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25th New Customhouse
Denver 2, Colorado

June 16, 1959

Memorandum

To: Chairman, Operating Committee, GMX

From: GMX Field Team, Region III

Subject: Docket GMX 603h (Uranium) Rudolph Mines (Rudolph claims) Park County, Colorado

In reference to your teletype of June 5, 1959, enclosed are the original and two copies of a supplemental engineering report by R. E. Marshall, Mining Engineer, Bureau of Mines, dated June 1959, and his memorandum of transmittal thereof, dated June 15, 1959.

The applicant was contacted by telephone on June 9, 1959, and request made for the partnership's latest balance sheet and profit and loss statement, percentage of ownership of each partner, and new bank letters. In addition, the applicant was requested to submit at least two copies of bids for the drilling. To date none of the requested material has been received; however, it will be forwarded as soon as made available to this office.

The consulting engineer details the estimated costs for 1,000 feet of trenching in Stage I and not to exceed 1,375 feet of EX core drilling in Stage II, at a total estimated cost of the project at $12,752.50, beyond which the Government would contribute 50 percent, or not to exceed $6,376.25.

The engineer's estimate of incidental allowance is justified on the following basis:

Stage I

Consulting geological engineer, 4 days @ $50/day	$200.00
Use of geiger counter, 4 days @ $15/day	60.00
Assaying and miscellaneous	40.00
Total	$300.00
(1,000 feet of trenching at $30/foot	$300.00)

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Stage II

Rental of hole probe, 1,375 feet at $0.10/foot ----------	$137.50
Consulting geological engineer and supervisor, 7 days @ $50/day ----------	350.00
Accounting and miscellaneous, 4 months @ $50/mo. --------	200.00
Total	$687.50

(1,375 feet of drilling at $0.50/foot ---------- $687.50)

Also enclosed are 5 extra copies each of maps, Figures 1 and 2, for possible use in a contract.

If favorable consideration is given the matter, it is recommended that the contract be prepared on a "Fixed Unit Cost" basis.

Original signed by
J. W. TOWNSEND

By J. W. Townsend
Executive Officer

Enclosures

JWT:jy

cc: David D. Baker, AEC (2)
Harshman
OME/DFC
OMR/DFC
Docket 6034
Chron.

} w/copy of supplemental engineering report

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BUREAU OF MINES

JunREGION III

DENVER EXPERIMENT STATION

BUILDING 20, FEDERAL CENTER
DENVER 2, COLORADO

Memorandum

To: Executive Officer, OME Field Team, Region III

From: Milton H. Marshall

Subject: Docket OME 6034 (Uranium) Redskin Mines, (Redskin Claims), Park County, Colorado -- Re-examination of Property.

The property proposed for subordination under the subject docket was re-examined June 8, 1959. As requested, a sufficient number of claim corners were found to verify that the claims are located as recorded.

The recommended exploration program described in the attached supplemental report was discussed with Mr. J. B. Fitzsimmons, Shawnee, Colorado, and meets with his approval.

Mr. E. N. Harshman, Geologist, Geological Survey, suggested the method of exploration that is incorporated into the report.

Milton H Marshall
Milton H. Marshall
Mining Engineer

MHMins

COPY TO: Harshman

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DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

OFFICE OF MINERALS EXPLORATION
REGION III

OME 6034
Bobkin Mines
Bobkin claims
Park County, Colorado

Uranium

Supplemental Engineering Report
to the
Joint Engineering and Geologic Report

by

M. Z. Marshall, Mining Engineer
Bureau of Mines

June 1959

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Recommended work program	2
Estimate of costs	5

ILLUSTRATIONS

Plates	Follows page
1. Claim map showing location of pit on Rudolphin No. 8-A Claim, Rudolphin Mines, Park County, Colo.	6
2. Exploration map, Rudolphin Mines, Park County, Colo.	6

GENERAL

The Indskip Mines property proposed for subexploration under Docket OHE 6834 was re-examined June 8, 1959 with consideration given to a possible OHE contract.

In considering the property (fig. 1) from a project standpoint, the following points are noteworthy; although they were not highlighted in the original report, they have a definite bearing on the estimate of costs.

1. The property is located 1 mile from Shawnee, Colo., a community served by U. S. Highway 285. Shawnee is approximately 1 hour driving time from Denver, Colo. The property is bisected by an excellently maintained county road.

2. The area in which work is recommended is approximately 400 feet distant to the north and roughly parallels the county road. Relief within the exploration area does not exceed 75 feet. The soil cover is expected to range from four to six feet in depth. Some sharp ridges may be encountered in cutting trenches owing to the differential weathering of the underlying steeply inclined strata.

3. The going rates for dozer work in the area are:

D-6 or equiv.	$10.00 per hour
D-7 or equiv.	12.50 per hour
D-8 or equiv.	16.00 per hour

The D-6 and D-7 type dozers are obtainable locally. The D-8 type dozer would probably be brought in from the Denver vicinity, necessitating more moving time.

RECOMMENDED WORK PROGRAM

The recommended work consists of exploration by bulldozing, trenching, and core drilling to test a tungsten bearing shear zone in the Precambrian Idaho Springs formation.

Bulldozing should be done with a D-7 or D-8 Caterpillar dozer or equivalent unit of any other make. The larger capacity units are recommended so that the soil mantle may be completely removed within a minimum period of time. A ripper attachment to the dozer may facilitate the trenching and would be more efficiently employed on a heavier dozer.

The half-time services of a competent consulting geologist will be required to direct the cutting of the trenches inasmuch as the locations of three of the five recommended trenches will be dependent on the geologic appraisal of conditions revealed by previous trenching. In the absence of CMX personnel, the consulting geologist would be required to competitively determine the favorability of the exposed shear zone and direct subsequent trenching accordingly.

Sections of the trenches showing significant mineralization should be sampled. Each sample should be split. The operator will use one half for chemical assay purposes; the other half shall be stored in a suitable container properly identified as to sample number, trench number, location where obtained in the trench, width of vein where sampled, and length of cut to obtain the sample.

Inasmuch as the terrain is relatively flat and shallow footing is no problem, access road and drill site preparation can easily be done with a D-6 or D-7 Caterpillar dozer or equivalent unit of any other make.

All drill holes shall be cored NX or larger. Drilling depths will depend upon geological conditions revealed or indicated by the bulldozing but are expected to intercept the shear zone at depths from 75 to 150 feet below the surface. Sections of cores showing significant mineralization shall be split. The operator will use one half for chemical assay purposes; the other half to be stored with the non-mineralized core in boxes properly identified as to hole number with spacers placed between the core sections marked to indicate the depth represented.

STAGE I

Excavate five (5) bulldozer trenches of not more than 200 lineal feet each to an approximate depth of five (5) feet. The trenches are to be cut at right angles to the strike of the shear zone and be spaced approximately 200 feet apart. Trenches Nos. 1 and 2 as indicated by figure 2 attached, shall be cut to intercept the shear zone; one approximately 100 feet east and one approximately 100 feet west of the fifteen foot deep Rudkin No. 2-A claim prospect pit. The remaining three trenches shall be cut to intercept the shear zone in the direction determined to be most favorable based on previous CME trenching.

STAGE II

If significant mineralization, anomalous radioactivity, or favorable geologic conditions are revealed by the Stage I trenching, CME may authorize Stage II.

Stage II is to consist of access road and drill site preparation followed by a maximum of 1,375 feet of diamond core drilling to explore at depth any uranium bearing zones encountered or indicated by Stage I trenching.

The position, depth, bearing, and inclination of the holes will be determined by CME. An estimated 5 holes drilled from 5 drill sites may be

required for this stage. All drill sites, however, will be located by CMH prior to commencing Stage II drilling.

All drill holes are to be probed for radioactivity, and logs both lithologic and radioactivity are to be prepared.

No drill hole shall intersect the shear zone at a vertical depth of less than 75 feet from the surface.

No drill hole shall intersect the shear zone closer than 100 feet from the property boundary, nor shall drill holes intersect the shear zone at intervals of less than 75 feet.

A drill bid dated June 23, 1958 from Golden Drilling Company was included in the application with indication that two additional drill bids would be submitted. To date no additional drill bids have been received. For the sake of expediency, the examining engineer contacted Golden Drilling Company. Mr. W. H. Matthews, the company's president, reaffirmed the bid prices and stated a bid price of $7.00 per foot of BX coring for the 250 to 300 feet interval. In the absence of other bids, and discussion of the matter with other Bureau of Mines mining engineers familiar with local drill bid prices in comparable ground, the examining engineer has estimated Stage I drilling from the Golden Drilling Company bid.

