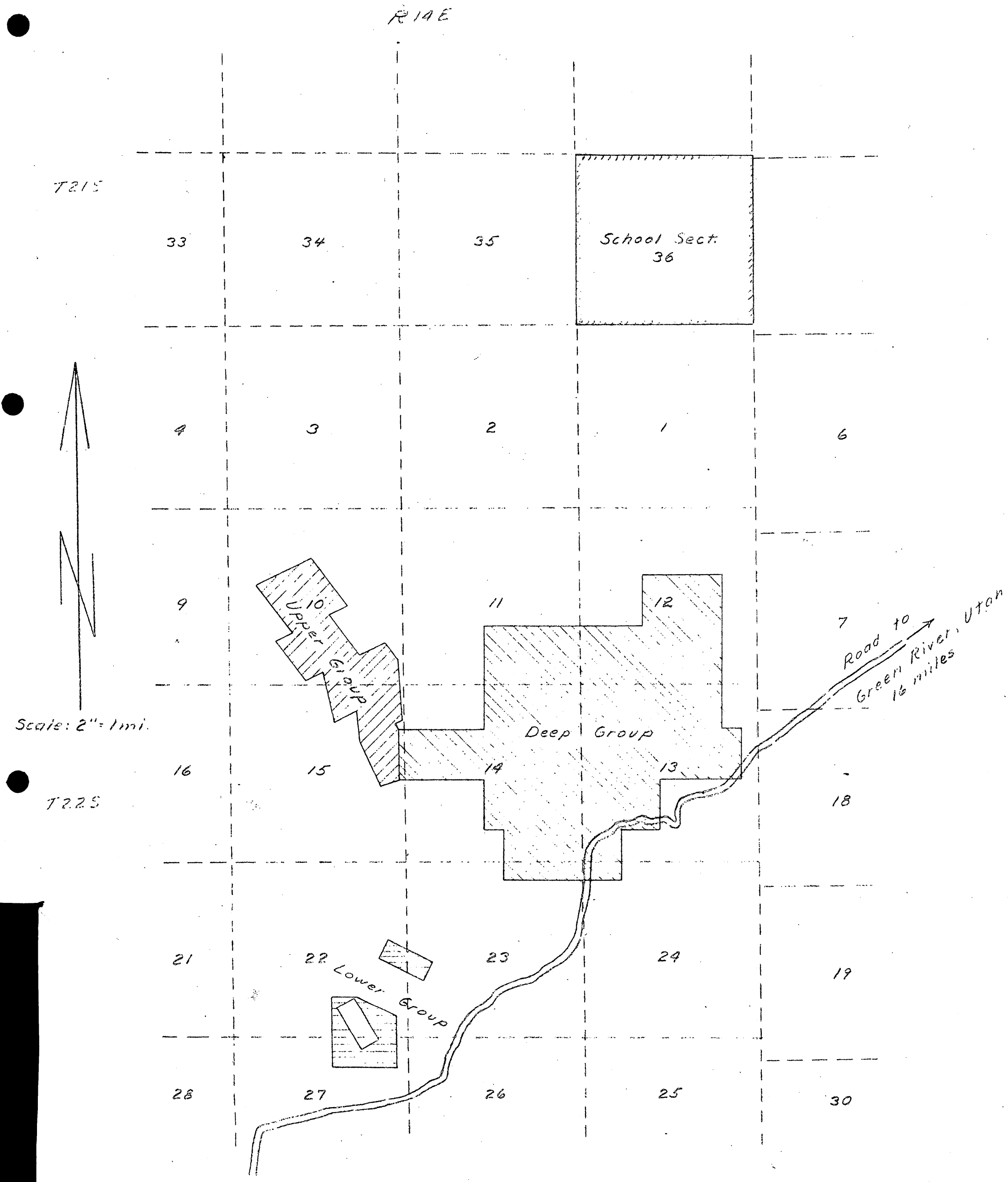

AREA MAP OF VITRO - DESERT QUEEN PROPERTIES, GREEN RIVER MINING DISTRICT,
EMERY COUNTY, UTAH

12/1/54

700

FILE COPY
Surname: Murphy (2081)
Nelson
Gehon
Selfridge
Johnson

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

APR 5 1956

Mr. W. B. Hall, Vice President
Vitro Minerals Corporation
600 West 33rd South
Salt Lake City, Utah

Re: Docket No. DMEA-3984 (Uranium)
Desert Queen Mine and State
Lease sec. 36, T. 21 S., R. 14 E.
Emery County, Utah.

Dear Mr. Hall:

Reference is made to your application for Government aid in an exploration project on the above-named land.

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

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

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

Sincerely yours,

C. O. Mittendorf

Administrator

FMMurphy/izm 4-4-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
DMEA Field Team, Region III (2)
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

Docket Copy

700

Murphy (EWR)

April 4, 1956

SUMMARY OF PROPOSED PROJECT

Object: Denial of application for exploration aid.

Docket No.: DMEA-3984

Commodity: Uranium

Applicant: Vitro Minerals Corporation
600 West 33rd South
Salt Lake City, Utah

Property: Lessee of the "Lower Group" of 7 unpatented claims, situated in sec. 22, T. 22 S., R. 14 E; the "Upper Group" of 14 unpatented claims situated in secs. 10 and 15, T. 22 S., R. 14 E.; the "Deep Group" of 60 unpatented claims situated in secs. 11, 12, 13, and 14, T. 22 S., R. 14 E.; and Utah State Minerals Lease on all of sec. 36, T. 21 S., R. 14 E. The above lands are in the Green River District, Emery County, Utah.

Date of Application: September 14, 1955

Referred to Field Team: September 26, 1955

Field Examination Made: January 10, 1956

Field Team Report Received: March 15, 1956

Work Proposed:

Drill 39 holes totaling 19,200 feet.

Estimated Costs:
Independent Contracts

100 hours bulldozing @ $14/hr.	$1,400.00
19,200 ft. drilling @ $1.91/ft.	36,727.00
Labor & Supervision	7,200.00
Operating Equipment (rental & repairs) 6 months @ $100/month	600.00
Analyses 60 samples @ $5/each	300.00
Accounting 6 months @ $50/month	300.00

Total Estimated Cost of Project $46,527.00

Excerpts from Field Team Report:

Ore deposits in the area are confined to the upper two sandstone lenses of the Salt Wash member of the Morrison formation.

The deposits range in size from mineralized trees to complex, closely spaced groups of small ore bodies with intervening mineralized and barren rock. The larger ore bodies may contain 5,000 to 10,000 tons of ore. Smaller ore bodies are more common in the area, and rim exposures of the Salt Wash are dotted with small pits from which a few tons have been mined.

"Lower Group"

Vitro Minerals does not propose drilling this group. Rim exposures indicate the sandstone lenses are thin (10 to 25 feet) and bleaching is not pronounced. The group has been explored by many wagon-drill holes without unfavorable results.

"School Section 36"

Applicant proposes 5 drill holes each about 1,000 feet in depth. Because no drilling has been done on this section the proposed drilling is considered prospecting.

"Upper Group"

Applicant proposes 5 holes. The Applicant has drilled 9 holes in this group without encountering mineralization. Therefore, further exploration of this group is not warranted.

"Deep Group"

The Applicant proposes 29 holes. Six of the holes would offset mineralized and ore holes on 500 foot centers. The rest of the drill holes would be scattered over the ground on about 2,000 foot centers and might succeed in outlining favorable ground.

The field examiners recommend denial of the application because:

1) The 500-foot offset holes could easily miss ore bodies similar in size to the largest presently known in the area;

2) The 2000-foot spacing might miss fairly large areas of favorable ground and would not provide enough information to guide future drilling;

3) None of the program is likely to repay DMEA's share of the exploration costs even if the program were successful; and

4) The cost of a thorough exploration program cannot be justified on the basis of present knowledge.

The Field Team concurs with the field examiners recommendation, but included a supplemental report outlining a modest exploration program to investigate the ore potential in the vicinity of the two most favorable holes drilled by the Applicant on the "Deep Group."

Commodity Members' Comments: (excerpts)

USBM, J. E. Crawford, March 28, 1956:

Concurs in recommendation to deny the application because the area covered by the claims is either (1) unfavorable (2) unknown geologically, or (3) too deep for an economic drilling program.

USGS, T. H. Kiilsgaard, March 30, 1956:

Concurs in recommendation to deny the subject application for the reasons expressed by the field examiners.

Mr. Kiilsgaard, contacted personnel of the USGS in Grand Junction and the Field Team in Denver and found that they believe the field examiner's recommendation for denial is a valid one and there is no desire on the part of anyone involved to rescind or alter that recommendation in any way.

Rare and Miscellaneous Metals Division, F. M. Murphy, April 4, 1956:

This Division concurs in the field examiners' and commodity members' recommendations that further drilling on the "Lower" and "Upper" groups of claims holds little promise, and that the proposed drilling on section 36 could be considered prospecting, however, from data presented, it appears that additional drilling on the "Deep Group" is warranted, and undoubtedly the Vitro Minerals Corporation will begin further exploratory drilling of this group of claims.

In the opinion of this Division, the Applicant's drill holes DR-1, DR-12, DC-13, DR-13, DC-15 and DR-8 indicate that a mineralization trend may exist in an area about 1,500 feet wide and extending in a N. 20° W., direction from Desert Queen claims Nos. 43, 45, and 47 through the group to Desert Queen claims 20, 22, and 24 on the northern boundary of the "Deep Group".

A first stage program of drilling 20 holes in 3 fences of normal to the strike, the north line using DR-12 as a pivot, the middle line using DC-13 as a pivot, and the south line using DR-8 as a pivot, the holes to be spaced at intervals of 200 feet on each of the lines, should explore this indicated favorable ground at a reasonable cost.

An estimate of the cost is as follows:

9,000 ft. non-core drilling @ $1.41/ft.	$12,690.00	
2,000 ft. core drilling @ $4/ft.	8,000.00	
Supervisor, 3 months @ $600/mth.	1,800.00	
Pickup rental, gas, oil, 3 mths @ $100/mth.	300.00	
Accounting, 3 mths. @ $50/mth.	150.00	
100 core boxes @ $1.20/each	120.00	
Payroll taxes @ 7%	126.00	
Analyses, 36 samples @ $5/each	180.00	
Stage I Total		$23,366.00
Stage II 16 holes (80% of Stage I).....		$18,692.80
Total Estimated Cost of Project		$42,058.80

Mr. Kiilsgaard indicates that the Field Team will not concur in a recommendation to further explore the "Deep Group" other than the drilling of offsets to the Applicant's indicated ore holes.

As the supplementary proposal of the Field Team might be classed as development drilling, and any other drilling proposal might be classified as prospecting or not be feasable from an economic standpoint, this Division concurs in the field examiners' and commodity members' recommendation to deny the subject application.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

3/30/56

IN REPLY REFER TO:

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

March 30, 1956

Memorandum

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

From: Thor H. Kiilsgaard, U. S. Geological Survey

Subject: Review of field examination report, DMEA 3984, Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah.

The subject property may be considered as consisting of four parts. The examining team, after field examination, recommends denial of the application for the following principal reasons:

1) Lower group of claims -- outcrops show that the sandstone lenses are thin and otherwise geologically unfavorable for ore deposition. Many previously-drilled wagon-drill holes afforded discouraging results.

2) School section 36 -- depth to the ore zone is about 1,000 feet. Because no drilling has been done on the section the drilling of preliminary holes would be a prospecting venture.

3) Deep group -- the small size of the known ore bodies in the vicinity indicates that their economic development is feasible only at depths of about 200 feet. Ten existing drill holes show that mineralization on the Deep group is thin and weak at a depth of about 500 feet.

4) Upper group -- previous drilling does not encourage further work. Nine holes have been drilled, but none encountered mineralization.

The writer plotted on one map all the available drill holes and their data for the vicinity of the Vitro property. This work shows that a strong mineralized trend does not appear to be approaching the property.

RECEIVED
MAR 30 1956

A supplemental report was attached to the examining team's report, and the supplement outlined a restricted, modified proposal for the drilling of offset holes around two mineralized holes on the Deep group. Additional inquiry of personnel in the USGS in Grand Junction and of the Field Team in Denver indicated that the examining team's recommendation for denial is a valid one, and there is no desire on the part of anyone involved to rescind or alter that recommendation in any way.

Review of all available information coupled with discussion of the problem with persons in the field make it appear that an exploration project on the property would not be successful in discovering significant, new, economic ore reserves. For that reason and for the additional reasons above I must agree with the Field Team's recommendation for denial of the application.

T. H. Kiilsgaard
Thor H. Kiilsgaard

IN REPLY REFER TO:

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

March 30, 1956

Memorandum

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

From: Thor N. Killegsard, U. S. Geological Survey

Subject: Review of field examination report, DMEA 3984, Vitro Minerals Corporation, Desert Queen Mine and State Lease 3059, Emery County, Utah.

The subject property may be considered as consisting of four parts. The examining team, after field examination, recommends denial of the application for the following principal reasons:

1) Lower group of claims -- outcrops show that the sandstone leases are thin and otherwise geologically unfavorable for ore deposition. Many previously-drilled wagon-drill holes afforded discouraging results.

2) School section 36 -- depth to the ore zone is about 1,000 feet. Because no drilling has been done on the section the drilling of preliminary holes would be a prospecting venture.

3) Deep group -- the small size of the known ore bodies in the vicinity indicates that their economic development is feasible only at depths of about 800 feet. Ten existing drill holes show that mineralization on the Deep group is thin and weak at a depth of about 500 feet.

