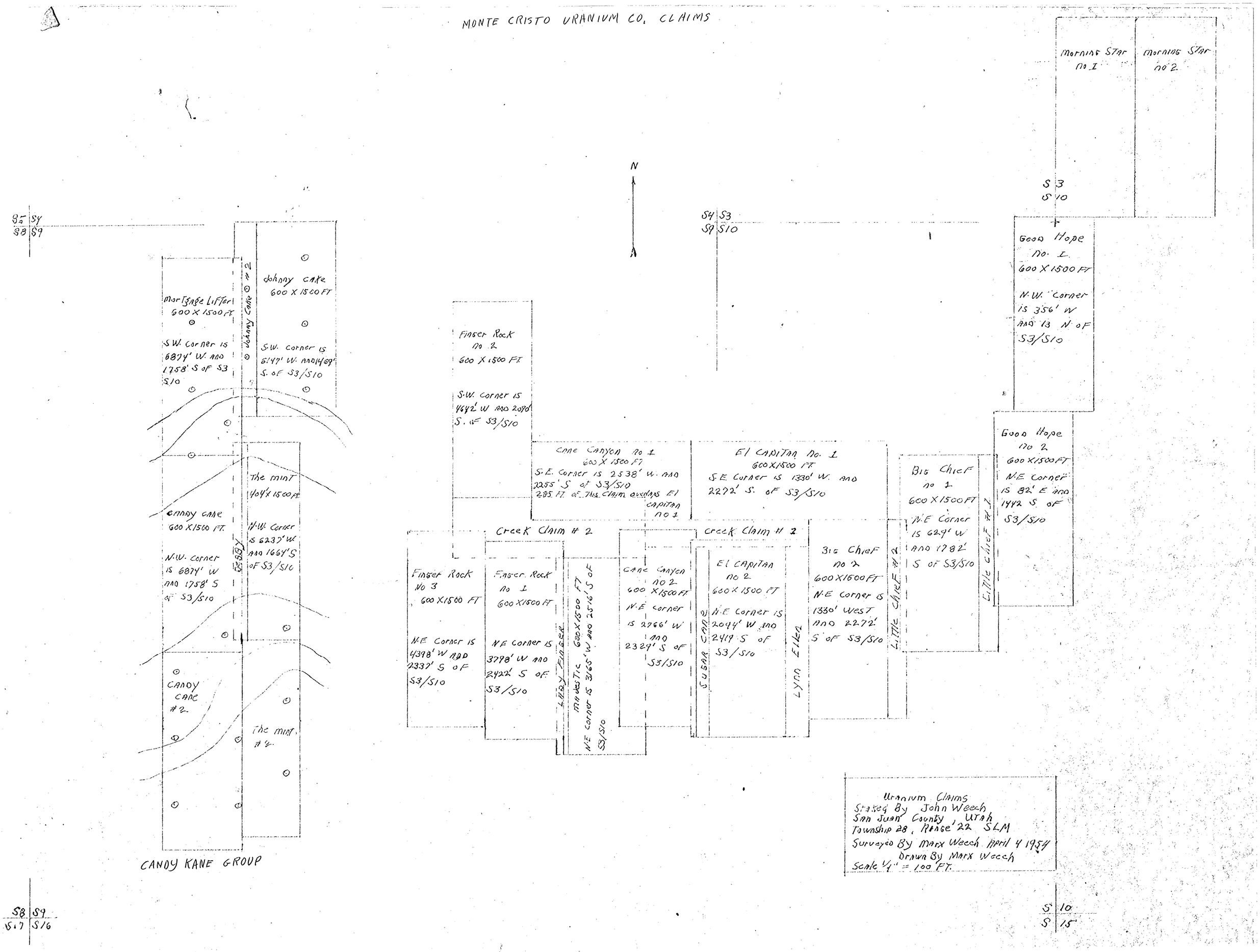



FIGURE 2 - CLAIM MAP OF CANDY KANE GROUP, MONTE CRISTO URANIUM COMPANY, SAN JUAN COUNTY, UTAH (DMEA 3470)

MONTE CRISTO URANIUM CO. CLAIMS