ESTIMATE OF COSTS

Stage I

Estimate seven 8-hour days for completion

40 hrs. bulldozing, D-8 bulldozer at $16.00/hr. (including moving time)		
51.2 hrs. bulldozing, D-7 bulldozer at $12.50/hr. (including moving time)	$640.00	
25 chemical analyses for U_3O_8 at $5.00/ea.	125.00	
Incidental allowance 1/ for each acceptable lineal foot of trenching completed. 1000 ft. trenching at $0.30/ft.	300.00	
Total Stage I		$1,065.00
Government participation		532.50

Stage II

Estimate fourteen 40-hour weeks for completion

16 hrs. bulldozing D-7 bulldozer at $12.50/hr. (including moving time)	$200.00	
or		
20 hrs. bulldozing D-6 bulldozer at $10.00/hr. (including moving time)		
1000 ft. EX core drilling at $6.85/ft. 0 to 250 ft.	6,850.00	
375 ft. EX core drilling at $7.00/ft. 250 to 350 ft.	2,625.00	
250 ft. reaming and casing at $3.25/ft.	812.50	
25 ft. cementing and redrilling at $2.50/ft.	62.50	
10 hrs. standby time for probing holes etc. at $8.00/hr.	80.00	
50 chemical analyses for U_3O_8 at $5.00/ea.	250.00	
120 core boxes at $1.00/ea.	120.00	
Incidental allowance 1/ for each foot of core drilling completed. 1,375 ft. at $0.30/ft. drilling	412.50	

Total Stage II	$11,687.50
Government participation	5,843.75
Total estimated cost of project	$12,753.50
Government participation at 50 percent	6,376.85

1/ Includes all costs whatsoever that are not included in the estimates for Category (1) Subcontract Contracts and includes such items as labor supervision, technical services, payroll taxes, rental of multipurpose-executive offices, probing equipment, bookkeeping, etc. which would be allowable under Categories (2) through (7) of a contract.

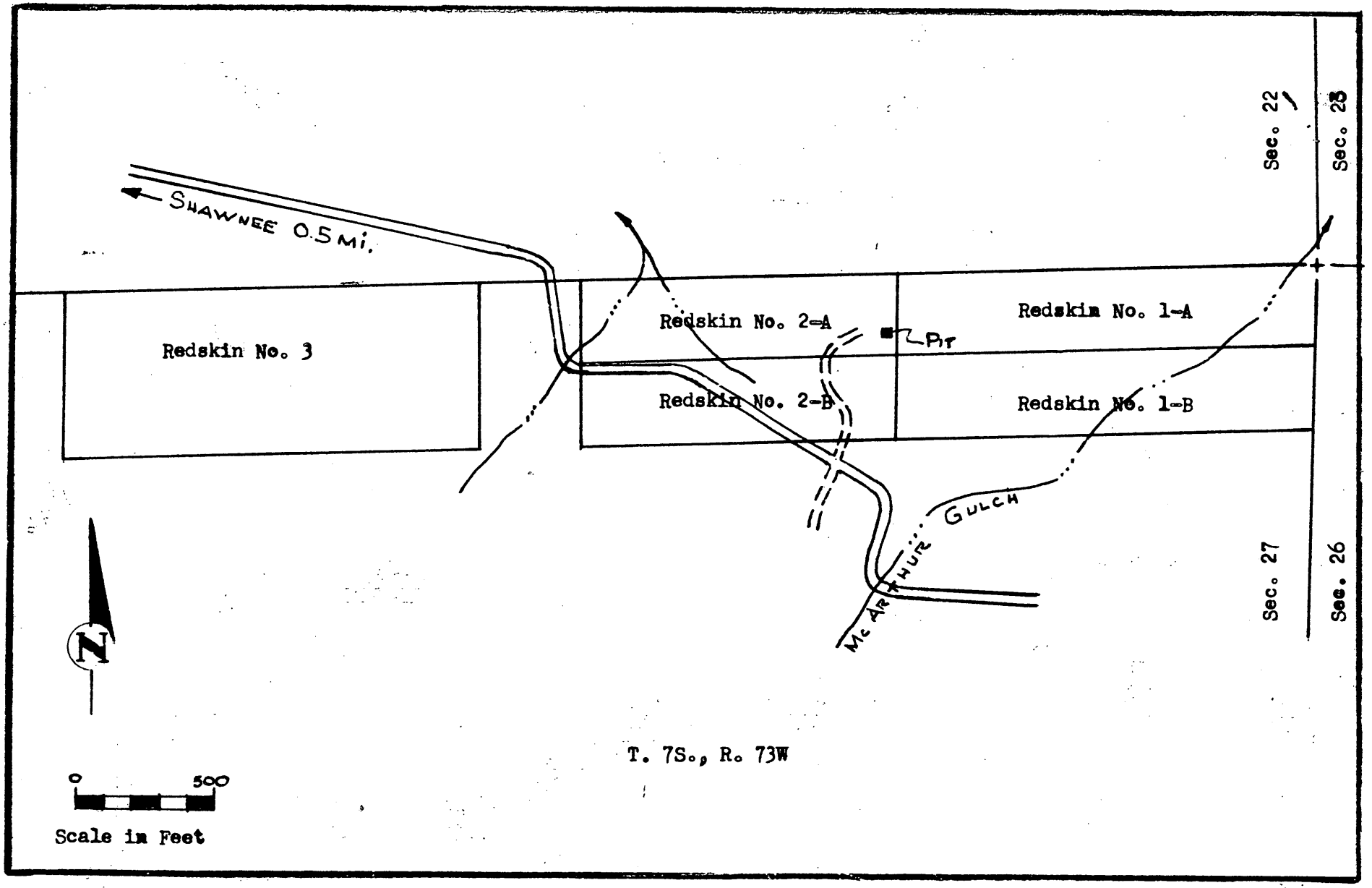

Figure 1- Claim map showing location of pit on Redskin No. 2-A claim, Redskin Mines, Park County, Colorado
Docket OME 6034

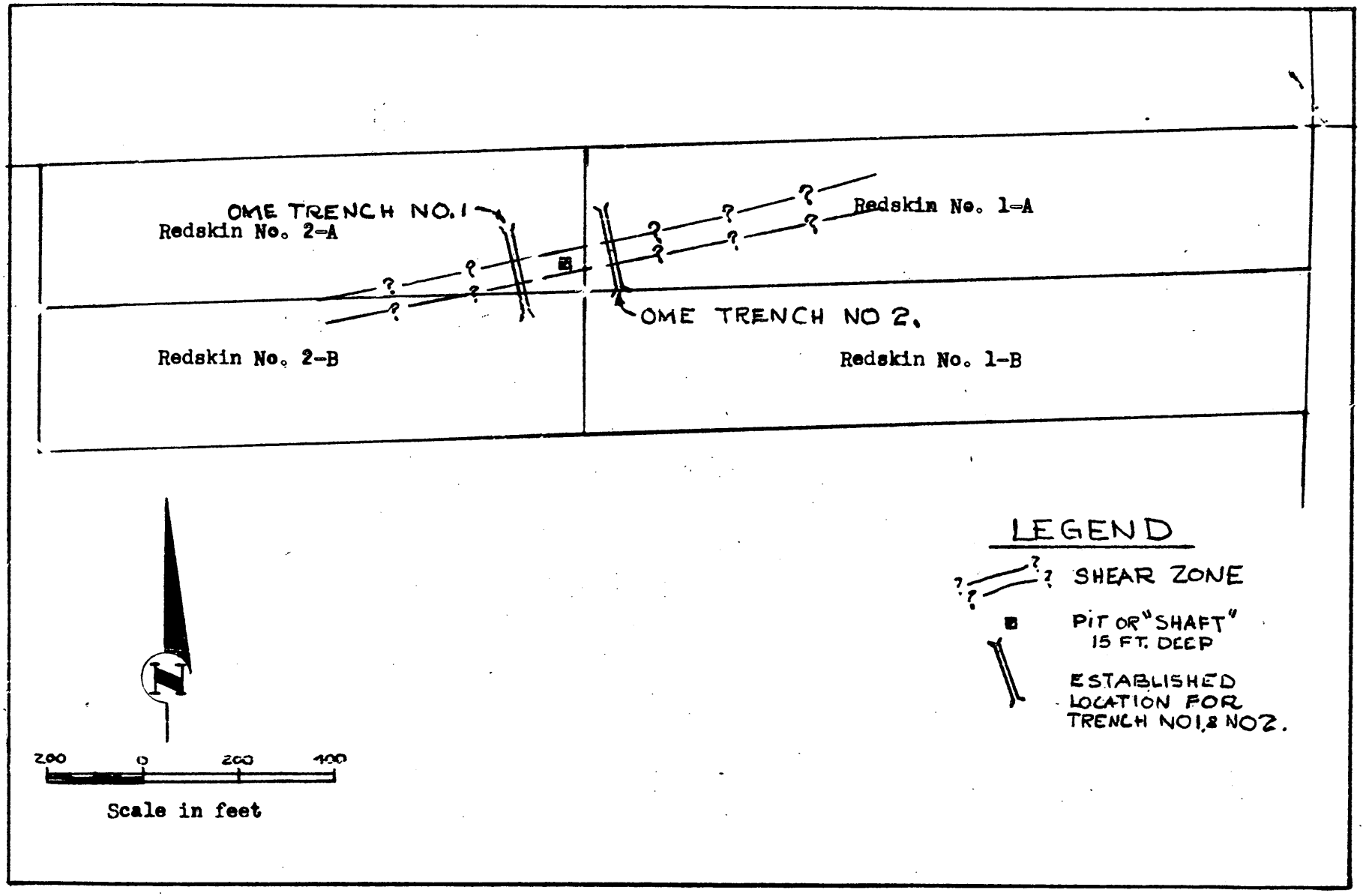

Figure 2- Exploration map, Redskin Mines, Park County, Colorado, Docket OME 6034

USAEC
GRANT [illegible]
[illegible] 13

[illegible] Bldg
Denver 2, Colorado

May [illegible], 1959

Memorandum

To: Chairman, Operating Committee, OME

From: OME Field Team, Region III

Subject: Docket OME-6[illegible] (Umpqua) Rabbits Plume (Rabbits claims) Park County, Colorado

Enclosed are the original and two copies of a Joint Engineering and Geologic Report dated May [illegible], 1959, by J. W. Shelton, Geologist, Geological Survey, and E. F. Beal, Mining Engineer, Bureau of Mines, pertaining to the subject application.