4) Upper group -- previous drilling does not encourage further work. Nine holes have been drilled, but none encountered mineralization.

The writer plotted on one map all the available drill holes and their data for the vicinity of the Vitro property. This work shows that a strong mineralized trend does not appear to be approaching the property.

A supplemental report was attached to the examining team's report, and the supplement outlined a restricted, modified proposal for the drilling of offset holes around two mineralized holes on the Bump group. Additional inquiry of personnel in the USGS in Grand Junction and of the Field Team in Denver indicated that the examining team's recommendation for denial is a valid one, and there is no desire on the part of anyone involved to rescind or alter that recommendation in any way.

Review of all available information coupled with discussion of the problem with persons in the field make it appear that an exploration project on the property would not be successful in discovering significant, new, economic ore reserves. For that reason and for the additional reasons above I must agree with the Field Team's recommendation for denial of the application.

Thor H. Kiilsgaard

WPWilliams:iml
G-3/30/56

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

IN REPLY REFER TO:

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

March 30, 1956

Memorandum

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

From: Thor N. Kiilsgaard, U. S. Geological Survey

Subject: Review of field examination report, DMEA 3964, Vitro Minerals Corporation, Desert Queen Mine and State Lease 3059, Emery County, Utah.

The subject property may be considered as consisting of four parts. The examining team, after field examination, recommends denial of the application for the following principal reasons:

1) Lower group of claims -- outcrops show that the sandstone lenses are thin and otherwise geologically unfavorable for ore deposition. Many previously-drilled wagon-drill holes afforded discouraging results.

2) School section 36 -- depth to the ore zone is about 1,000 feet. Because no drilling has been done on the section the drilling of preliminary holes would be a prospecting venture.

3) Deep group -- the small size of the known ore bodies in the vicinity indicates that their economic development is feasible only at depths of about 200 feet. Ten existing drill holes show that mineralization on the Deep group is thin and weak at a depth of about 500 feet.

4) Upper group -- previous drilling does not encourage further work. Nine holes have been drilled, but none encountered mineralization.

The writer plotted on one map all the available drill holes and their data for the vicinity of the Vitro property. This work shows that a strong mineralized trend does not appear to be approaching the property.

RECEIVED

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Review of all available information coupled with discussion of the problem with persons in the field make it appear that an exploration project on the property would not be successful in discovering significant, new, economic ore reserves. For that reason and for the additional reasons above I must agree with the Field Team's recommendation for denial of the application.

Thor N. Killegaard

WPWilliams:iml
G-3/30/56

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

IN REPLY REFER TO:

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

March 30, 1956

Memorandum

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

From: Thor N. Kiilsgaard, U. S. Geological Survey

Subject: Review of field examination report, DMEA 3984, Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah.

The subject property may be considered as consisting of four parts. The examining team, after field examination, recommends denial of the application for the following principal reasons:

1) Lower group of claims -- outcrops show that the sandstone leases are thin and otherwise geologically unfavorable for ore deposition. Many previously-drilled wagon-drill holes afforded discouraging results.

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RECEIVED

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Thor H. Killagsard

WPWilliams:iml
G-3/30/56

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

3/29/56 gla

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

March 28, 1956

Memorandum

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

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

Subject: Report of Examination, DMEA Docket 3984, Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah

I have reviewed the report of examination, Vitro Minerals Corporation, DMEA Docket 3984, dated March 13 and received in this office March 19. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The field examiners recommend that the request for DMEA assistance to explore for uranium on the Desert Queen property be denied because the area covered by the claims is either (1) unfavorable, (2) unknown geologically, or (3) too deep for an economic drilling program.

The Field Team report is well prepared and is an indication that considerable effort was expended on DMEA 3984. All pertinent points were thoroughly presented in such a manner as to preclude any questions by the reviewer.

We concur in the recommendation that the application be denied.

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

John E. Crawford
John E. Crawford

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

March 28, 1956

Memorandum

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

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Uranium Commodity Committee

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The Field Team report is well prepared and is an indication that considerable effort was expended on DMEA 3984. All pertinent points were thoroughly presented in such a manner as to preclude any questions by the reviewer.

We concur in the Recommendation that the application be denied.

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

John E. Crawford

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

March 28, 1956

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The field examiners recommend that the request for DMEA assistance to explore for uranium on the Desert Queen property be denied because the area covered by the claims is either (1) unfavorable, (2) unknown geologically, or (3) too deep for an economic drilling program.

The Field Team report is well prepared and is an indication that considerable effort was expended on DMEA 3984. All pertinent points were thoroughly presented in such a manner as to preclude any questions by the reviewer.

We concur in the Recommendation that the application be denied.

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

John E. Crawford

3/20/56 dgm

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

RECEIVED MAR 15 1956

March 13, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination and Supplemental Report, DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah

Enclosed are the original and three copies of a joint engineering and geologic report on the subject property. Also enclosed are the original and three copies of a supplemental engineering report in which a limited program of exploration on the Deep group of claims is outlined.

The field examiners conclude that exploration is not warranted, and they recommend that the application be denied. We concur the denial of the application may well be justified, particularly in view of the recent denial of the Sharples Oil Corporation application, DMEA Docket 3871, whose claims lie immediately north of the Vitro property.

In the event that you do not concur in our recommendation of denial of this application, a supplemental report is enclosed outlining a modest exploration program to investigate the ore potential in the vicinity of the two best holes drilled by the applicant on the Deep claim group.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
MAR 15 1956

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

Date Rec

MAR 12 1956

March 9, 1956

BUREAU OF MINES
Denver, Colorado

Memorandum

TRANSMITTED
MAR 13 1956

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw
E. N. Harshman

Subject: DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah

Enclosed are the original and nine copies of a joint engineering and geologic report by Carl Belser, Bureau of Mines, and Henry B. Dyer, Geological Survey, covering their examination of the subject property. Also are enclosed the original and nine copies of a supplemental report by Carl Belser in which a limited program of exploration on the Deep group of claims is outlined.

Vitro Minerals Corporation proposes to explore their Desert Queen and State Lease properties by a program of drilling comprising 39 holes at an estimated cost of $46,527.00. For reasons given in the report the examiners conclude that exploration is not warranted and they recommend that the application for exploration assistance be denied.

Denial of the application may well be justified, particularly in view of the recent denial of the Sharples Oil Corporation application, DMEA Docket 3871, whose claims lie immediately north of the Vitro property. Most of the reasons for denial given in the report seem valid. We do not, however, concur with the opinion that approval of exploration should be based on an expected 100 percent payback of the Government's investment.

We concur with the recommendation for denial but have included a supplemental report outlining a modest exploration program to investigate the ore potential in the vicinity of the two best holes drilled by the applicant on the Deep claim group.

Scott W. Hazen Jr.
for John F. Shaw
Superintendent of the Denver Experiment Station

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(date)

E. N. Harshman
E. N. Harshman
Member, Field Team

Enclosures (20)
ENHarshman:mp

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
MAR 15 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED

MAR 13 1956

DMEA 3984

Desert Queen Mine and Utah State Lease 5059

Vitro Minerals Corporation

Emery County, Utah

Uranium

Joint Engineering and Geological Report

by

Henry B. Dyer, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

March 8, 1956

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(date)

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ILLUSTRATIONS

Figure — Follows page

1. Location map, Desert Queen mine and Utah State Lease 5059, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984 2

2. Geologic map showing existing drill holes and proposed drill holes, Vitro Metals property, Emery County, Utah. DMEA 3984 22

2A. Claim map showing location of proposed drill holes, Desert Queen mine and Utah State Lease 5059, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984 22

DMEA 3984

DESERT QUEEN MINE AND UTAH STATE LEASE 5059
VITRO MINERALS CORPORATION
EMERY COUNTY, UTAH

INTRODUCTION AND SUMMARY

Vitro Minerals Corporation, 600 West 33rd South Street, Salt Lake City, Utah, made application for aid to explore for uranium ore on its Desert Queen property and Utah State Lease 5059. The applicant proposed 19,210 feet (39 holes) of drilling at a total estimated cost of $46,527.

The property, consisting of 81 unpatented mining claims and one section of school land, was examined on January 10, 1956. The total known production from these claims is 3.68 tons of ore averaging 0.28 percent U_3O_8.

The claims are about 13 air miles southwest of Green River, Utah. The San Rafael River flows just west of the property, and much of the Upper and Lower groups of claims (fig. 2) lie on Quaternary deposits which are 30 to 40 feet above the present river level. These terraces are bounded on the east by a belt of "bad land" topography carved in non-resistant shales. East of the bad land belt a bench is formed by resistant beds about 250 feet above the river level, and the Deep group of claims lies on this bench. The school section lies on a rolling terrain of the Mancos shale and is about 2 miles to the north of the Deep group (fig. 2).

The ore horizon beneath all four groups would be in the flat-dipping sandstone beds of the Salt Wash member of the Morrison formation.

The school section requires very deep drilling, and the charactor of the ore horizon is unknown; the Lower group has been adequately prospected; the drilling done on the Upper group was unfavorable; and the known ore bodies in the vicinity of the Deep group are small so that the chances of developing a substantial ore body there are remote.

The application was recommended for denial.

ACKNOWLEDGMENTS

Bruce Hanson accompanied the team during the examination and represented the applicant.

Isadore Million, A. E. C. geologist for the area, was consulted regarding the potentialities of the property. He concurs in the opinion that the ore potential of the property is not great.

Memorandums of John E. Crawford and W. P. Williams were found of material aid in making the examination.

LOCATION, TOPOGRAPHY, AND CLIMATE

The property submitted in the application consists of 81 unpatented claims in sections 10, 11, 12, 13, 14, 15, and 22, T. 22 S., R. 14 E., and school section 36, T. 21 S., R. 14 E., S. L. M., Emery County, Utah.

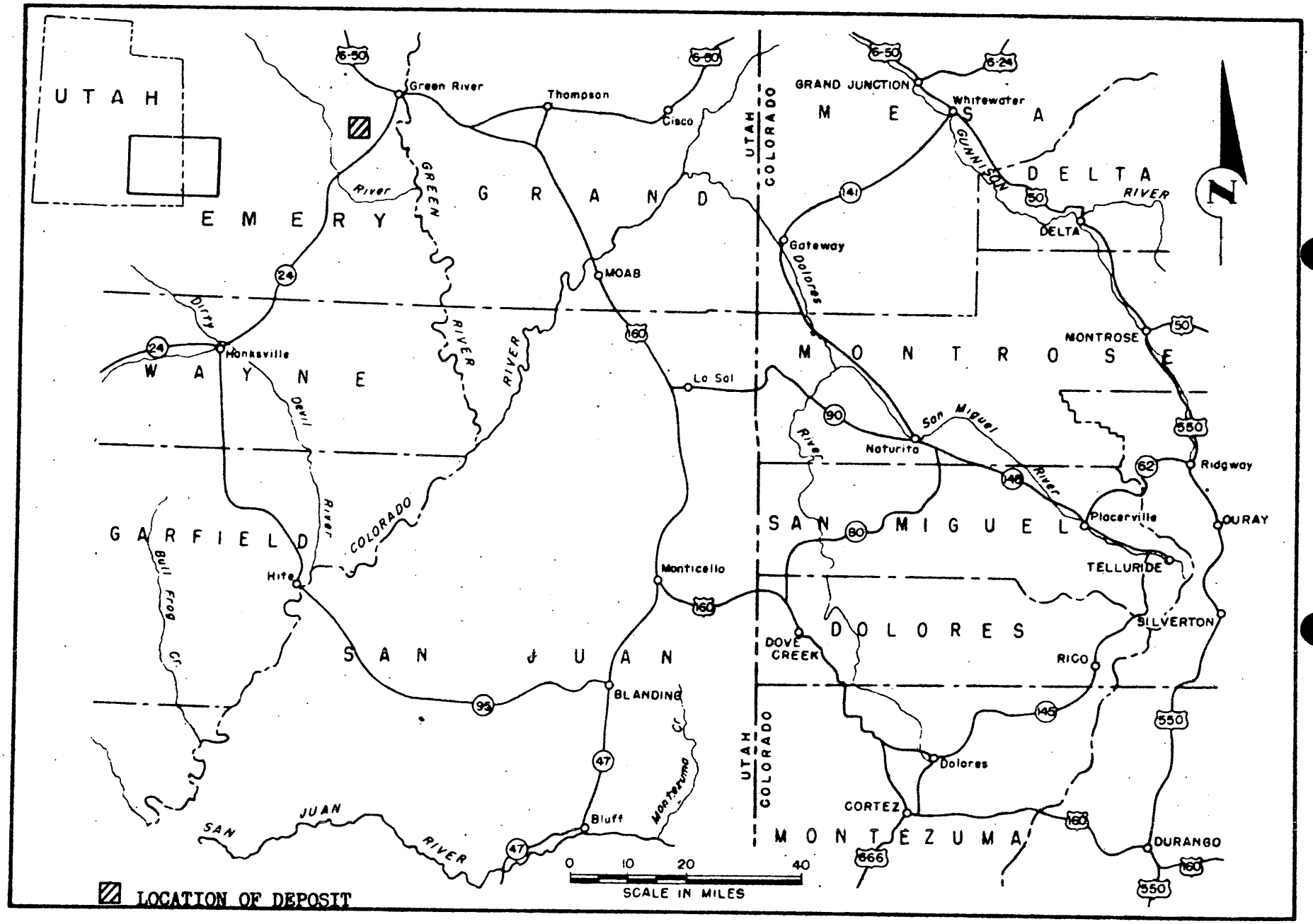


FIGURE 1 - LOCATION MAP, DESERT QUEEN MINE AND UTAH STATE LEASE 5059, VITRO MINERALS CORPORATION, EMERY COUNTY, UTAH. DMEA 3984

The school section is 2 miles north of the other claims and is on slightly rolling land. The Lower, Upper, and Deep claims are on a gently east-dipping plateau cut by numerous gulches which head near the north boundary of the property. Altitudes range from 3,700 to 4,400, rainfall is light, and operations can be carried on throughout the year. Poor dirt roads from 2 to 5 miles long connect the south end and the north side of the claim group with State Highway 24 from whence it is from 7 to 10 miles northeasterly to Green River. Labor, timber, and supplies can be obtained at Green River. The nearest railroad is the Denver and Rio Grande Western at Green River where an ore-buying depot is maintained.