The field examiners recommend that the application be denied without prejudice, and this recommendation may be appropriate. However, a review of facts brought out in the report indicates to us that the property has some merit which might qualify it for exploration assistance under the OME program.

We recommend consideration of a two-stage program, essentially as proposed by the applicant, consisting of surface trenching in Stage I and contingent on the results thereof, a small amount of diamond drilling under Stage II. The applicant's Stage III would be eliminated.

If you concur in our recommendations, please advise immediately; and we will prepare and forward maps and an engineering estimate of costs of the proposed work.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosures
JWT:jy
cc: David B. Baker, AEC (2)
Harshman
OME/DPC
OME/DPC
Docket
Chron.

} w/copy of examination report

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MAY 28 1959
REGION III
DENVER, COLORADO

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Joint Engineering and Geologic Report

by

J. W. Hosler, Geologist
Geological Survey

E. W. Seal, Mining Engineer
Bureau of Mines

May 26, 1959

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ILLUSTRATIONS

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2. Claim map showing location of Bobbin Mines, Park County, Colo. Index No. 60A 60B	3

[illegible]

[illegible]
[illegible]
[illegible], [illegible]

[illegible]

The Rotolin Mines, P. O. Box 1[illegible], [illegible], Colorado, submitted an application June 20, 1[illegible], to the Bureau Minerals Exploration Administration to explore for uranium and "related ores" on the Rotolin claims ([illegible] land parcels), Park County, Colorado. Owing to the reorganization of the Bureau Minerals Exploration Administration program to the Office of Minerals Exploration, the applicant's request for financial assistance was held in abeyance pending resolution of reorganizational matters.

The applicant proposed a three-stage exploration program which included bulldozer trenching, diamond core drilling, shaft sinking, and drifting and/or crosscutting at an estimated cost of $[illegible].

The property was examined May 1, 1[illegible], by J. V. Hatch, geologist, U. S. Geological Survey, and E. V. Bell, mining engineer, U. S. Bureau of Mines. The OME field examiners were accompanied by Mr. Jung Hoon Lee, Director of Major Industries, Geological Survey of Korea, and by Messrs. J. S. and F. P. Fitzsimmons, co-partners.

The property contains secondary uranium mineralization occurring as thin coatings within a shear zone in a granite and schist country rock. The rock is of the Precambrian Idaho Springs formation. As seen in a

12-foot "shaft" that other zone measures 1-1/2 feet wide and is generally mineralized with hydrothermal sericite mineralization throughout the exposed depth.

The property is largely in the prospect stage. The applicant indicated to the examiner that additional exploratory work would be done. It is recommended that the request for mill exploration on the property should be denied without prejudice pending the results of additional exploratory work by the applicant.

FINDINGS

Location and accessibility

The property is in the NW¼ of sec. 27, T. 7 S., R. 73 W., sixth principal meridian, Park County, Colorado (Fig. 1).

From Hartsel, Colorado, a small town on U. S. Highway 285, the property is reached by traveling less than 1 mile along the old highway 285. The old county-maintained highway passes through the property.

Topical features

The property lies in an area of moderate sloping foothills of the Platte River Mountains which face the southerly bounds of the South Platte River. The relief as measured from the river valley to the highest part of the property does not exceed 300 feet.

The principal drainage of the property were in Whitcher Creek which flows through the westerly parts of the claims Nos. 1-A and 1-B claims.

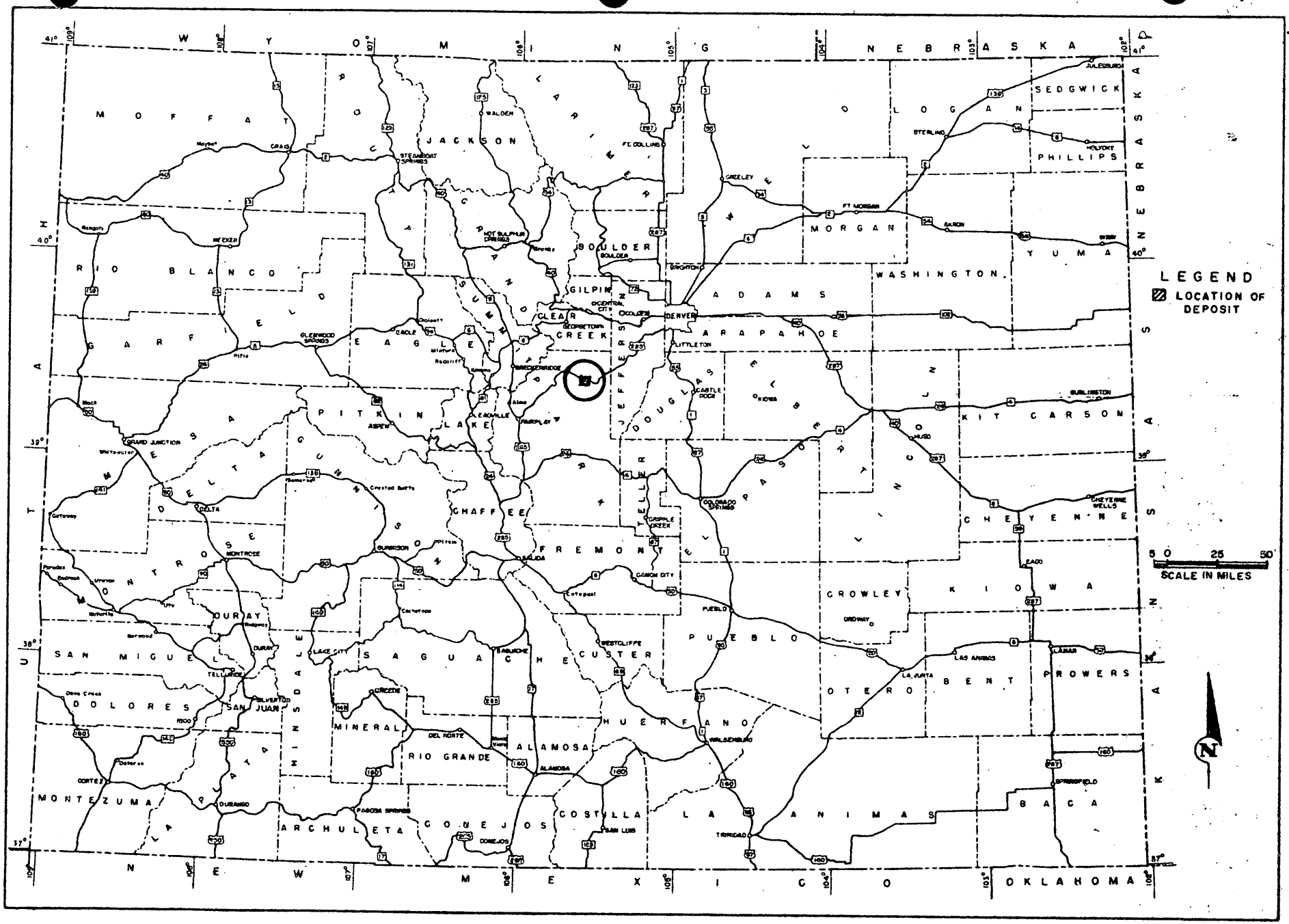

FIGURE 1. INDEX MAP SHOWING LOCATION OF REDSKIN MINES, REDSKIN CLAIMS, PARK COUNTY, COLO. DOCKET OME 6034.

The creek contains sufficient water the year around to meet any mining requirement. An abundant of timber for mine timbers exist on the property.

The winter climate of the area is moderate, and snow would not hamper any mining operations for more than a day or two even under the most extreme conditions.

A 345 power-line passes through the property.

Experienced mining labor and mine supplies can be obtained in several nearby communities or from Denver which is less than 95 miles from the property.

Patent and ownership

The property comprises five parcels of land which are owned by the State of Colorado. The land parcels have been designated by the applicant as the Exhibit Nos. 1-A, 1-B, 2-A, 2-B, and 3 claims (Fig. 2). The claims have been divided into tracts which average from a minimum of 300 by 1,100 feet to a maximum of 600 by 1,300 feet.

The applicant holds the property by virtue of a State of Colorado lease. A considerable amount of difficulty was experienced by the applicant in obtaining a lease. After a district court had ruled in favor of the State, the applicant appealed his case to the Colorado Supreme Court. A favorable decision was granted the applicant on March 17, 1958, by the Supreme Court.

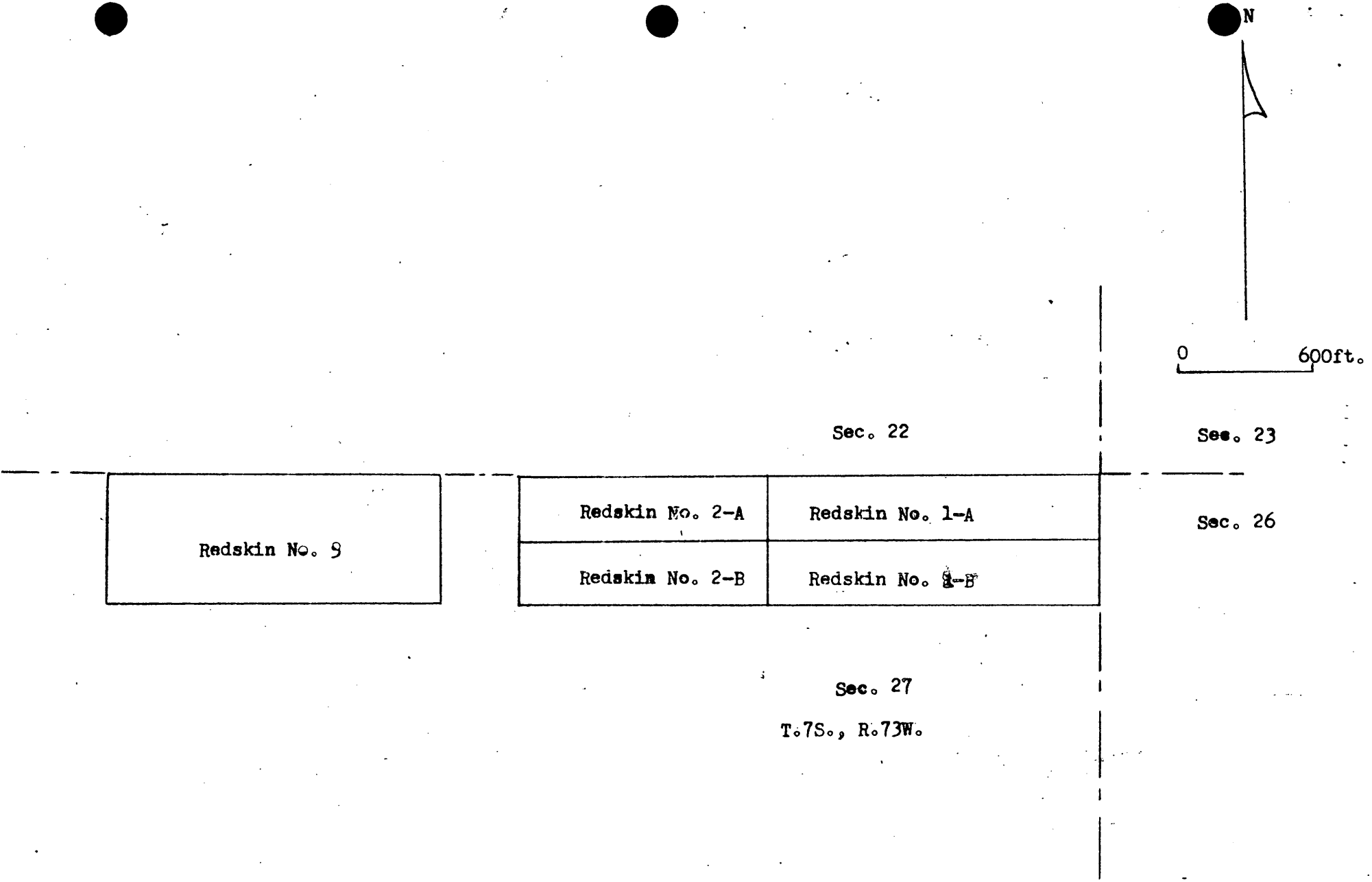

Figure 2- Claim Map Showing Location of Redskin Mines, Park County, Colo. - Docket No. OME 6034

History and exploration

Radioactivity was first discovered on the property by the applicant during February 1955. Since then the applicant has superficially explored the property principally by shallow bulldozer trenches, percussion drill holes, and test pits.

From one 10-foot "shaft," about 1½ tons of ore was removed. The ore, believed to contain about 1.0 percent U_3O_8, has been sacked and is stockpiled near the "shaft." There has been no other ore production.

Present status

The property has been prospected and explored by two shallow bulldozer trenches and several small test pits. Of these pits, the principal one referred to as a "shaft" measures 5 by 7 feet in cross section and extends to a depth of 15 feet.

The applicant indicated to the field examiner that he contemplates more additional trenching and/or deepening and extending existing trenches. Except for the mineralized structure delineated in the "shaft," the applicant's other exploratory workings have not sufficiently determined the extent of the structure; hence the additional work by the applicant could materially add needed geologic information.

APPLICANT'S EXPLORATION PROGRAM

The applicant proposes to explore the property by a three-stage program at an estimated total cost of $35,461.85. Stage I would consist of 100 hours of bulldozing trenches or roads in an effort to determine the extent of the mineralized structure or vein. Contingent upon the results of Stage I work, 1,000 feet of diamond drilling was proposed in Stage II to test the structure at depth. Stage III work would consist of staking and terracing the location and extent of which would be determined from the results of Stage II diamond drilling. Other than that information given above, the applicant gave no other specific exploratory data.

GEOLOGY

Precambrian granite, gneiss, and schist make up most of the rocks exposed in the Front Range. The Precambrian terrain is mainly overwhelmed by steeply tilted Paleozoic rocks, but along the west side of the Front Range near Bonnemillage, steeply dipping Mesozoic rocks rest directly on the Precambrian basement. Gently dipping Tertiary beds rest on the truncated edges of the Mesozoic and Paleozoic formations and lap onto the Precambrian rocks in the northern part of the Front Range and an extensive series of interbedded Tertiary tuffs and lavas rests upon Precambrian, Paleozoic, and Mesozoic rocks in the southern part of the Front Range.

Granite and granite gneiss are the most abundant Precambrian rocks, but schists and gneisses representing much metamorphosed sedimentary rocks occupy large areas. The northern and southern parts of the Front Range consist chiefly of granite, and the central part, in which most of the schist occurs, is cut by innumerable small granitic masses and several stocks and small batholiths.

The uranium deposits found in the Ravenna area in sec. 27, T. 7 S., R. 73 W., ninth principal meridian, which contained the Bobkin claims, Park County, Colorado, occur in the Idaho Springs Formation of Precambrian age; consequently, only the Idaho Springs Formation will be discussed.

The oldest rocks known in the Front Range consist of schists and gneisses of the Idaho Springs Formation. The formation is composed chiefly of quartz-biotite schists and quartz-biotite-sillimanite schists, but quartzite, quartz schists, or quartz gneisses are common in some localities.

Quartzite or quartz schist occurs in several localities and is common along the eastern margin of the mountains near the Big Thompson River, Berthoud Grade, and in the Pikes Peak Quadrangle. A few thin lenticular beds of schists are found in the north-central part of the Front Range, and widely scattered masses of lime silicates intergrown with garnets and magnetite suggests metamorphism of limy beds in the central part of the range. The comparatively simple types of schist mentioned above are most abundant in regions that escaped severe metamorphism that accompanied the intrusion of large granitic masses. In many places extremely fluid granitic magma developed injection gneiss on a large scale, and

some parts of the Idaho Springs formation have been so thoroughly invaded with granitic material that they are actually a primary granite-gneiss.

THE REPORTED

Uranium deposits occur as a local constituent of the pyritic veins associated with beryls such found in the Idaho Springs formation.

Uranium-bearing material on the Rubidoux group of claims, Park County, Colorado, has been discovered along a shear zone that strikes N. 75°-80° E. and dips 85° to the north. The shear zone cuts the Idaho Springs gneisses and exists at a slight angle and is about 18 inches wide. The shear zone consists of altered heavily limonitic material, with chlorite and serpentinent rock in and adjacent to the shear zone. Boundary uranium minerals were torbernite and possibly autunite discovered along fractures existent in the most highly mineralized material near the middle of the shear zone.

Examination of the main material in the "shaft" on the Rubidoux #-4 claim cut a vein along the strike for a distance of some 600 feet showed background count from twice to as much as five times normal. A small zone within the "shaft" showed non-grade material ranging from 0.13 to 0.16 percent U_3O_8. Several zones of ore beside the "shaft" on the #-4 Rubidoux claim were checked with a geiger counter and averaged 5 to 7 M/H on the H scale.

In addition to the shaft, the applicant has prospected the Rubidoux group of claims by digging several test pits, most of them shallow,and

a hillsbury trench on Rabbit claim 1-A. Reconnaissance along the shear zone shows the hillsbury trench to be immediately west of the projected trend of the shear zone. Geiger counter readings along the projected course of the zone range from 2 to 5 times background count with some areas showing a somewhat higher count; none of the readings indicated the presence of ore-grade material. The shear zone was tested by gamma flight and geiger-counter readings for several hundred feet beyond the drawn trench.