Water for drilling or mining purposes can be trucked from the San Rafael River, a distance of from 2 to 8 miles. Water for domestic use can be obtained in the town of Green River.

HISTORY AND PRODUCTION

The area became of interest following the discovery of uranium ore in section 22, T. 21 S., R. 14 E., and the Uranium Queen claims were located in 1954. The school section lease was acquired on September 17, 1954, and on October 21, 1954, a 51 percent working interest in the claims and the school section lease was transferred from the Desert Queen Uranium Company to the Vitro Minerals Corporation.

The outcrop on the rim on Long Shot No. 3 claim was sparingly worked for uranium in the early 1900's, and the ground behind the rim has been wagon-drilled for a maximum length of 550 feet and a maximum width of 175 feet with not less than 70 wagon-drill holes. The Uranium Queen Vanadium Company drilled 14 non-core holes, 6 core holes and 14 wagon-drill holes scattered over the 81 claims.

Total recorded production amounts to 3.678 tons of ore averaging 0.28 percent U_3O_8 and 0.25 percent V_2O_5 taken from a small surface working on the Long Shot No. 3 claim.

OWNERSHIP AND EXTENT

The property consists of 81 unpatented claims and a school section. The following is taken from the records of the County Recorder of Emery County, Utah:

Claim	Book	Page	Date Located	Locator	Amended Book	Page	Date
Long Shot No. 2	J-21	530	5/17/54	Wilford Heath et al.	J-70	282	11/3/53
Long Shot No. 3	"	531	"	" " "	J-70	283	"
Hard Luck	"	532	"	" " "	J-70	281	"
Desert Queen No. 1	J-17	563	3/4/54	Lee Diamanti			
" " " 2	"	564	"	" "			
" " " 3	"	565	"	" "			
" " " 4	J-62	113	11/15/54	" "			
" " " 5	J-48	299	3/4/54	" "			
" " " 5A	J-63	158	10/18/54	" " et al.			
" " " 6	J-18	300	3/4/54	" " et al.			
" " " 7	"	301	"	" " et al.			
" " " 8	J-17	560	"	Lee Diamanti			
" " " 8	J-18	302	"	Frank Pugliese, Jr.			
" " " 9	"	303	"	Jim Pugliese			
" " " 10	"	304	"	John Diamanti			
" " " 11	"	305	"	" "			
" " " 12	"	306	"	" "			
" " " 12A	J-63	157	10/15/54	L. Diamanti & R. Ossani			
" " " 13	J-40	114	8/16/54	" " "			
" " " 14	"	115	"	" " "			
" " " 15	"	116	"	" " "			
" " " 15A	J-63	159	10/18/54	L. Diamanti & R. Ossani			
" " " 16	J-51	439	9/10/54	" " "			
" " " 17	"	440	"	" " "			
" " " 18	"	441	"	" " "			
" " " 19	"	442	"	" " "			
" " " 20	"	443	"	" " "			
" " " 21	"	444	"	" " "			
" " " 22	"	445	"	" " "			
" " " 23	"	446	"	" " "			
" " " 24	"	447	"	" " "			
" " " 25	"	448	"	" " "			

Claim	Book	Page	Date Located	Locator
Desert Queen No. 26	J-51	449	9/10/54	L. Diamanti & R. Ossani
" " " 27	"	450	"	" " "
" " " 28	"	451	"	" " "
" " " 29	"	452	"	" " "
" " " 30	"	453	"	" " "
" " " 31	"	454	"	" " "
" " " 32	"	455	"	" " "
" " " 33	"	456	"	" " "
" " " 34	"	457	"	" " "
" " " 35	"	458	"	" " "
" " " 36	"	459	"	" " "
" " " 37	"	460	"	" " "
" " " 38	"	461	"	" " "
" " " 39	"	462	"	" " "
" " " 40	"	463	"	" " "
" " " 41	"	464	"	" " "
" " " 42	"	465	"	" " "
" " " 43	"	466	"	" " "
" " " 44	"	467	"	" " "
" " " 45	"	468	"	" " "
" " " 46	"	469	"	" " "
" " " 47	"	470	"	" " "
" " " 48	"	471	"	" " "
" " " 49	"	472	"	" " "
" " " 50	J-53	82	9/12/54	" " "
" " " 51	"	83	"	" " "
" " " 52	"	84	"	" " "
" " " 53	"	85	"	" " "
" " " 54	"	86	"	" " "
" " " 55	"	87	"	" " "
" " " 56	"	88	"	" " "
" " " 57	"	89	"	" " "

Claim	Book	Page	Date Located	Locator
Desert Queen No. 58	J-53	90	9/12/54	L. Diamanti and R. Ossani
" " " 59	"	91	"	" " "
" " " 60	"	92	"	" " "
" " " 61	"	93	"	" " "
" " " 62	"	94	"	" " "
" " " 63	"	95	"	" " "
" " " 64	"	96	"	" " "
" " " 65	"	97	"	" " "
" " " 66	J-56	7	9/14/54	" " "
" " " 67	"	8	"	" " "
" " " 68	"	9	"	" " "
" " " 69	"	10	"	" " "
" " " 70	"	11	"	" " "
" " " 71	"	12	"	" " "
" " " 72	J-62	114	10/10/54	" " "
" " " 73	"	115	"	" " "
" " " 74	"	116	"	" " "
" " " 75	"	117	"	" " "

The above claims were transferred from the Desert Queen Mining Company to the Desert Queen Uranium Company on October 11, 1955 and the transaction is recorded in Book J-108, p. 572-575.

Utah State Land Lease No. 5059 (section 36, T. 21 S., R. 14 E., S. L. M.), to Vitro Uranium Company, dated September 17, 1954, was signed October 8, 1954.

An agreement between Vitro Minerals Corporation and the Desert Queen Uranium Company by which the Vitro Minerals Corporation would receive a 51 percent interest was signed October 21, 1954.

The claims, with the exception of the transfer from the original locators to the Desert Queen Mining Company, seems to be in order. Conflicts may occur on the Lower group (Longshots No. 2 and No. 3, Hard Luck, and Desert Queen's No. 1, 2, 3, and 4) where old stakes, dating back to 1948 were noticed.

PRESENT STATUS

Exploration and development

The only exploration work on the claims consists of five short adits driven into the face of the rim on Long Shot No. 3 claim, 70 wagon-drill holes just behind this rim, and 14 non-core holes, 6 core holes, and 14 wagon-drill holes scattered over the claim group. The 14 non-core and 6 core holes contained a total of 7,629 feet of drilling and the 14 wagon-drill holes averaged 101 feet in depth.

Mining and milling equipment and other facilities

There is no mining or milling equipment on the property. Facilities consist of a small amount of poor access roads.

GEOLOGY AND ORE DEPOSITS

Regional geology

The major physiographic and structural feature of the region is the easterly dipping escarpment of the San Rafael Swell about 4 miles west of the claims. The older rocks exposed in the escarpment dip 15° to 20° to the east but the dip flattens abruptly and averages about 1-1/2° on the claims. A few northwest-trending normal faults having little vertical displacement cut the area.

Jurassic and Cretaceous sedimentary rocks outcrop on the claims. The thickness and lithology of the units are summarized in the following table:

Table 1. Geologic column of rocks exposed in the vicinity of the Desert Queen claims, Emery County, Utah.

	Thickness (feet)
Cretaceous system	
Mancos shale-Steel gray; regularly bedded, marine shale. Forms slopes.....	400+

	Thickness (feet)
Buckhorn conglomerate--Conglomeratic sandstone and variegated shale, probably equivalent to the Burro Canyon formation in western Colorado and eastern Utah, resistant sandstones form benches.....	50 to 150
Jurassic system	
Morrison formation	
Brushy Basin member--Variegated bentonitic shale with a few thin lenses of coarse-grained sandstone characterized by bad land slopes.....	350
Salt Wash Member--Lenticular sandstone and fine conglomerate lenses interbedded with red and green mudstones and siltstones makes prominent bench, ore bearing.....	250
Summerville formation-regularly bedded brown siltstones with much gypsum. (Base not exposed) Slope forming.....	150+

Geology of the ore deposits

Ore deposits in the area are confined to the Salt Wash member of the Morrison formation. The Salt Wash commonly consists of two or three thick sandstone lenses interbedded with red mudstone and siltstone. The ore occurs in the upper two sandstone lenses of the Salt Wash. Ore occurs as impregnations of uranium and vanadium minerals

in the sandstone and the ore bodies tend to be tabular in shape and roughly parallel to the bedding. Where the ore thickens abruptly the ore boundary cuts smoothly across the beds forming a "roll". Ore deposits tend to be rudely oval in plan and elongated parallel to the sedimentary structures.

The mineralogy of the ore is complex and the fine grain size of the ore minerals precludes positive identification except by X-ray or microscopic methods. The important recent ore discoveries have been in "black ores" which probably consist of uraninite (UO_2), coffinite (?) (a tetragonal uranium silicate), montrosite (VO,OH) and micaceous vanadium silicates. Where the ore is exposed to weathering it is oxidized to the familiar "carnotite type" ore. The grade of the ore does not seem to be greatly affected by oxidation but some supergene enrichment may have taken place.

The average grade of the ore produced from the Four Corners area north of the claims is about .34 percent U_3O_8 while V_2O_5 varies from 0.30 percent to 0.90 percent. The average gross value of the ore is just over $30 per ton without the initial production bonus or development allowance.

Ore deposits range in size from mineralized trees containing a few sacks of ore to complex, closely spaced groups of small ore bodies with intervening mineralized and barren rock. The larger ore bodies may contain 5,000 to 10,000 tons of ore. Smaller ore

bodies are more common in the area, and rim exposures of the Salt Wash are dotted with small pits from which only a few tons have been mined.

Ore guides

Geologic guides to ore are widely used and recognized (Wier, D. B., 1952). Relatively thick gray to white sandstone associated with green mudstone is favorable for the occurrence of ore while thin brown sandstones associated with the red mudstones seldom contain ore deposits. The guides may be used to limit the intensive drilling to the more favorable areas.

EXPLORATION AND ORE POTENTIALS

Outcrop data and drilling data have been used to assess the favorability of the Desert Queen claims. The claims will be discussed as four separate groups since the drilling depths and topography differ from place to place.

Lower group

Vitro Minerals Corporation does not propose any drilling in the Lower group (fig. 2) and the exposures indicate that the group is unfavorable for the occurrence of economic deposits. The sandstone lenses are thin (10 to 25 feet) and bleaching is not pronounced. Many wagon-drill holes have been drilled on the group but no production has resulted.

School section 36

The geology of the ore horizon on the school section 36 (fig. 2) is unknown and no drill holes have penetrated the Salt Wash on the section.

Drilling depths would average around 1,000 feet. Since the ore potential of the area is unknown drilling the five holes proposed by the applicant would be in the nature of a prospecting venture. DMEA participation in the exploration of the school section does not seem warranted at this time.

Deep group

The geology of the Deep group is not well known and the relative favorability of the area remains a question. H. S. Johnson, U. S. Geological Survey has made a study of the area and his data indicates that a north-trending channel system might continue under the Deep group. This channel is known from an outcrop 4 miles to the south and it probably contains the large ore body at the Big Bend mine 3 miles south of the property.

The Deep group has been tested by ten 500- to 600-foot drill holes. Another hole, DR-5, was not deep enough to penetrate the Salt Wash. Seven of the holes penetrating the Salt Wash were non-core holes and favorability ratings based on logs of the cuttings may be misleading. The three remaining holes (DC-13, 14, 15) were at least partially cored. The drill holes have since caved and cannot be probed by Barnaby. The following table summarizes the results of the drilling on the Deep group.

Table 2. Summary of drilling on the Deep group, Desert Queen claims, Emery County, Utah. (Data from applicant's logs)

Drill hole	Depth to top of sandstone	Thickness of sandstone (feet)	Color of sandstone	Color of included mudstone	Thickness of bleaching	Carbon	Mineralization thickness in ft.	percent eU_3O_8	Rating (based on lithology)
DR-1	503	27	Wh	--	25	--	2.0	.20	Semifavorable
DR-2	72	30	Lt. Grn	--	--	--		None	Unfavorable
	118	46	Lt. Grn	--	--	--		None	Semifavorable?
	172	58	Wh	Red	--	--		None	Unfavorable
DR-8	465	50	Wh	--	--	--	1.0	.26	Favorable
DR-11	391	57	Lt. Brn	Red	--	--		None	Unfavorable
	453	34	Lt. Brn	--	--			None	Unfavorable
DR-12	495	73	Lt. Brn	--	--	--	1.2	.09	Favorable
DR-13	436	32	--	Red	0	--		None	Unfavorable
	496	30	Lt. Brn	--	0	--	4.7	.07	Semifavorable
DR-14	483	22	Lt. Brn	--	--	--		None	Unfavorable
DC-13	483	56	Wh	Grn	1	P		None	Favorable
DC-14	530	31	Gy	--	--	--		None	Unfavorable?
DC-15	490	< 30	Lt. Gy	Grn	--	Abt		Some	Favorable?