Several other test pits had been dug but were badly caved. Geiger-counter readings in the pits ranged from 2 to 5 times background count. Test pits on the Rabbit claims 1-B and 2-B were in more granitic material rather than on the shear zone, which is mostly in the gneiss and schists of the Idaho Springs Formation trending northwestward on the Rabbit 2-A and 1-A claims. The radioactivity was less intense in the more granitic zones than along the shear zone but neither zone registered strong enough radioactivity to be considered for a full-scale exploration program at this time.

CONCLUSIONS AND RECOMMENDATIONS

Findings resulting from the field examination show the property to be largely in the prospect stage.

It is recommended that the application for GSC assistance be denied without prejudice because of the sparse, sporadic occurrence of uranium along the shear zone and the insufficiency of geologic data in the present exploratory workings. The applicant should be encouraged to explore the prospect at his own expense to more or less prove the worth of the prospect before any further consideration by the Field Team.

[illegible]

[illegible] Ave Continuous
Denver 2, Colorado

May [illegible], 1959

Memorandum

To: Chairman, Operating Committee, OME

From: OME Field Team, Region III

Subject: Docket OME-6[illegible] (Uranium) Rebecca Mines (Rebecca claims) Park County, Colorado

Enclosed are the original and two copies of a Joint Engineering and Geologic Report dated May [illegible], 1959, by J. W. Butler, Geologist, Geological Survey, and E. N. Hall, Mining Engineer, Bureau of Mines, pertaining to the subject application.

The field examiners recommend that the application be denied without prejudice, and this recommendation may be appropriate. However, a review of facts brought out in the report indicate to us that the property has some merit which might qualify it for exploration assistance under the OME program.

We recommend consideration of a two-stage program, essentially as proposed by the applicant, consisting of surface trenching in Stage I and equipment on the Rebecca claims, a small amount of diamond drilling under Stage II. The applicant's Stage III would be eliminated.

If you concur in our recommendations, please advise immediately; and we will prepare and forward maps and an engineering estimate of costs of the proposed work.

Original signed by
J. W. TOWNSEND

J. W. [illegible]

Original signed by
E. N. HARSHMAN

E. N. [illegible]

Enclosures
JWT:jy
cc: David B. Baker, AEC (2)
Harshman
OME/DFC
OME/DFC
Docket
Chron.

} w/copy of examination report

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Step II

Rental of hole punch, 1,375 feet at $0.16/foot ———	$137.50
Consulting geological engineer and supervisor, 7 days @ [illegible]/day ———	350.00
Accounting and miscellaneous, 4 months @ 150/mo. ———	600.00
Total	$687.50
(1,375 feet of drilling at $0.50/foot ———	$687.50)

Flow sheets are 6 weeks apart each of maps, Figures 1 and 2, for possible use in a contract.

If favorable consideration is given the matter, it is recommended that the contract be prepared on a "Fixed Unit Cost" basis.

Original signed by
J. W. TOWNSEND

By J. W. Townsend
Executive Officer

Enclosures

JWT:jy

cc: David D. Baker, AEC (2)
Hartman
ONR/DPC
ONR/DRG
Doubert GSA
Chron.

w/copy of supplemental engineering report

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

DENVER EXPERIMENT STATION

BUILDING 20, FEDERAL CENTER
DENVER 2, COLORADO

June 15, 1959

Memorandum

To: Executive Officer, OME Field Team, Region III

From: Milton H. Marshall

Subject: Docket OME 603A (Uranium) Redskin Mines, (Redskin Claims), Park County, Colorado -- Re-examination of Property.

The property proposed for subordination under the subject docket was re-examined June 8, 1959. As requested, a sufficient number of claim corners were found to verify that the claims are located as recorded.

The recommended exploration program described in the attached supplemental report was discussed with Mr. J. B. Fitzsimons, Shawnee, Colorado, and meets with his approval.

Mr. E. N. Harshman, Geologist, Geological Survey, suggested the method of exploration that is incorporated into the report.

Milton H. Marshall
Milton H. Marshall
Mining Engineer

MHMjsc

COPY TO: Harshman

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Park County, Colorado

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Supplemental Engineering Report
to the
Joint Engineering and Geologic Report

by

M. R. Marshall, Mining Engineer
Bureau of Mines

June 1959

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GENERAL

The Redskin Mines property proposed for exploration under Docket OYE 6038 was re-examined June 8, 1959 with consideration given to a possible OYE contract.

In considering the property (Fig. 1) from a project standpoint, the following points are noteworthy; although they were not highlighted in the original report, they have a definite bearing on the estimate of costs.

1. The property is located 1 mile from Shawnee, Colo., a community served by U. S. Highway 285. Shawnee is approximately 1 hour driving time from Denver, Colo. The property is bisected by an excellently maintained county road.

2. The area in which work is recommended is approximately 400 feet distant to the north and roughly parallels the county road. Relief within the exploration area does not exceed 75 feet. The soil cover is expected to range from four to six feet in depth. Some sharp ridges may be encountered in putting trenches owing to the differential weathering of the underlying steeply inclined strata.

3. The going rates for dozer work in the area are:

D-4 or equiv.	$10.00 per hour
D-7 or equiv.	12.50 per hour
D-8 or equiv.	15.00 per hour

The D-4 and D-7 type dozers are obtainable locally. The D-8 type dozer would probably be brought in from the Denver vicinity, necessitating more moving time.

RECOMMENDED WORK PROGRAM

The recommended work consists of exploration by bulldozing, trenching, and some drilling to test a zeolite bearing shear zone in the Pleistocene Idaho Springs Formation.

Bulldozing should be done with a D-7 or D-8 Caterpillar dozer or equivalent unit of any other make. The larger capacity units are recommended so that the soil mantle may be completely removed within a minimum period of time. A ripper attachment to the dozer may facilitate the trenching and would be more efficiently employed on a heavier dozer.

The half-time services of a competent consulting geologist will be required to direct the setting of the trenches inasmuch as the locations of three of the five recommended trenches will be dependent on the geologic appraisal of conditions revealed by previous trenching. In the absence of CMM personnel, the consulting geologist would be required to expeditiously determine the favorability of the exposed shear zone and direct subsequent trenching accordingly.

Sections of the trenches showing significant mineralization should be sampled. Each sample should be split. The operator will use one half for chemical assay purposes; the other half shall be stored in a suitable container properly identified as to sample number, trench number, location where obtained in the trench, width of vein where sampled, and length of cut to obtain the sample.

Inasmuch as the terrain is relatively flat and shallow dozing is no problem, access road and drill site preparation can easily be done with a D-6 or D-7 Caterpillar dozer or equivalent unit of any other make.

All drill holes shall be cored BX or larger. Drilling depths will depend upon geological conditions revealed or indicated by the bulldozing but are expected to intercept the shear zone at depths from 75 to 150 feet below the surface. Sections of core showing significant mineralization shall be split. The operator will use one half for chemical assay purposes; the other half to be stored with the non-mineralized core in boxes properly identified as to hole number with spacers placed between the core sections spaced to indicate the depth represented.

STAGE I

Excavate five (5) bulldozer trenches of not more than 200 lineal feet each to an approximate depth of five (5) feet. The trenches are to be cut at right angles to the strike of the shear zone and to spread approximately 100 feet apart. Trenches Nos. 1 and 2 as indicated by Figure 2 attached, shall be cut to intercept the shear zone; one approximately 100 feet east and one approximately 100 feet west of the fifteen foot deep Dolphin No. 5-A claim prospect pit. The remaining three trenches shall be cut to intercept the shear zone in the direction determined to be most favorable based on previous cut trenching.

STAGE II

If significant mineralization, economic radioactivity, or favorable geologic conditions are revealed by the Stage I trenching, CMS may authorize Stage II.

Stage II is to consist of access road and drill site preparation followed by a minimum of 1,375 feet of diamond core drilling to explore at depth any uranium bearing zones encountered or indicated by Stage I trenching.

The position, depth, bearing, and inclination of the holes will be determined by CMS. An estimated 5 holes drilled from 5 drill sites may be

required for this stage. All drill sites, however, will be located by GSS prior to commencing Stage II drilling.

All drill holes are to be tested for radioactivity, and logs both lithologic and radioactivity are to be prepared.

No drill hole shall intersect the shear zone at a vertical depth of less than 75 feet from the surface.

No drill hole shall intersect the shear zone closer than 100 feet from the property boundary, nor shall drill holes intersect the shear zone at intervals of less than 75 feet.

A drill bid dated June 23, 1953 from Golden Drilling Company was included in the application with indication that two additional drill bids would be submitted. To date no additional drill bids have been received. For the sake of expediency, the examining engineer contacted Golden Drilling Company. Mr. W. E. Matthews, the company's president, reaffirmed the bid quoted and stated a bid price of $7.00 per foot of BX coring for the 250 to 300 foot interval. In the absence of other bids, and discussion of the matter with other Bureau of Mines mining engineers familiar with local drill bid prices in comparable ground, the examining engineer has estimated Stage I drilling from the Golden Drilling Company bid.

BREAKDOWN OF COSTS

Phase I

Estimate seven 8-hour days for completion

40 hrs. bulldozing, D-8 bulldozer at $16.00/hr. (including moving time)		
51.2 hrs. bulldozing, D-7 bulldozer at $12.50/hr. (including moving time)	$640.00	
25 chemical analyses for Fe_2O_3 at $5.00/ea.	125.00	
Incidental allowance 1/ for each acceptable linear foot of trenching completed. 1000 ft. trenching at $0.30/ft.	300.00	
Total Phase I		$1,065.00
Government participation		532.50

Phase II

Estimate fourteen 40-hour weeks for completion

16 hrs. bulldozing D-7 bulldozer at $12.50/hr. (including moving time)	$200.00	
or		
80 hrs. bulldozing D-6 bulldozer at $10.00/hr. (including moving time)		
1000 ft. EX core drilling at $6.85/ft. 0 to 250 ft.	6,850.00	
375 ft. EX core drilling at $7.00/ft. 250 to 350 ft.	2,625.00	
250 ft. casing and casing at $3.25/ft.	812.50	
45 ft. cementing and redrilling at $0.30/ft.	13.50	
10 hrs. standby time for packing holes etc. at $5.00/hr.	50.00	
50 chemical analyses for Fe_2O_3 at $5.00/ea.	250.00	
120 core boxes at $1.00/ea.	120.00	
Incidental allowance 1/ for each foot of core drilling completed. 1,375 ft. at $0.30/ft. drilling	412.50	

Total Stage II	$11,687.50
Government participation	5,843.75
Total estimated cost of project	$12,752.50
Government participation at 50 percent	6,376.25

1/ Includes all costs whatsoever that are not included in the estimates for Category (1) Independent Contracts, and includes such items as labor supervision, technical services, payroll taxes, rental of railroad/bus-equipment cranes, grading equipment, bulldozing, etc. which would be allowable under Categories (2) through (7) of a contract.

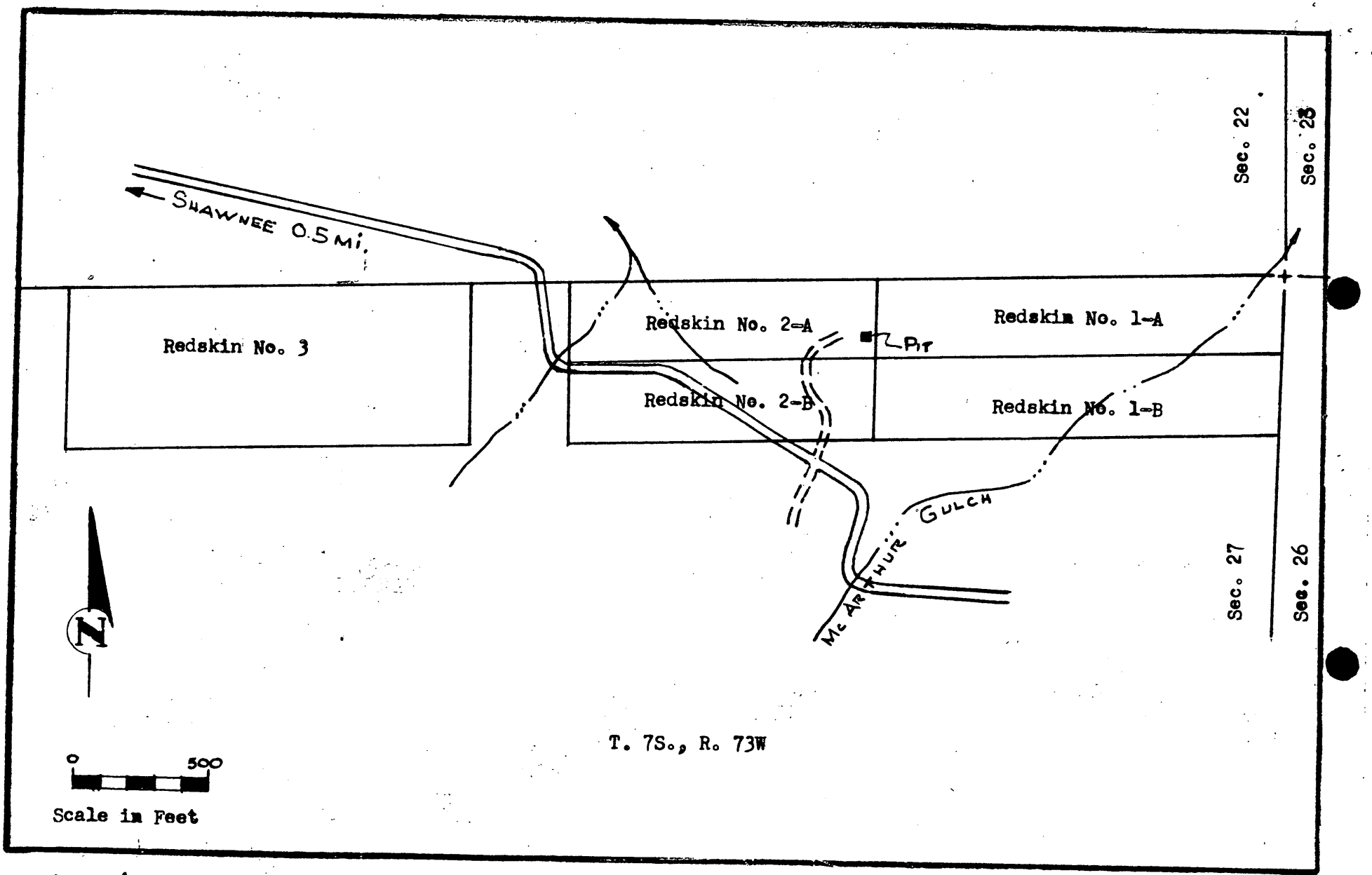

Figure 1- Claim map showing location of pit on Redskin No. 2-A claim, Redskin Mines, Park County, Colorado
Docket OME 6034

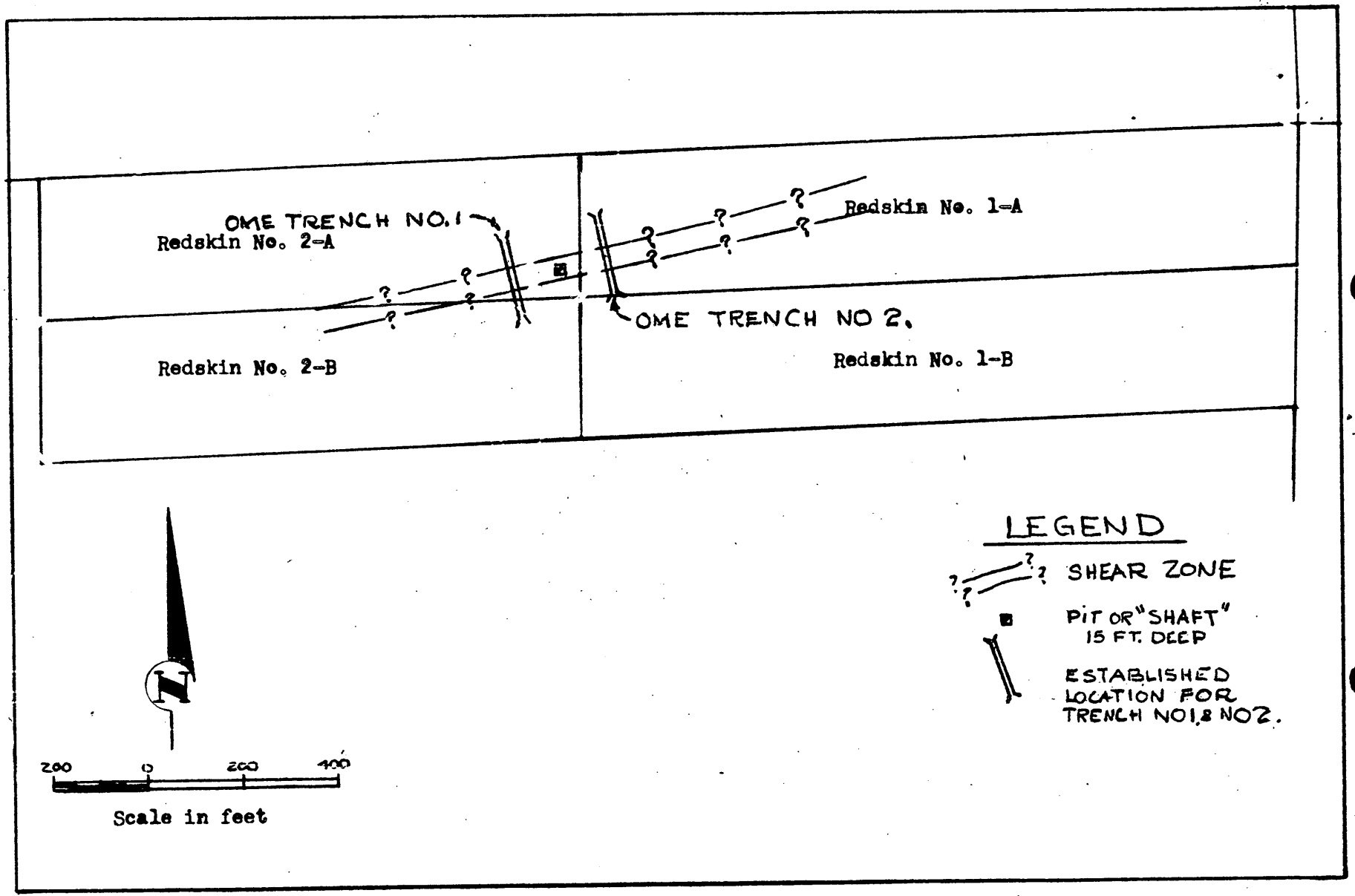

Figure 2- Exploration map, Redskin Mines, Park County, Colorado, Docket OME 6034

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2. Claim map showing location of Rabbit Mines, Park County, Colo. - Project No. GMR 6(3)	3