Explanation:

-- = not stated in log

? = Questionable ratings

Grn = Green Brn = Brown Lt = Light Gy = Gray
Wh = White P = Present Abt = Abundant

Four of the drill holes indicate favorable ground and three of the favorable holes are mineralized (two contain ore-grade material by U. S. G. S. standards). The mineralized material found is either too thin or too low grade to be commercial at the depths involved. The best hole (DR-1) is reported to have 2 feet of .20 percent eU_3O_8. This is marginal ore and the grade is below the average grade of that produced in the district. The mineralization is in a thin sand which suggests that it is not a large body.

The average size of the ore deposits in the district is fairly well established. Most of the Four Corners ore deposits in the area are between 5,000 and 10,000 tons and an exceptional deposit may contain 15,000 tons. The large ore deposit known south of the area is about 8,000 tons. The ore deposits present a target size of about 200 by 600 feet.

Vitro Minerals Corporation has proposed drilling 29 holes on the Deep group (fig. 2). Two of the holes would offset mineralized and ore holes on 500-foot centers, and four holes would offset Sharples Oil Company's reported ore hole (see DMEA docket 3871 report of examination, p. 7). The rest of the drill holes would be scattered over the ground on about 2000-foot centers and might succeed in outlining favorable ground.

Vitro Minerals Corporation's proposed drilling on the Deep group would be unlikely to succeed for two reasons: (1) The 500-foot offset could easily miss ore bodies similar in size to the largest presently known in the area. (2) The 2,000-foot spacing might miss fairly large

areas of favorable ground and would not provide engugh information to guide later drilling. The cost of a project which would adequately explore for deposits similar to those known in the area would be prohibitive. An adequate program might consist of a first phase of three east-west fences of holes on 500-foot centers with about 1,000 feet between the fences. This would require about 30 holes and cost about $33,000. Assuming the first phase outlined an area of favorable ground about 1,000 feet wide and 5,000 feet long, the second phase might consist of 17 east-west fences 300 feet apart with the holes in the fences spaced on 200-foot centers. The second phase would require about 85 holes and cost about $93,500. A third phase would be required to test the mineralized and ore holes of the second phase and might consist of 20 holes costing about $22,000. The project would cost about $150,000 and if successful, might find a deposit which contained ore having a gross value of $150,000 to $300,000.

Another possible program might consist of a 100-foot radius circle of six equally spaced holes around DR-1, DR-8, DR-12, and DR-13. This program would test the hypothesis that fairly large ore bodies exist on the claims. The second phase might consist of 12 holes intended to extend the deposit on a triangular grid. The second phase would cost $13,200 and might indicate 5,000 to 10,000 tons of ore. If it were successful the total cost would be about $40,000 or one-seventh of the gross value of the contained ore.

Some close spaced drilling has been done by Sharples Oil Co., in the bottom of the Wash which cuts across the southern part of the Upper group. Vitro Minerals Corporation proposes four holes on the Deep group to offset the Sharples Oil Co. drilling. The topography is rough and drill road preparation would be difficult if not impossible. If the results of the Sharples drilling were available some drilling might be justified but the lack of information coupled with the difficult topography make drilling these holes a prospecting venture.

None of the program is likely to repay DMEA's share of the exploration costs even if the program were successful. The ore bodies known in the area seem to be marginal at 200-foot depths and would not justify development costs at 500-foot depths. The erratic nature of the deposits make the tonnage estimations difficult, as well as incurring excessive mining costs. It is possible that ore bodies of larger size exist on the Desert Queen claims, but the thickness and grade shown in the logs do not support this hypothesis.

The favorability of the Deep group has not been thoroughly tested. Four holes indicate favorable ground, but most of the holes indicate unfavorable or semifavorable ground. Mineralized material is indicated by the logs, but it is marginal in grade and thickness. Vitro Minerals Corporation's proposed exploration could easily miss ore bodies and would not thoroughly test the ground while the cost of a thorough exploration program cannot be justified on the basis of present knowledge. A project limited to testing for extensions of the mineralized material around previous drill holes is the most attractive but it seems unlikely that

DMEA's cost would be repaid by the ore indicated by a successful program. Exploration on the Deep group does not appear warranted.

Upper group

The Upper group of claims has been tested by nine drill holes. The drilling is summarized in the following table.

Table 3. Summary of drilling on the Upper group, Desert Queen claims, Emery County, Utah (Data from applicant's logs)

Hole no.	Depth to top of sand	Sand thickness	Sand color	Color of included MS	Thickness of bleaching	Carbon	Mineralization	Rating
DR-3	81	79	Gy, Wh	--	20	--	None	Favorable?
	204	21	Gy	--	--	--	None	Unfavorable
DR-4	75	25	Wh	--	15	--	Trace?	Unfavorable
	225	35	Wh	--	--	--	Barren	Unfavorable?
DR-9	50	20	Wh	--	--	--	Barren	Unfavorable
	105	20	Wh	--	--	--	Barren	Unfavorable
	140	25	Wh	--	--	--	Barren	Unfavorable
	235	17	--	--	--	--	Barren	Unfavorable
DR-10	75	65	Wh	--	None	--	Barren	Unfavorable?
DC-8	No log submitted							
DC-9	No log submitted							
DC-10	88	25	Lt. Grn	--	--	--	Barren	Unfavorable
	128	49	--	--	12	P	Barren	Favorable?
	203	17	Gy	--	21	--	Barren	Unfavorable
DC-11	69	18	Wh	--	5	--	Trace	Semifavorable
	195	26	Gy	--	12	--	Barren	Unfavorable
DC-12	39	45	Lt. Grn	--	<4	--	Barren	Favorable

Explanation:

-- = not stated in log

? = Questionable ratings

Grn = Green Brn = Brown Lt. = Light Gy = Gray
Wh = White P = Present Abt = Abundant

Drilling on the Upper group has been largely unsuccessful. Three of the nine holes indicate favorable ground but no mineralization was found. No logs were available for two of the holes. The Upper group may be too far west to intersect the trend from the south and too far east to intersect the favorable trend from the Four Corners area north of the claims. Although the drilling depths are reasonable, the five proposed holes do not test much ground and the northwest trend of the claims makes it improbable that the drilling would intersect a north-trending area of favorable ground. It seems unlikely that the Upper group drilling would discover enough ore to warrant DMEA participation.

ORE RESERVES

There are no known ore reserves on the Desert Queen claims.

PROPOSED EXPLORATION WITH COSTS

The applicant proposed a program of 19,200 feet (39 holes) of drilling at a total estimated cost of $46,527. The costs were broken down as follows:

Individual contracts		
Bulldozing 100 hours at $14/hr	$ 1,400.00	
Drilling 19,200 feet at $1.91 a foot	36,727.00	
Total individual contracts		$38,127.00

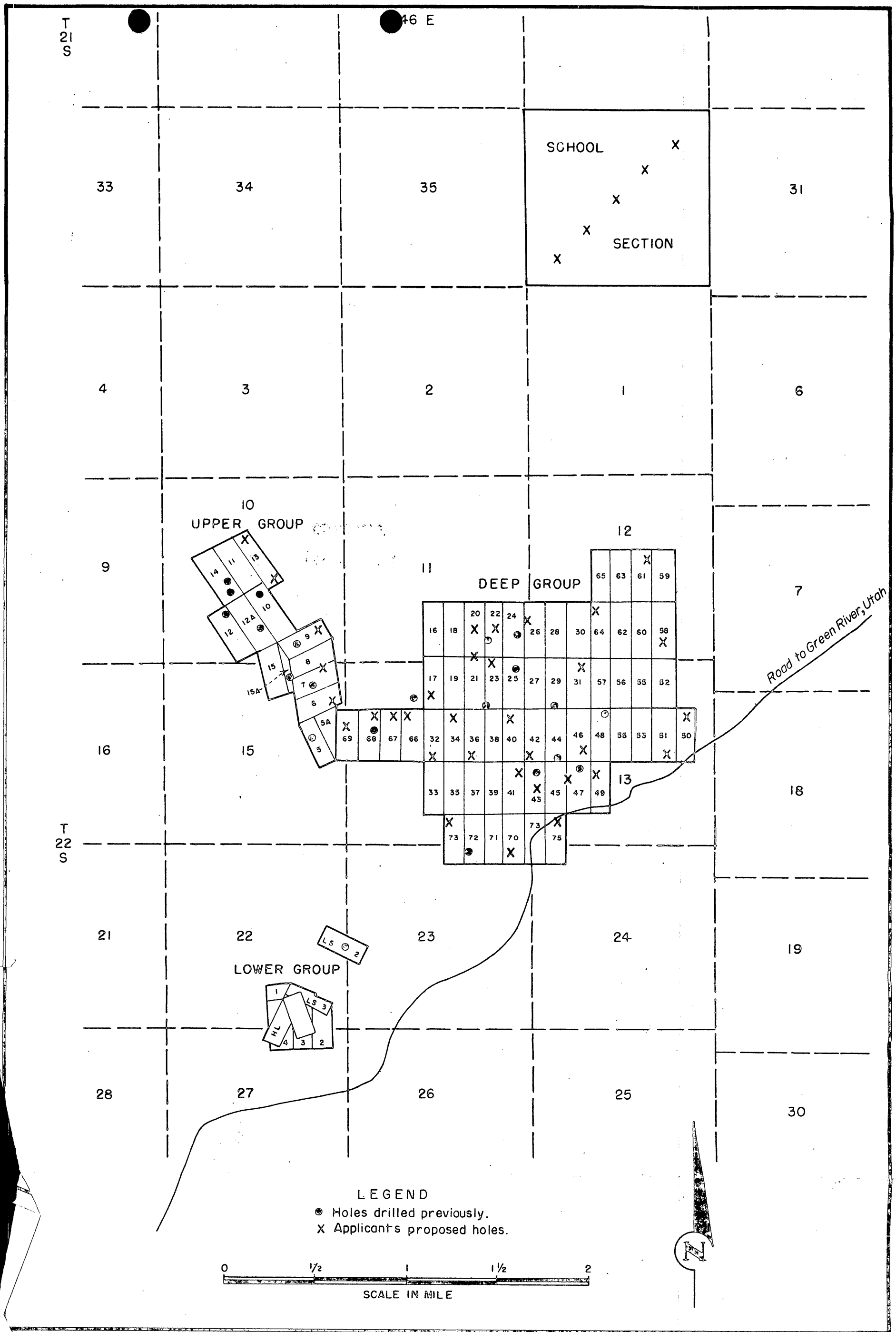
Labor and supervision			
Geologist, 6 months at $550/mo.	$ 3,300.00		
Supervisor, 6 months at $650/mo.	3,900.00		
Total labor and supervision		$ 7,200.00*	
Operating materials and supplies			
None			
Operating equipment (rental and repairs)			
1 pickup truck, gas, oil, and maintenance 6 months at $100/mo.	$ 600.00		
Total operating equipment		$ 600.00	
Rehabilitation and repairs			
None			
New buildings, improvements, and installations			
None			
Miscellaneous			
Analytical work 60 samples at $5 each	$ 300.00		
Accounting 6 months at $50/mo.	300.00		
Total miscellaneous		$ 600.00	
Total estimated cost for 19,200 feet of drilling			$46,527.00
Estimated cost per foot of drilling			$ 2.42

*erroneously shown in application as $5,400.00

CONCLUSIONS AND RECOMMENDATIONS

The Desert Queen property consist of 81 mining claims and a school section located in the Green River Desert about 13 miles southwest of the town of Green River, Utah. The area is underlain by the Salt Wash member of the Jurassic Morrison formation which is productive in the Four Corners area north of the claims.

The area covered by the claims can conveniently be discussed in four groups. The geology of the ore horizon on the school section is completely unknown and is a prospecting venture in very deep ground. The geology of the Lower group of claims is unfavorable for significant ore deposits although the drilling depths are shallow. The Upper group has been tested and is largely unfavorable. It lies parallel to the ore trends which makes successful exploration unlikely. The Deep group contains the best potential drilling area but the depth of drilling prohibits finding ore bodies at a reasonable cost. Because of these limitations, it is recommended that DMEA assistance be denied.



GURE 2A - CLAIM MAP SHOWING LOCATION OF PROPOSED DRILL HOLES, DESERT QUEEN MINE AND UTAH STATE LEASE 5059, VITRO MINERALS CORPORATION, EMERY COUNTY, UTAH. DMEA 3984

RECEIVED
MAR 1 5 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
MAR 15 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
MAR 13 1956

DMEA 3984

Desert Queen Mine and Utah State Lease 5059

Vitro Minerals Corporation

Emery County, Utah

Uranium

Supplemental Report

by

Carl Belser
Mining Engineer
Bureau of Mines

March 9, 1956

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(date)

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ILLUSTRATIONS

Figure	Follows page
1. Map of Deep Group showing location of holes drilled and proposed Stage I holes, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984	6

DMEA 3984

DESERT QUEEN MINE AND UTAH STATE LEASE 5059
VITRO MINERALS CORPORATION
EMERY COUNTY, UTAH

INTRODUCTION

The examining team has recommended that the application for aid in exploration of the Deep group be denied. A reappraisal of the report indicates that a modified project consisting of a two-stage drilling program centering around holes DR-1 and DR-8 may be justified.

Hole DR-1 was drilled to a depth of 600 feet and contained 2 feet of 0.20 percent U_3O_8 at a depth of 499 ~~basal~~ feet. Hole DR-8 was drilled to a depth of 550 feet and penetrated 1-foot of 0.26 percent U_3O_8 at a depth of 492 to 493 feet. The applicant determined the uranium content by probing.

Stage I would consist of offsetting each of these two holes with four additional holes, drilled, respectively, 150 feet to the north, south, east, and west (fig. 1). Stage II, requiring prior approval of the Field Team, would consist of not over eight additional offset holes to further delineate the extension of any ore body indicated by Stage I drilling. Stage II holes would be spaced on 100- to 200-foot centers.

ESTIMATED COST OF PLUG-BIT DRILLING

The individual contractor's drilling costs in the applicant's estimate appear to be fair and will be used. Stage I and II would have

approximately the same costs. The eight Stage I holes would require 4,400 feet of drilling of which 3,600 feet would be non-core drilling and 800 feet core drilling. The estimated costs follow:

Stage I

Individual contracts		
3,600 feet of non-core drilling at $1.41/foot	$ 5,076.00	
Bulldozing 18 hours at $12/hr.	216.00	
Total individual contracts		$ 5,292.00
Labor and supervision		
Geologist-engineer 1 month at $600/mo.	$ 600.00	
Total labor and supervision		$ 600.00
Operating materials and supplies		
None		
Operation equipment		
Pickup truck, gas, oil, and maintenance 1-1/2 month at $100/mo.	$ 150.00	
Total operation equipment		$ 150.00
Rehabilitation and repairs		
None		
New buildings, improvements, and installations		
None		

Miscellaneous

Accounting 1 month at $50/mo.	$ 50.00		
Compensation and liability insurance, and payroll taxes 7 percent of $650	45.50		
Total miscellaneous		$ 95.50	
Total estimated cost of 3,600 feet of plug-bit drilling			$ 6,137.50
Estimated cost per foot of plug-bit drilling			$ 1.70

ESTIMATED COST OF CORE DRILLING

Stage I

Individual contracts			
800 feet of core drilling at $4/ft.	$ 3,200.00		
Bulldozing 6 hours at $12/hr.	72.00		
Total individual contracts		$ 3,272.00	
Labor and supervision			
Geologist-engineer 1 month at $600/mo.	$ 600.00		
Total labor and supervision		$ 600.00	
Operating material and supplies			
80 core boxes at $1.20 each	$ 96.00		
Total operating materials and supplies		$ 96.00	
Operating equipment			
Pickup truck, gas, oil, and maintenance 1/2 month at $100/mo.	$ 50.00		
Total operating equipment		$ 50.00	

Rehabilitation and repairs

None

New buildings, improvements, and installations

None

Miscellaneous

Accounting 1 month at $50/mo.	$ 50.00	
Compensation and liability insurance, and payroll taxes 7 percent of $650	45.50	
Total miscellaneous		$ 95.50

Total estimated cost for 800 feet of core drilling	$ 4,113.50
Estimated cost per foot of core drilling	$ 5.14

SUMMARY COST OF PROJECT

Stage I

3,600 feet of non-core drilling at 1.70/foot	$ 6,120.00	
800 feet of core drilling at $5.14/foot	4,112.00	
12 chemical analyses at $5 each	60.00	
Estimated total cost of Stage I drilling		$10,292.00

Stage II

3,600 feet of non-core drilling at $1.70/foot	$ 6,120.00	
800 feet of core drilling at $5.14/foot	4,112.00	
12 chemical analyses at $5 each	60.00	
Estimated total cost of Stage II drilling		$10,292.00

Total estimated cost of project	$20,584.00
Government participation 75 percent, or	$15,438.00
Time for completion	4 months

RECOMMENDATIONS

Stage I consists of eight holes (4,400 feet of drilling). Four of these holes are to be spaced 150 feet, respectively, north, south, east, and west of drill hole DR-1 and the other four holes to be spaced 150 feet, respectively, north, south, east, and west of hole DR-8, as shown on figure 1.

Stage II

Stage II shall consist of eight offset holes on 100- to 200-foot centers to further delineate ore found by Stage I drilling. Stage II drilling will require prior approval of the Field Team.

All holes drilled in either Stage I or Stage II shall be cored the last 100 feet (through the ore zone in the Salt Wash member of the Morrison formation).

A short-form contract or the following contract is suggested:

Stage I

3,600 feet non-core drilling at $1.41/foot	$5,076.00	
800 feet core drilling at $4/foot	3,200.00	
Bulldozing 24 hours at $12/hr.	288.00	
Chemical assays, 12 at $5 each	60.00	
Incidental expense 4,400 feet at 38¢/foot	1,672.00	
Total Stage I		$10,296.00

Stage II

3,600 feet non-core drilling at $1.41/foot	$5,076.00	
800 feet core drilling at $4/foot	3,200.00	
Bulldozing 24 hours at $12/hr.	288.00	
Chemical assays, 12 at $5 each	60.00	
Incidental expense 4,400 feet at 38¢/foot	1,672.00	
Total Stage II		$10,296.00

Total cost of project	$20,592.00
Government participation 75 percent, or	$15,444.00
Time for completion	4 months

Incidental expense to include core boxes, supervision, accounting, pickup and insurance.

3-16-56

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

March 13, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
MAR 15 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination and Supplemental Report, DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah

Enclosed are the original and three copies of a joint engineering and geologic report on the subject property. Also enclosed are the original and three copies of a supplemental engineering report in which a limited program of exploration on the Deep group of claims is outlined.

The field examiners conclude that exploration is not warranted, and they recommend that the application be denied. We concur the denial of the application may well be justified, particularly in view of the recent denial of the Sharples Oil Corporation application, DMEA Docket 3871, whose claims lie immediately north of the Vitro property.

In the event that you do not concur in our recommendation of denial of this application, a supplemental report is enclosed outlining a modest exploration program to investigate the ore potential in the vicinity of the two best holes drilled by the applicant on the Deep claim group.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(date)

IN REPLY REFER TO:
DMEA
Date Rec'd.
MAR 12 1956
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

March 9, 1956

RECEIVED
MAR 15 1956
TRANSMITTED
MAR 13 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw
E. N. Harshman

Subject: DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease 5059, Emery County, Utah

Enclosed are the original and nine copies of a joint engineering and geologic report by Carl Belser, Bureau of Mines, and Henry B. Dyer, Geological Survey, covering their examination of the subject property. Also are enclosed the original and nine copies of a supplemental report by Carl Belser in which a limited program of exploration on the Deep group of claims is outlined.

Vitro Minerals Corporation proposes to explore their Desert Queen and State Lease properties by a program of drilling comprising 39 holes at an estimated cost of $46,527.00. For reasons given in the report the examiners conclude that exploration is not warranted and they recommend that the application for exploration assistance be denied.

Denial of the application may well be justified, particularly in view of the recent denial of the Sharples Oil Corporation application, DMEA Docket 3871, whose claims lie immediately north of the Vitro property. Most of the reasons for denial given in the report seem valid. We do not, however, concur with the opinion that approval of exploration should be based on an expected 100 percent payback of the Government's investment.

We concur with the recommendation for denial but have included a supplemental report outlining a modest exploration program to investigate the ore potential in the vicinity of the two best holes drilled by the applicant on the Deep claim group.

Scott W. Hazen Jr.
for John F. Shaw
Superintendent of the Denver Experiment Station

Review Board by
DMEA OPERATIONS
3-19-56

E. N. Harshman
E. N. Harshman
Member, Field Team

Enclosures (20)
ENHarshman:mp

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
MAR 1 8 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
MAR 1 5 1956

DMEA 3984

Desert Queen Mine and Utah State Lease 5059

Vitro Minerals Corporation

Emery County, Utah

Uranium

Joint Engineering and Geological Report

by

Henry B. Dyer, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

March 8, 1956

Reviewed by
DMEA CREDITING COMMITTEE
3-19-56

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ILLUSTRATIONS

Figure — Follows page

1. Location map, Desert Queen mine and Utah State Lease 5059, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984 2

2. Geologic map showing existing drill holes and proposed drill holes, Vitro Metals property, Emery County, Utah. DMEA 3984 22

2A. Claim map showing location of proposed drill holes, Desert Queen mine and Utah State Lease 5059, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984 22

RECEIVED
MAR 13 1956

DMEA 3984

DESERT QUEEN MINE AND UTAH STATE LEASE 5059
VITRO MINERALS CORPORATION
EMERY COUNTY, UTAH

INTRODUCTION AND SUMMARY

Vitro Minerals Corporation, 600 West 33rd South Street, Salt Lake City, Utah, made application for aid to explore for uranium ore on its Desert Queen property and Utah State Lease 5059. The applicant proposed 19,210 feet (39 holes) of drilling at a total estimated cost of $46,527.

The property, consisting of 81 unpatented mining claims and one section of school land, was examined on January 10, 1956. The total known production from these claims is 3.68 tons of ore averaging 0.28 percent U_3O_8.

The claims are about 13 air miles southwest of Green River, Utah. The San Rafael River flows just west of the property, and much of the Upper and Lower groups of claims (fig. 2) lie on Quaternary deposits which are 30 to 40 feet above the present river level. These terraces are bounded on the east by a belt of "bad land" topography carved in non-resistant shales. East of the bad land belt a bench is formed by resistant beds about 250 feet above the river level, and the Deep group of claims lies on this bench. The school section lies on a rolling terrain of the Mancos shale and is about 2 miles to the north of the Deep group (fig. 2).

The ore horizon beneath all four groups would be in the flat-dipping sandstone beds of the Salt Wash member of the Morrison formation.

The school section requires very deep drilling, and the character of the ore horizon is unknown; the Lower group has been adequately prospected; the drilling done on the Upper group was unfavorable; and the known ore bodies in the vicinity of the Deep group are small so that the chances of developing a substantial ore body there are remote.

The application was recommended for denial.

ACKNOWLEDGMENTS

Bruce Hanson accompanied the team during the examination and represented the applicant.

Isadore Million, A. E. C. geologist for the area, was consulted regarding the potentialities of the property. He concurs in the opinion that the ore potential of the property is not great.

Memorandums of John E. Crawford and W. P. Williams were found of material aid in making the examination.

LOCATION, TOPOGRAPHY, AND CLIMATE

The property submitted in the application consists of 81 unpatented claims in sections 10, 11, 12, 13, 14, 15, and 22, T. 22 S., R. 14 E., and school section 36, T. 21 S., R. 14 E., S. L. M., Emery County, Utah.

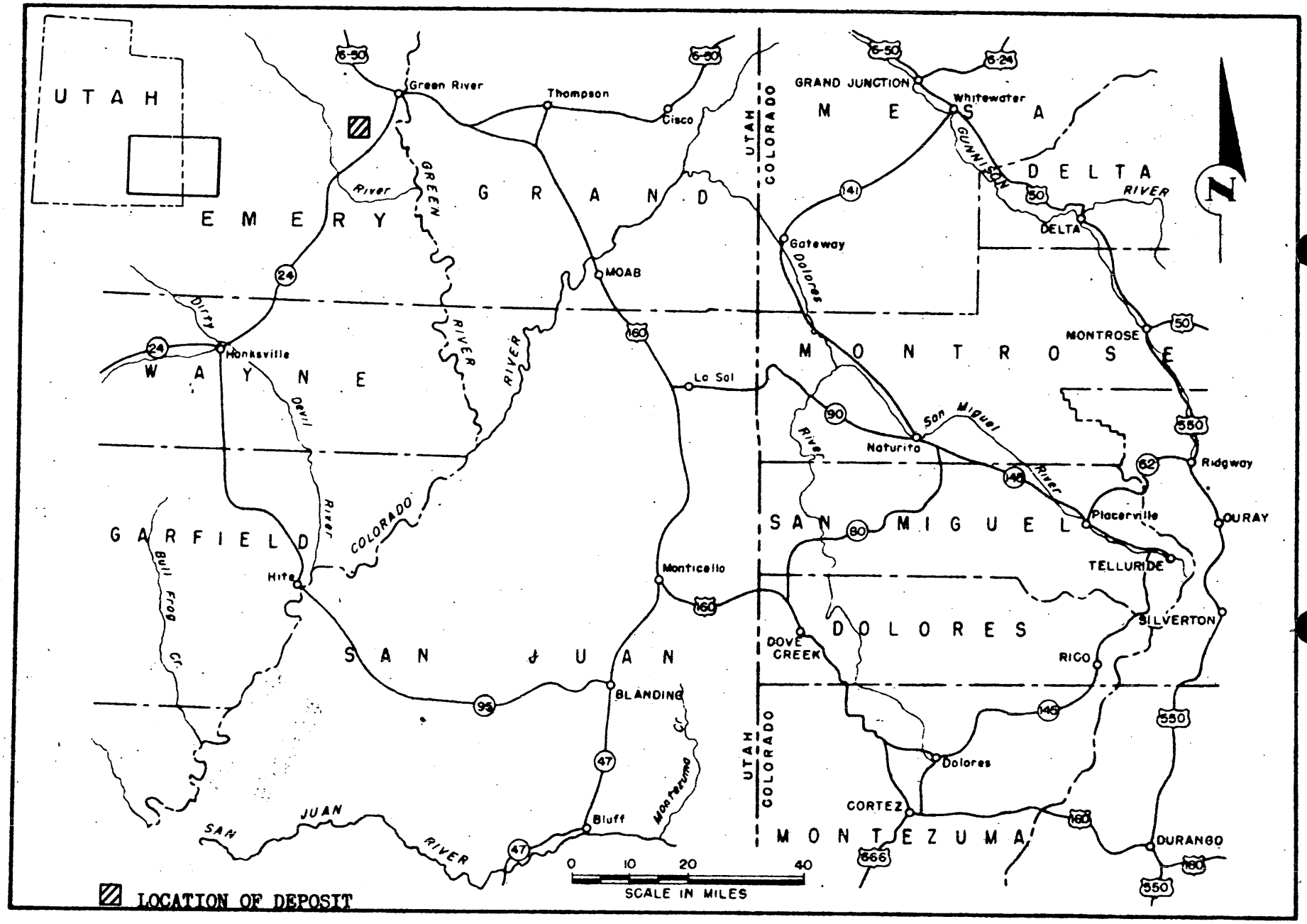

FIGURE 1 - LOCATION MAP, DESERT QUEEN MINE AND UTAH STATE LEASE 5059, VITRO MINERALS CORPORATION, EMERY COUNTY, UTAH. DMEA 3984