[illegible]

[illegible]
[illegible]
[illegible], [illegible]

[illegible]

The [illegible], T. 9. [illegible], [illegible], [illegible], submitted an application dated [illegible], to the Bureau Minerals Exploration Administration to explore for uranium and "related ores" on the [illegible] (state land parcel), [illegible], [illegible]. Prior to the reorganization of the Bureau Minerals Exploration Administration program to the Office of Minerals Exploration, the applicant's request for financial assistance was held in abeyance pending resolution of unrelated matters.

The applicant proposed a three-stage exploration program which included helicopter reconnaissance, diamond core drilling, shaft sinking, and drifting and/or crosscutting at an estimated cost of $[illegible].

The property was examined May 1, 1979, by J. W. [illegible], geologist, U. S. Geological Survey, and R. W. [illegible], mining engineer, U. S. Bureau of Mines. The OME field assistance was accompanied by Dr. [illegible] Lee, Director of Geophysics Laboratories, Geological Survey of Korea, and by Messrs. J. E. and J. P. [illegible], co-partners.

The property contains secondary uranium mineralization occurring as thin coatings within a shear zone in a gneiss and schist country rock. The rock is of the Precambrian Kaho Springs Formation. An open in a

15-foot "shaft" the ninny zone measures 1-1/2 feet wide and is sporadically mineralized with secondary copper mineralization throughout its exposed depth.

The property is largely in the prospect stage. The applicant indicated to the examiner that additional exploratory work would be done. It is concluded that the request for HR exploration on the property should be denied without prejudice pending the results of additional exploratory work by the applicant.

PROPERTY

Location and accessibility

The property is in the NE¼ of sec. 27, T. 7 S., R. 73 W., sixth principal meridian, Park County, Colorado (Fig. 1).

From Hartsel, Colorado, a small town on U. S. Highway 285, the property is reached by traveling less than 1 mile along the old Highway 285. The old county-maintained highway passes through the property.

Physical features

The property lies in an area of moderate sloping foothills of the Platte River Mountains which face the southerly bounds of the North Platte River. The relief as measured from the river valley to the highest part of the property does not exceed 700 feet.

The principal drainage of the property area is Waterfall Creek which flows through the southerly parts of the Rebekah Nos. 1-4 and 1-8 claims.

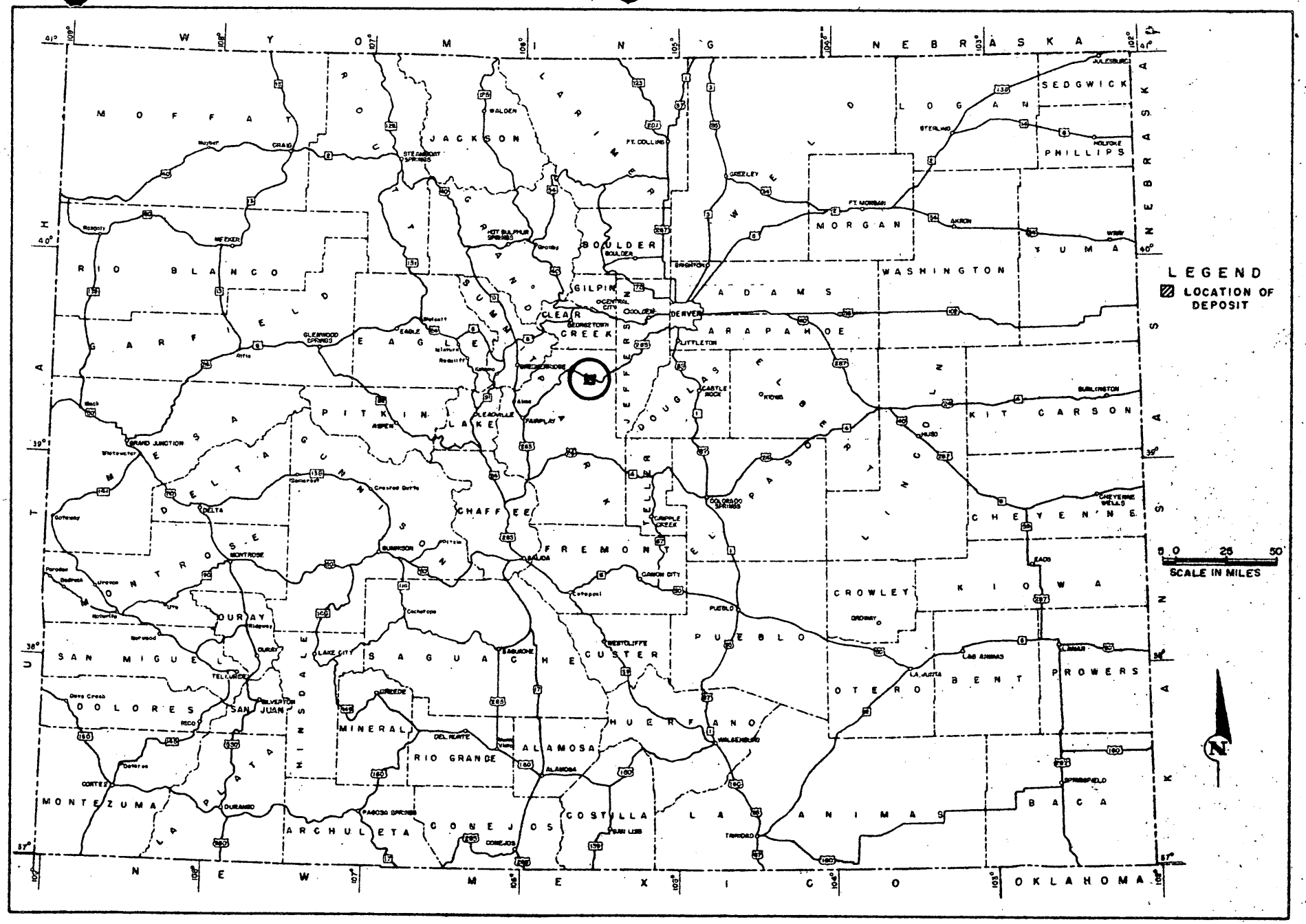

FIGURE 1. INDEX MAP SHOWING LOCATION OF REDSKIN MINES, REDSKIN CLAIMS, PARK COUNTY, COLO. DOCKET OME 6034.

The creek contains sufficient water the year around to meet any mining requirement. An abundance of water for mine workers exists on the property.

The winter climate of the area is moderate, and snow would not hamper any mining operations for more than a day or two even under the most extreme conditions.

A 22kv power-line passes through the property.

Experienced mining labor and mine supplies can be obtained in several nearby communities or from Denver which is less than 55 miles from the property.

Patent and ownership

The property comprises five parcels of land which are owned by the State of Colorado. The land parcels have been designated by the applicant as the Patrick No. 1-4, 1-5, 2-4, 2-5, and 3 claims (Fig. 2). The claims have been divided into tracts which measure from a minimum of 300 by 1,140 feet to a maximum of 600 by 1,320 feet.

The applicant holds the property by virtue of a State of Colorado lease. A considerable amount of difficulty was experienced by the applicant in obtaining a lease. After a District court had ruled in favor of the State, the applicant appealed his case to the Colorado Supreme Court. A favorable decision was awarded the applicant on March 17, 1958, by the Supreme Court.