The school section is 2 miles north of the other claims and is on slightly rolling land. The Lower, Upper, and Deep claims are on a gently east-dipping plateau cut by numerous gulches which head near the north boundary of the property. Altitudes range from 3,700 to 4,400, rainfall is light, and operations can be carried on throughout the year. Poor dirt roads from 2 to 5 miles long connect the south end and the north side of the claim group with State Highway 24 from whence it is from 7 to 10 miles northeasterly to Green River. Labor, timber, and supplies can be obtained at Green River. The nearest railroad is the Denver and Rio Grande Western at Green River where an ore-buying depot is maintained.

Water for drilling or mining purposes can be trucked from the San Rafael River, a distance of from 2 to 8 miles. Water for domestic use can be obtained in the town of Green River.

HISTORY AND PRODUCTION

The area became of interest following the discovery of uranium ore in section 22, T. 21 S., R. 14 E., and the Uranium Queen claims were located in 1954. The school section lease was acquired on September 17, 1954, and on October 21, 1954, a 51 percent working interest in the claims and the school section lease was transferred from the Desert Queen Uranium Company to the Vitro Minerals Corporation.

The outcrop on the rim on Long Shot No. 3 claim was sparingly worked for uranium in the early 1900's, and the ground behind the rim has been wagon-drilled for a maximum length of 550 feet and a maximum width of 175 feet with not less than 70 wagon-drill holes. The Uranium Queen Vanadium Company drilled 14 non-core holes, 6 core holes and 14 wagon-drill holes scattered over the 81 claims.

Total recorded production amounts to 3.678 tons of ore averaging 0.28 percent U_3O_8 and 0.25 percent V_2O_5 taken from a small surface working on the Long Shot No. 3 claim.

OWNERSHIP AND EXTENT

The property consists of 81 unpatented claims and a school section. The following is taken from the records of the County Recorder of Emery County, Utah:

Claim	Book	Page	Date Located	Locator	Amended Book	Page	Date
Long Shot No. 2	J-21	530	5/17/54	Wilford Heath et al.	J-70	282	11/3/53
Long Shot No. 3	"	531	"	" " "	J-70	283	"
Hard Luck	"	532	"	" " "	J-70	281	"
Desert Queen No. 1	J-17	563	3/4/54	Lee Diamanti			
" " " 2	"	564	"	" "			
" " " 3	"	565	"	" "			
" " " 4	J-62	113	11/15/54	" "			
" " " 5	J-48	299	3/4/54	" "			
" " " 5A	J-63	158	10/18/54	" " et al.			
" " " 6	J-18	300	3/4/54	" " et al.			
" " " 7	"	301	"	" " et al.			
" " " 8	J-17	560	"	Lee Diamanti			
" " " 8	J-18	302	"	Frank Pugliese, Jr.			
" " " 9	"	303	"	Jim Pugliese			
" " " 10	"	304	"	John Diamanti			
" " " 11	"	305	"	" "			
" " " 12	"	306	"	" "			
" " " 12A	J-63	157	10/15/54	L. Diamanti & R. Ossani			
" " " 13	J-40	114	8/16/54	" " "			
" " " 14	"	115	"	" " "			
" " " 15	"	116	"	" " "			
" " " 15A	J-63	159	10/18/54	L. Diamanti & R. Ossani			
" " " 16	J-51	439	9/10/54	" " "			
" " " 17	"	440	"	" " "			
" " " 18	"	441	"	" " "			
" " " 19	"	442	"	" " "			
" " " 20	"	443	"	" " "			
" " " 21	"	444	"	" " "			
" " " 22	"	445	"	" " "			
" " " 23	"	446	"	" " "			
" " " 24	"	447	"	" " "			
" " " 25	"	448	"	" " "			

Claim	No.	Book	Page	Date Located	Locator
Desert Queen No.	26	J-51	449	9/10/54	L. Diamanti & R. Ossani
" " "	27	"	450	"	" " "
" " "	28	"	451	"	" " "
" " "	29	"	452	"	" " "
" " "	30	"	453	"	" " "
" " "	31	"	454	"	" " "
" " "	32	"	455	"	" " "
" " "	33	"	456	"	" " "
" " "	34	"	457	"	" " "
" " "	35	"	458	"	" " "
" " "	36	"	459	"	" " "
" " "	37	"	460	"	" " "
" " "	38	"	461	"	" " "
" " "	39	"	462	"	" " "
" " "	40	"	463	"	" " "
" " "	41	"	464	"	" " "
" " "	42	"	465	"	" " "
" " "	43	"	466	"	" " "
" " "	44	"	467	"	" " "
" " "	45	"	468	"	" " "
" " "	46	"	469	"	" " "
" " "	47	"	470	"	" " "
" " "	48	"	471	"	" " "
" " "	49	"	472	"	" " "
" " "	50	J-53	82	9/12/54	" " "
" " "	51	"	83	"	" " "
" " "	52	"	84	"	" " "
" " "	53	"	85	"	" " "
" " "	54	"	86	"	" " "
" " "	55	"	87	"	" " "
" " "	56	"	88	"	" " "
" " "	57	"	89	"	" " "

Claim	Book	Page	Date Located	Locator
Desert Queen No. 58	J-53	90	9/12/54	L. Diamanti and R. Ossani
" " " 59	"	91	"	" " "
" " " 60	"	92	"	" " "
" " " 61	"	93	"	" " "
" " " 62	"	94	"	" " "
" " " 63	"	95	"	" " "
" " " 64	"	96	"	" " "
" " " 65	"	97	"	" " "
" " " 66	J-56	7	9/14/54	" " "
" " " 67	"	8	"	" " "
" " " 68	"	9	"	" " "
" " " 69	"	10	"	" " "
" " " 70	"	11	"	" " "
" " " 71	"	12	"	" " "
" " " 72	J-62	114	10/10/54	" " "
" " " 73	"	115	"	" " "
" " " 74	"	116	"	" " "
" " " 75	"	117	"	" " "

The above claims were transferred from the Desert Queen Mining Company to the Desert Queen Uranium Company on October 11, 1955 and the transaction is recorded in Book J-108, p. 572-575.

Utah State Land Lease No. 5059 (section 36, T. 21 S., R. 14 E., S. L. M.), to Vitro Uranium Company, dated September 17, 1954, was signed October 8, 1954.

An agreement between Vitro Minerals Corporation and the Desert Queen Uranium Company by which the Vitro Minerals Corporation would receive a 51 percent interest was signed October 21, 1954.

The claims, with the exception of the transfer from the original locators to the Desert Queen Mining Company, seems to be in order. Conflicts may occur on the Lower group (Longshots No. 2 and No. 3, Hard Luck, and Desert Queen's No. 1, 2, 3, and 4) where old stakes, dating back to 1948 were noticed.

PRESENT STATUS

Exploration and development

The only exploration work on the claims consists of five short adits driven into the face of the rim on Long Shot No. 3 claim, 70 wagon-drill holes just behind this rim, and 14 non-core holes, 6 core holes, and 14 wagon-drill holes scattered over the claim group. The 14 non-core and 6 core holes contained a total of 7,629 feet of drilling and the 14 wagon-drill holes averaged 101 feet in depth.

Mining and milling equipment and other facilities

There is no mining or milling equipment on the property. Facilities consist of a small amount of poor access roads.

GEOLOGY AND ORE DEPOSITS

Regional geology

The major physiographic and structural feature of the region is the easterly dipping escarpment of the San Rafael Swell about 4 miles west of the claims. The older rocks exposed in the escarpment dip 15° to 20° to the east but the dip flattens abruptly and averages about 1-1/2° on the claims. A few northwest-trending normal faults having little vertical displacement cut the area.

Jurassic and Cretaceous sedimentary rocks outcrop on the claims. The thickness and lithology of the units are summarized in the following table:

Table 1. Geologic column of rocks exposed in the vicinity of the Desert Queen claims, Emery County, Utah.

	Thickness (feet)
Cretaceous system	
Mancos shale-Steel gray; regularly bedded, marine shale. Forms slopes.....	400+

	Thickness (feet)
Buckhorn conglomerate--Conglomeratic sandstone and variegated shale, probably equivalent to the Burro Canyon formation in western Colorado and eastern Utah, resistant sandstones form benches.....	50 to 150
Jurassic system	
Morrison formation	
Brushy Basin member--Variegated bentonitic shale with a few thin lenses of coarse-grained sandstone characterized by bad land slopes.....	350
Salt Wash Member--Lenticular sandstone and fine conglomerate lenses interbedded with red and green mudstones and siltstones makes prominent bench, ore bearing.....	250
Summerville formation-regularly bedded brown siltstones with much gypsum. (Base not exposed) Slope forming.....	150+

Geology of the ore deposits

Ore deposits in the area are confined to the Salt Wash member of the Morrison formation. The Salt Wash commonly consists of two or three thick sandstone lenses interbedded with red mudstone and siltstone. The ore occurs in the upper two sandstone lenses of the Salt Wash. Ore occurs as impregnations of uranium and vanadium minerals

in the sandstone and the ore bodies tend to be tabular in shape and roughly parallel to the bedding. Where the ore thickens abruptly the ore boundary cuts smoothly across the beds forming a "roll". Ore deposits tend to be rudely oval in plan and elongated parallel to the sedimentary structures.

The mineralogy of the ore is complex and the fine grain size of the ore minerals precludes positive identification except by X-ray or microscopic methods. The important recent ore discoveries have been in "black ores" which probably consist of uraninite (UO_2), coffinite (?) (a tetragonal uranium silicate), montrosite (VO,OH) and micaceous vanadium silicates. Where the ore is exposed to weathering it is oxidized to the familiar "carnotite type" ore. The grade of the ore does not seem to be greatly affected by oxidation but some supergene enrichment may have taken place.

The average grade of the ore produced from the Four Corners area north of the claims is about .34 percent U_3O_8 while V_2O_5 varies from 0.30 percent to 0.90 percent. The average gross value of the ore is just over $30 per ton without the initial production bonus or development allowance.

Ore deposits range in size from mineralized trees containing a few sacks of ore to complex, closely spaced groups of small ore bodies with intervening mineralized and barren rock. The larger ore bodies may contain 5,000 to 10,000 tons of ore. Smaller ore

bodies are more common in the area, and rim exposures of the Salt Wash are dotted with small pits from which only a few tons have been mined.

Ore guides

Geologic guides to ore are widely used and recognized (Wier, D. B., 1952). Relatively thick gray to white sandstone associated with green mudstone is favorable for the occurrence of ore while thin brown sandstones associated with the red mudstones seldom contain ore deposits. The guides may be used to limit the intensive drilling to the more favorable areas.

EXPLORATION AND ORE POTENTIALS

Outcrop data and drilling data have been used to assess the favorability of the Desert Queen claims. The claims will be discussed as four separate groups since the drilling depths and topography differ from place to place.

Lower group

Vitro Minerals Corporation does not propose any drilling in the Lower group (fig. 2) and the exposures indicate that the group is unfavorable for the occurrence of economic deposits. The sandstone lenses are thin (10 to 25 feet) and bleaching is not pronounced. Many wagon-drill holes have been drilled on the group but no production has resulted.

School section 36

The geology of the ore horizon on the school section 36 (fig. 2) is unknown and no drill holes have penetrated the Salt Wash on the section.

Drilling depths would average around 1,000 feet. Since the ore potential of the area is unknown drilling the five holes proposed by the applicant would be in the nature of a prospecting venture. DMEA participation in the exploration of the school section does not seem warranted at this time.

Deep group

The geology of the Deep group is not well known and the relative favorability of the area remains a question. H. S. Johnson, U. S. Geological Survey has made a study of the area and his data indicates that a north-trending channel system might continue under the Deep group. This channel is known from an outcrop 4 miles to the south and it probably contains the large ore body at the Big Bend mine 3 miles south of the property.