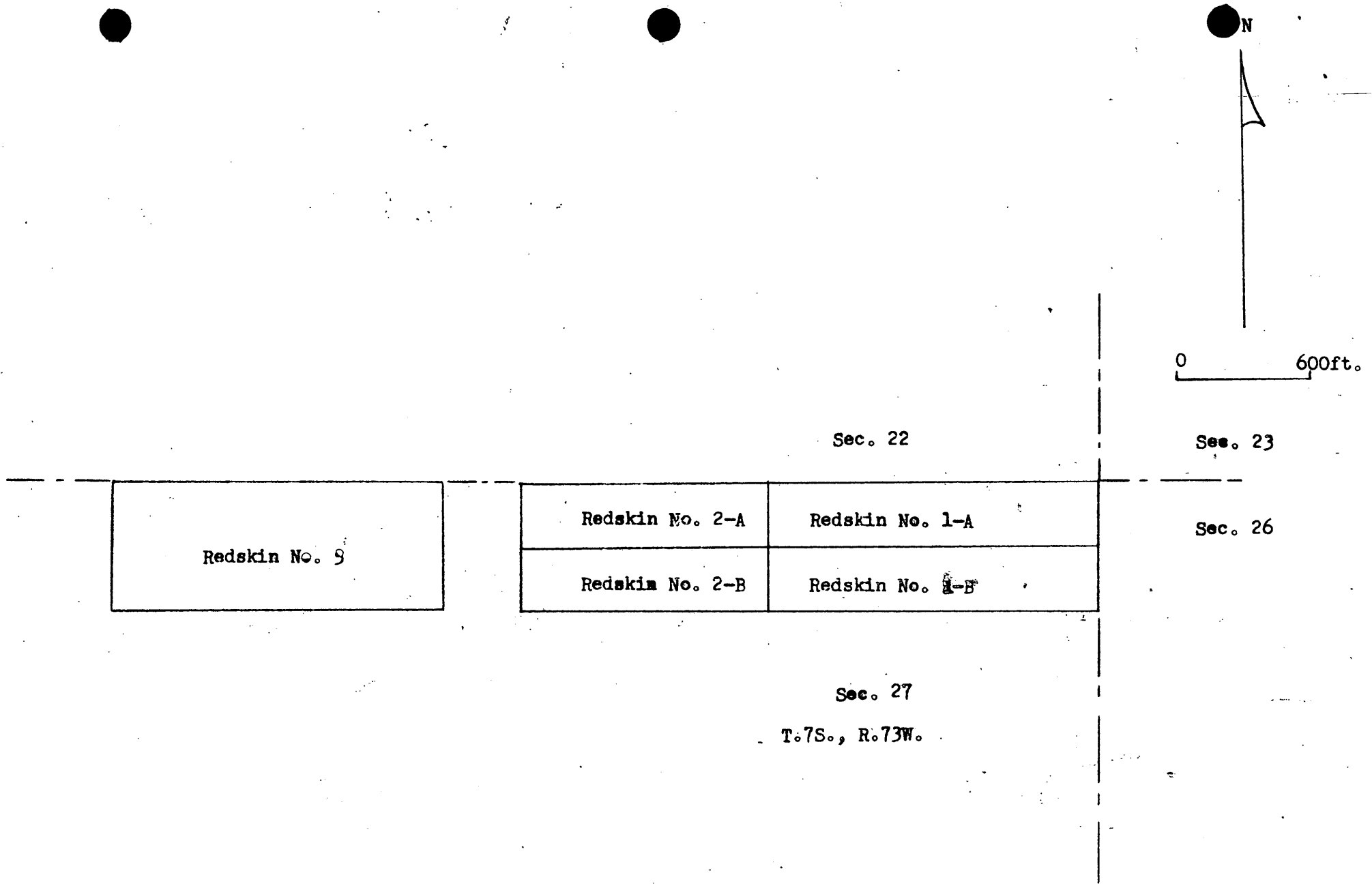

Figure 2- Claim Map Showing Location of Redskin Mines, Park County, Colo. - Docket No. OME 6034

History and exploration

Radioactivity was first discovered on the property by the applicant during February 1955. Since then the applicant has superficially explored the property principally by shallow bulldozer trenches, percussion drill holes, and test pits.

From one 15-foot "shaft," about 1½ tons of ore was removed. The ore, believed to contain about 1.0 percent U_3O_8, has been sacked and is stockpiled near the "shaft." There has been no other ore production.

Present status

The property has been prospected and explored by two shallow bulldozer trenches and several small test pits. Of these pits, the principal one referred to as a "shaft" measures 5 by 7 feet in cross section and extends to a depth of 15 feet.

The applicant indicated to the field examiner that he contemplates some additional trenching and/or deepening and enlarging existing trenches. Except for the mineralized structure delineated in the "shaft," the applicant's other exploratory workings have not sufficiently determined the extent of the structure; hence the additional work by the applicant would materially add needed geologic information.

APPLICANT'S EXPLORATION PROGRAM

The applicant proposes to explore the property by a three-stage program at an estimated total cost of $[illegible]. Stage I would consist of 200 hours of bulldozing trenches or cuts in an effort to determine the extent of the mineralized structure or vein. Contingent upon the results of Stage I work, 1,000 feet of diamond drilling are proposed in Stage II to test the structure at depth. Stage III work would consist of shafts and tunneling the location and extent of which would be determined from the results of Stage II diamond drilling. Other than that information given above, the applicant gave no other specific exploratory data.

GEOLOGY

Precambrian granite, gneiss, and schist make up most of the rocks exposed in the Front Range. The Precambrian terrain is nearly everywhere bordered by steeply tilted Paleozoic rocks, but along the west side of the Front Range near Boulderridge, steeply dipping Mesozoic rocks rest directly on the Precambrian basement. Gently dipping Tertiary beds rest on the truncated edges of the Mesozoic and Paleozoic formations and lap onto the Precambrian rocks in the northern part of the Front Range and an extensive series of interbedded Tertiary tuffs and lavas rests upon Precambrian, Paleozoic, and Mesozoic rocks in the southern part of the Front Range.

Granite and granite gneiss are the most abundant Precambrian rocks, but schists and gneisses representing much metamorphosed sedimentary rocks occupy large areas. The northern and southern parts of the Front Range consist chiefly of granite, and the central part, in which most of the mines occur, is cut by innumerable small granite masses and several single and small intrusions.

The mineral deposits found in the Ouray area in sec. 27, T. 7 S., R. 73 W., sixth principal meridian, which contained the Bachelor claim, Ouray County, Colorado, occur in the Idaho Springs Formation of Precambrian age; consequently, only the Idaho Springs Formation will be discussed.

The oldest rocks known in the Front Range consist of schists and gneisses of the Idaho Springs Formation. The formation is composed chiefly of quartz-biotite schists and quartz-biotite-sillimanite schists, but quartzite, quartz schists, or quartz gneisses are common in some localities.

Quartzite or quartz schist occurs in several localities and is common along the eastern margin of the mountains near the Big Thompson River, Ouray Creek, and in the Pikes Peak Quadrangle. A few thin lenticular beds of marble are found in the north-central part of the Front Range, and widely scattered masses of lime silicates intergrown with quartz and magnetite suggests metamorphism of limy beds in the central part of the range. The comparatively simple types of schist mentioned above are much abundant in regions that contain severe metamorphism that accompanied the intrusion of large granite masses. In many places extremely fluid granite magma developed injection gneiss on a large scale, and

some parts of the Idaho Springs formation have been so thoroughly soaked with granitic material that they now resemble a primary granite-gneiss.

ORE DEPOSITS

Uranium deposits occur as a local constituent of the pyritic veins associated with brecciated rocks found in the Idaho Springs formation.

Uranium-bearing material on the Rabbits group of claims, Park County, Colorado, has been discovered along a shear zone that strikes N. 75°-80° E. and dips 85° to the north. The shear zone cuts the Idaho Springs gneisses and exists at a slight angle and is about 15 inches wide. The shear zone consists of altered heavily limonitic material, with silicified and carbonized rock in and adjacent to the shear zone. Secondary uranium minerals were torbernite and possibly autunite observed along fracture surfaces in the more highly oxidized material near the middle of the shear zone.

Examination of the vein material in the "shaft" on the Rabbits B-A claim and a zone along the strike for a distance of some 500 feet showed background count from twice to as much as five times normal. A small zone within the "shaft" showed ore-grade material containing from 0.13 to 0.16 percent U_3O_8. Several cubic of ore beside the "shaft" on the B-A Rabbits claim were checked with a geiger counter and averaged 5 to 7 R/H on the 2 scale.

In addition to the shaft, the applicant has prospected the Rabbits group of claims by digging several test pits, most of them shallow,and

a bulldozer trench on Rabbit claim 1-A. Reconnaissance along the shear zone shows the bulldozer trench to be immediately west of the projected trend of the shear zone. Geiger counter readings along the projected course of the zone range from 2 to 3 times background count with one zone showing a considerably higher count; none of the readings indicated the presence of ore-grade material. The shear zone was located by quartz float and geiger-counter readings for several hundred feet beyond the dozer trench.

Several other test pits had been dug but were badly caved. Geiger-counter readings in the pits ranged from 2 to 3 times background count. Test pits on the Rabbit claims 1-B and 2-B were in more granitic material rather than on the shear zone, which is visible in the gulches and cliffs of the Indian Springs formation trending northwestward on the Rabbit 2-A and 1-A claims. The radioactivity was less intense in the more granitic zones than along the shear zone but neither zone registered strong enough radioactivity to be considered for a full-scale exploration program at this time.

CONCLUSIONS AND RECOMMENDATIONS

Findings resulting from the field examination show the property to be largely in the prospect stage.

It is recommended that the application for RFC assistance be denied without prejudice because of the sparse, erratic occurrence of uranium along the shear zone and the inadequacy of geologic data in the present exploratory workings. The applicant should be encouraged to explore the project at his own expense to more or less prove the worth of the prospect before any further consideration by the Field Team.