The Deep group has been tested by ten 500- to 600-foot drill holes. Another hole, DR-5, was not deep enough to penetrate the Salt Wash. Seven of the holes penetrating the Salt Wash were non-core holes and favorability ratings based on logs of the cuttings may be misleading. The three remaining holes (DC-13, 14, 15) were at least partially cored. The drill holes have since caved and cannot be probed by Barnaby. The following table summarizes the results of the drilling on the Deep group.

Table 2. Summary of drilling on the Deep group, Desert Queen claims, Emery County, Utah. (Data from applicant's logs)

Drill hole	Depth to top of sandstone	Thickness of sandstone (feet)	Color of sandstone	Color of included mudstone	Thickness of bleaching	Carbon	Mineralization thickness in ft.	Mineralization percent eU_3O_8	Rating (based on lithology)
DR-1	503	27	Wh	--	25	--	2.0	.20	Semifavorable
DR-2	72	30	Lt. Grn	--	--	--		None	Unfavorable
	118	46	Lt. Grn	--	--	--		None	Semifavorable?
	172	58	Wh	Red	--	--		None	Unfavorable
DR-8	465	50	Wh	--	--	--	1.0	.26	Favorable
DR-11	391	57	Lt. Brn	Red	--	--		None	Unfavorable
	453	34	Lt. Brn	--	--			None	Unfavorable
DR-12	495	73	Lt. Brn	--	--	--	1.2	.09	Favorable
DR-13	436	32	--	Red	0	--		None	Unfavorable
	496	30	Lt. Brn	--	0	--	4.7	.07	Semifavorable
DR-14	483	22	Lt. Brn	--	--	--		None	Unfavorable
DC-13	483	56	Wh	Grn	1	P		None	Favorable
DC-14	530	31	Gy	--	--	--		None	Unfavorable?
DC-15	490	<30	Lt. Gy	Grn	--	Abt		Some	Favorable?

Explanation:

-- = not stated in log

? = Questionable ratings

Grn = Green Brn = Brown Lt = Light Gy = Gray
Wh = White P = Present Abt = Abundant

Four of the drill holes indicate favorable ground and three of the favorable holes are mineralized (two contain ore-grade material by U. S. G. S. standards). The mineralized material found is either too thin or too low grade to be commercial at the depths involved. The best hole (DR-1) is reported to have 2 feet of .20 percent eU_3O_8. This is marginal ore and the grade is below the average grade of that produced in the district. The mineralization is in a thin sand which suggests that it is not a large body.

The average size of the ore deposits in the district is fairly well established. Most of the Four Corners ore deposits in the area are between 5,000 and 10,000 tons and an exceptional deposit may contain 15,000 tons. The large ore deposit known south of the area is about 8,000 tons. The ore deposits present a target size of about 200 by 600 feet.

Vitro Minerals Corporation has proposed drilling 29 holes on the Deep group (fig. 2). Two of the holes would offset mineralized and ore holes on 500-foot centers, and four holes would offset Sharples Oil Company's reported ore hole (see DMEA docket 3871 report of examination, p. 7). The rest of the drill holes would be scattered over the ground on about 2000-foot centers and might succeed in outlining favorable ground.

Vitro Minerals Corporation's proposed drilling on the Deep group would be unlikely to succeed for two reasons: (1) The 500-foot offset could easily miss ore bodies similar in size to the largest presently known in the area. (2) The 2,000-foot spacing might miss fairly large

areas of favorable ground and would not provide enough information to guide later drilling. The cost of a project which would adequately explore for deposits similar to those known in the area would be prohibitive. An adequate program might consist of a first phase of three east-west fences of holes on 500-foot centers with about 1,000 feet between the fences. This would require about 30 holes and cost about $33,000. Assuming the first phase outlined an area of favorable ground about 1,000 feet wide and 5,000 feet long, the second phase might consist of 17 east-west fences 300 feet apart with the holes in the fences spaced on 200-foot centers. The second phase would require about 85 holes and cost about $93,500. A third phase would be required to test the mineralized and ore holes of the second phase and might consist of 20 holes costing about $22,000. The project would cost about $150,000 and if successful, might find a deposit which contained ore having a gross value of $150,000 to $300,000.

Another possible program might consist of a 100-foot radius circle of six equally spaced holes around DR-1, DR-8, DR-12, and DR-13. This program would test the hypothesis that fairly large ore bodies exist on the claims. The second phase might consist of 12 holes intended to extend the deposit on a triangular grid. The second phase would cost $13,200 and might indicate 5,000 to 10,000 tons of ore. If it were successful the total cost would be about $40,000 or one-seventh of the gross value of the contained ore.

Some close spaced drilling has been done by Sharples Oil Co., in the bottom of the Wash which cuts across the southern part of the Upper group. Vitro Minerals Corporation proposes four holes on the Deep group to offset the Sharples Oil Co. drilling. The topography is rough and drill road preparation would be difficult if not impossible. If the results of the Sharples drilling were available some drilling might be justified but the lack of information coupled with the difficult topography make drilling these holes a prospecting venture.

None of the program is likely to repay DMEA's share of the exploration costs even if the program were successful. The ore bodies known in the area seem to be marginal at 200-foot depths and would not justify development costs at 500-foot depths. The erratic nature of the deposits make the tonnage estimations difficult, as well as incurring excessive mining costs. It is possible that ore bodies of larger size exist on the Desert Queen claims, but the thickness and grade shown in the logs do not support this hypothesis.

The favorability of the Deep group has not been thoroughly tested. Four holes indicate favorable ground, but most of the holes indicate unfavorable or semifavorable ground. Mineralized material is indicated by the logs, but it is marginal in grade and thickness. Vitro Minerals Corporation's proposed exploration could easily miss ore bodies and would not thoroughly test the ground while the cost of a thorough exploration program cannot be justified on the basis of present knowledge. A project limited to testing for extensions of the mineralized material around previous drill holes is the most attractive but it seems unlikely that

DMEA's cost would be repaid by the ore indicated by a successful program. Exploration on the Deep group does not appear warranted.

Upper group

The Upper group of claims has been tested by nine drill holes. The drilling is summarized in the following table.

Table 3. Summary of drilling on the Upper group, Desert Queen claims, Emery County, Utah (Data from applicant's logs)

Hole no.	Depth to top of sand	Sand thickness	Sand color	Color of included MS	Thickness of bleaching	Carbon	Mineralization	Rating
DR-3	81	79	Gy, Wh	--	20	--	None	Favorable?
	204	21	Gy	--	--	--	None	Unfavorable
DR-4	75	25	Wh	--	15	--	Trace?	Unfavorable
	225	35	Wh	--	--	--	Barren	Unfavorable?
DR-9	50	20	Wh	--	--	--	Barren	Unfavorable
	105	20	Wh	--	--	--	Barren	Unfavorable
	140	25	Wh	--	--	--	Barren	Unfavorable
	235	17	--	--	--	--	Barren	Unfavorable
DR-10	75	65	Wh	--	None	--	Barren	Unfavorable?
DC-8	No log submitted							
DC-9	No log submitted							
DC-10	88	25	Lt. Grn	--	--	--	Barren	Unfavorable
	128	49	--	--	12	P	Barren	Favorable?
	203	17	Gy	--	21	--	Barren	Unfavorable
DC-11	69	18	Wh	--	5	--	Trace	Semifavorable
	195	26	Gy	--	12	--	Barren	Unfavorable
DC-12	39	45	Lt. Grn	--	< 4	--	Barren	Favorable

Explanation:

-- = not stated in log

? = Questionable ratings

Grn = Green Brn = Brown Lt. = Light Gy = Gray
Wh = White P = Present Abt = Abundant

Drilling on the Upper group has been largely unsuccessful. Three of the nine holes indicate favorable ground but no mineralization was found. No logs were available for two of the holes. The Upper group may be too far west to intersect the trend from the south and too far east to intersect the favorable trend from the Four Corners area north of the claims. Although the drilling depths are reasonable, the five proposed holes do not test much ground and the northwest trend of the claims makes it improbable that the drilling would intersect a north-trending area of favorable ground. It seems unlikely that the Upper group drilling would discover enough ore to warrant DMEA participation.

ORE RESERVES

There are no known ore reserves on the Desert Queen claims.

PROPOSED EXPLORATION WITH COSTS

The applicant proposed a program of 19,200 feet (39 holes) of drilling at a total estimated cost of $46,527. The costs were broken down as follows:

Individual contracts		
Bulldozing 100 hours at $14/hr	$ 1,400.00	
Drilling 19,200 feet at $1.91 a foot	36,727.00	
Total individual contracts		$38,127.00

Labor and supervision

Geologist, 6 months at $550/mo.	$ 3,300.00	
Supervisor, 6 months at $650/mo.	3,900.00	
Total labor and supervision		$ 7,200.00 *

Operating materials and supplies

None

Operating equipment (rental and repairs)

1 pickup truck, gas, oil, and maintenance 6 months at $100/mo.	$ 600.00	
Total operating equipment		$ 600.00

Rehabilitation and repairs

None

New buildings, improvements, and installations

None

Miscellaneous

Analytical work 60 samples at $5 each	$ 300.00	
Accounting 6 months at $50/mo.	300.00	
Total miscellaneous		$ 600.00

Total estimated cost for 19,200 feet of drilling	$46,527.00
Estimated cost per foot of drilling	$ 2.42

*erroneously shown in application as $5,400.00

CONCLUSIONS AND RECOMMENDATIONS

The Desert Queen property consist of 81 mining claims and a school section located in the Green River Desert about 15 miles southwest of the town of Green River, Utah. The area is underlain by the Salt Wash member of the Jurassic Morrison formation which is productive in the Four Corners area north of the claims.

The area covered by the claims can conveniently be discussed in four groups. The geology of the ore horizon on the school section is completely unknown and is a prospecting venture in very deep ground. The geology of the Lower group of claims is unfavorable for significant ore deposits although the drilling depths are shallow. The Upper group has been tested and is largely unfavorable. It lies parallel to the ore trends which makes successful exploration unlikely. The Deep group contains the best potential drilling area but the depth of drilling prohibits finding ore bodies at a reasonable cost. Because of these limitations, it is recommended that DMEA assistance be denied.

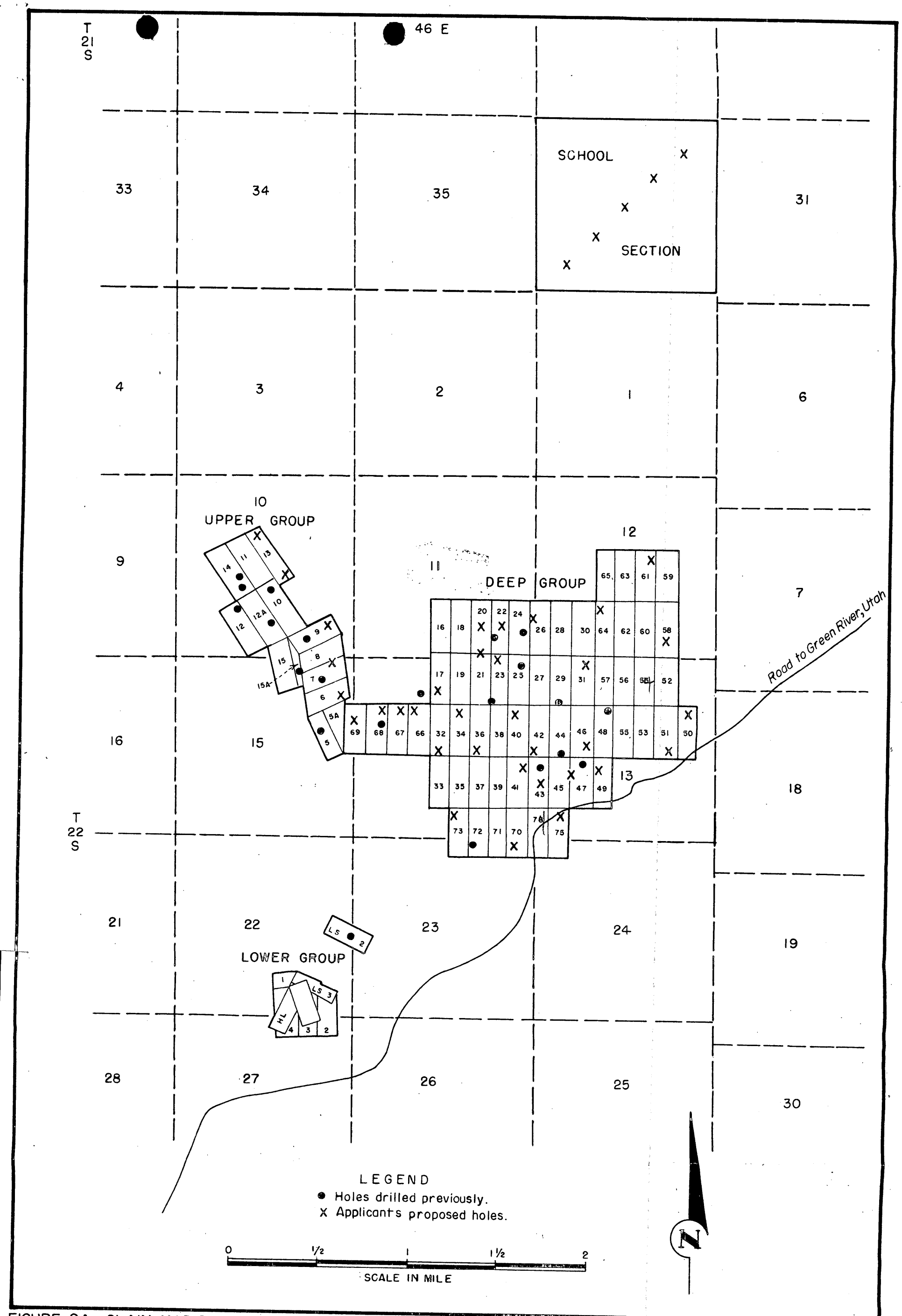

FIGURE 2A - CLAIM MAP SHOWING LOCATION OF PROPOSED DRILL HOLES, DESERT QUEEN MINE AND UTAH STATE LEASE 5059, VITRO MINERALS CORPORATION, EMERY COUNTY, UTAH. DMEA 3984

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
MAR 15 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
MAR 13 1956

DMEA 3984

Desert Queen Mine and Utah State Lease 5059

Vitro Minerals Corporation

Emery County, Utah

Uranium

Supplemental Report

by

Carl Belser
Mining Engineer
Bureau of Mines

March 9, 1956

Reviewed by
DMEA OPERATING COMMITTEE
3-19-56
(MEOO)

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Estimated Cost of Core drilling	3
Summary Cost of Project	4
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ILLUSTRATIONS

Figure	Follows page
1. Map of Deep Group showing location of holes drilled and proposed Stage I holes, Vitro Minerals Corporation, Emery County, Utah. DMEA 3984	6

DMEA 3984

DESERT QUEEN MINE AND UTAH STATE LEASE 5059
VITRO MINERALS CORPORATION
EMERY COUNTY, UTAH

INTRODUCTION

The examining team has recommended that the application for aid in exploration of the Deep group be denied. A reappraisal of the report indicates that a modified project consisting of a two-stage drilling program centering around holes DR-1 and DR-8 may be justified.

Hole DR-1 was drilled to a depth of 600 feet and contained 2 feet of 0.20 percent U_3O_8 at a depth of 499 ~~basal~~ feet. Hole DR-8 was drilled to a depth of 550 feet and penetrated 1-foot of 0.26 percent U_3O_8 at a depth of 492 to 493 feet. The applicant determined the uranium content by probing.

Stage I would consist of offsetting each of these two holes with four additional holes, drilled, respectively, 150 feet to the north, south, east, and west (fig. 1). Stage II, requiring prior approval of the Field Team, would consist of not over eight additional offset holes to further delineate the extension of any ore body indicated by Stage I drilling. Stage II holes would be spaced on 100- to 200-foot centers.

ESTIMATED COST OF PLUG-BIT DRILLING

The individual contractor's drilling costs in the applicant's estimate appear to be fair and will be used. Stage I and II would have

approximately the same costs. The eight Stage I holes would require 4,400 feet of drilling of which 3,600 feet would be non-core drilling and 800 feet core drilling. The estimated costs follow:

Stage I

Individual contracts

3,600 feet of non-core drilling at $1.41/feet	$ 5,076.00	
Bulldozing 18 hours at $12/hr.	216.00	
Total individual contracts		$ 5,292.00

Labor and supervision

Geologist-engineer 1 month at $600/mo.	$ 600.00	
Total labor and supervision		$ 600.00

Operating materials and supplies

None

Operation equipment

Pickup truck, gas, oil, and maintenance 1-1/2 month at $100/mo.	$ 150.00	
Total operation equipment		$ 150.00

Rehabilitation and repairs

None

New buildings, improvements, and installations

None

Miscellaneous

Accounting 1 month at $50/mo.	$ 50.00	
Compensation and liability insurance, and payroll taxes 7 percent of $650	45.50	
Total miscellaneous		$ 95.50

Total estimated cost of 3,600 feet of plug-bit drilling	$ 6,137.50
Estimated cost per foot of plug-bit drilling	$ 1.70

ESTIMATED COST OF CORE DRILLING

Stage I

Individual contracts

800 feet of core drilling at $4/ft.	$ 3,200.00	
Bulldozing 6 hours at $12/hr.	72.00	
Total individual contracts		$ 3,272.00

Labor and supervision

Geologist-engineer 1 month at $600/mo.	$ 600.00	
Total labor and supervision		$ 600.00

Operating material and supplies

80 core boxes at $1.20 each	$ 96.00	
Total operating materials and supplies		$ 96.00

Operating equipment

Pickup truck, gas, oil, and maintenance 1/2 month at $100/mo.	$ 50.00	
Total operating equipment		$ 50.00

Rehabilitation and repairs

None

New buildings, improvements, and installations

None

Miscellaneous

Accounting 1 month at $50/mo.	$ 50.00	
Compensation and liability insurance, and payroll taxes 7 percent of $650	45.50	
Total miscellaneous		$ 95.50

Total estimated cost for 800 feet of core drilling	$ 4,113.50
Estimated cost per foot of core drilling	$ 5.14

SUMMARY COST OF PROJECT

Stage I

3,600 feet of non-core drilling at 1.70/foot	$ 6,120.00	
800 feet of core drilling at $5.14/foot	4,112.00	
12 chemical analyses at $5 each	60.00	
Estimated total cost of Stage I drilling		$10,292.00

Stage II

3,600 feet of non-core drilling at $1.70/foot	$ 6,120.00	
800 feet of core drilling at $5.14/foot	4,112.00	
12 chemical analyses at $5 each	60.00	
Estimated total cost of Stage II drilling		$10,292.00

Total estimated cost of project	$20,584.00
Government participation 75 percent, or	$15,438.00
Time for completion	4 months

RECOMMENDATIONS

Stage I consists of eight holes (4,400 feet of drilling). Four of these holes are to be spaced 150 feet, respectively, north, south, east, and west of drill hole DR-1 and the other four holes to be spaced 150 feet, respectively, north, south, east, and west of hole DR-8, as shown on figure 1.

Stage II

Stage II shall consist of eight offset holes on 100- to 200-foot centers to further delineate ore found by Stage I drilling. Stage II drilling will require prior approval of the Field Team.

All holes drilled in either Stage I or Stage II shall be cored the last 100 feet (through the ore zone in the Salt Wash member of the Morrison formation).

A short-form contract or the following contract is suggested:

Stage I

3,600 feet non-core drilling at $1.41/foot	$5,076.00	
800 feet core drilling at $4/foot	3,200.00	
Bulldozing 24 hours at $12/hr.	288.00	
Chemical assays, 12 at $5 each	60.00	
Incidental expense 4,400 feet at 38¢/foot	1,672.00	
Total Stage I		$10,296.00

Stage II

3,600 feet non-core drilling at $1.41/foot	$5,076.00	
800 feet core drilling at $4/foot	3,200.00	
Bulldozing 24 hours at $12/hr.	288.00	
Chemical assays, 12 at $5 each	60.00	
Incidental expense 4,400 feet at 38¢/foot	1,672.00	
Total Stage II		$10,296.00

Total cost of project	$20,592.00
Government participation 75 percent, or	$15,444.00
Time for completion	4 months

Incidental expense to include core boxes, supervision, accounting, pickup and insurance.

3-16-56

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

RECEIVED
MAR 16 1956

March 14, 1956

224 New Customhouse
Denver 2, Colorado

Mr. J. O. Horton
Vitro Minerals Corporation
P. O. Box 67
South Salt Lake City, Utah

Re: Docket DMEA 3984 (Uranium),
Desert Queen Mine and State
Lease 5059, Emery County,
Utah

Dear Mr. Horton:

In compliance with your recent request that you be advised when the Report of Examination on the captioned property was forwarded the Washington office, this is to inform you that the Report of Examination is being forwarded the Washington office, DMEA this date.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Docket 3984
Chron.

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

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Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Docket 3984
Chron.

September 30, 1955

Memorandum

To: John F. Shaw

From: Superintendent, Denver Experiment Station, Reg. III

Subject: DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease, Sec. 36, T. 21 S., R. 14 E., Emery County, Utah

The subject application in the amount of $46,527.00 is enclosed herewith. The brochure consists of:

1. Form MF-103 and supplementary information
2. Geologic report on Desert Queen Uranium Prospect by Cecil H. Smith
3. 2 Photocopies of memo from W.P.Williams to E.W.Ellis
4. Photocopy of memo from John E. Crawford to E.W.Ellis
5. 2 Photocopies of letter of transmittal from Secretary Operating Committee to Executive Officer
6. Copy of memo from Executive Officer transmitting the brochure to this office
7. 2 Envelopes numbered 1 and 2 containing maps, mining agreements, settlement sheets and drill logs

A field examination and suitable report are required. The completed report should be sent directly to the Executive Officer with a copy of your memorandum of transmittal to this office.

W. H. King

Enclosures

Copy to: E. N. Harshman
J. W. Mealer
W. M. Traver (3)
Sec. Op. Com.

RECEIVED

SEP 30 1955

September 30, 1955

Memorandum

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From: Superintendent, Denver Experiment Station, Reg. III

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W. H. KING

W. H. King

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Copy to: E. N. Harshman
J. W. Healer
W. M. Traver (3)

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

RECEIVED
OCT 4 1955

September 29, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. H. King
H. W. Hasler

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3984 (Uranium), Vitro Minerals Corporation, Desert Queen Mine and State Lease, Sec. 36, T. 21 S., R. 14 E., Emery County, Utah

Enclosed is the subject application in the amount of $46,527.00. Also enclosed is a copy of a letter from the Chairman of the Operating Committee with reviews of the application by members of the Uranium Commodity Committee.

A field investigation and sutiable report are required.

W. M. Traver

W. M. Traver

Enclosures

WMC:ab
cc: Sec. Opr. Comm. (2)
Harshman
Docket 3984
Chron.

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

RECEIVED
OCT 4 1955

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224 New Customhouse
Denver 2, Colorado

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W. M. Traver

W. M. Traver

Enclosures

WMC:ab
cc: Sec. Opr. Comm. (?)
Harshman
Docket 3984
Chron.

Vitro MINERALS CORPORATION
3324 SOUTH STATE STREET • P. O. BOX 67 • SOUTH SALT LAKE • TELEPHONE 7-3681

RECEIVED
SEP 29 1955

September 26, 1955

DMEA-3984

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

Gentlemen:

Enclosed herewith is a copy of our letter of transmittal covering one additional copy of our D.M.E.A. Loan Application which was mailed to Mr. W. M. Traver, your Executive Officer in Denver, Colorado, on September 26, 1955.

We trust this will complete your files on this application.

Yours very truly,

VITRO MINERALS CORPORATION

J. O. Horton

J. O. HORTON
General Manager

JOH:jmo

September 26, 1955

Mr. W. M. Traver, Exec. Officer
DMEA Field Team, Region III
U. S. Bureau of Mines
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

In compliance with a request from the Defense Minerals Exploration Administration, Washington, D. C., we are transmitting herewith one (1) ozalid copy, together with necessary attachments, of our D.M.E.A. Loan Application covering exploration on properties controlled by our company in the Green River Area of Utah.

Your early consideration of this matter will be greatly appreciated.

Yours very truly,

VITRO MINERALS CORPORATION

C. H. SMITH
Division Geologist

CHS:jmo
Encls.

cc: Defense Minerals Exploration Adm., Wash., D. C.
Mr. W. B. Hall, Vitro Minerals Corp., S.L.C., Utah

700

Surname copy

Murphy
Ellis
Nelson
Gechano
Selfridge
Fitzsimon

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

SEP 26 1955

Mr. W. B. Hall, Vice President
Vitro Minerals Corporation
600 West 33rd South
Salt Lake City, Utah

Re: Docket No. DMEA-3984 (Uranium)
Desert Queen Mine and State
Lease Sec. 36, T. 21 S., R. 14 E.
Emery County, Utah

Dear Mr.Hall:

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

Mr. W. M. Trever
Executive Officer
DMEA FieldTeam, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you in regard to your project at the earliest opportunity.

Sincerely yours,

C. O. Mittendorf

Administrator

FTMurphy/gla
9-26-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr.Murphy
DMEA Field Team, Region III (2)

Surname copy 700

Murphy
Ellis
Nelson
Selfridge
KJ Summers

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

SEP 26 1955

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

Re: Docket No. DMEA-3984 (Uranium)
Vitro Minerals Corporation
Desert Queen Mine and State
Lease, Sec. 36, T. 21 S., R. 14 E.
Emery County, Utah

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation. Only three copies of the application were received. However, the Applicant was requested, on September 20, to submit a fourth copy direct to your office.

Enclosed are copies of memoranda from J. E. Crawford, dated September 21, and W. P. Williams, dated September 22, 1955, members of the Uranium Commodity Committee.

This office will discuss the legal questions of claim ownership involved in this application with Mr. E. G. Littel, the Applicant's attorney in Washington.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (WB)

Enclosures

APPROVED:

/s/ Robert W. Gesheff (WB)
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey (WB)

FMMurphy/gla
9-26-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Murphy

RLS

9/23/55 gla

IN REPLY REFER TO:

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

September 22, 1955

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 3984, Vitro Minerals Corporation, School section 36 and Desert Queen claims, Emery County, Utah (uranium).

The applicant proposes a plug-bit and diamond drilling project consisting of a total of 19,210 feet of drilling at an estimated total cost of $46,527. The area involved is composed of 80 mining claims and a School Section 36, all on the east flank of the San Rafael Swell.

The west half of the School Section 36, T. 21 S., R. 14 E., Emery County, Utah, has already been submitted to DMEA (Docket No. DMEA-3681). The previous application was held in abeyance and finally closed because the ore-bearing zone was deeply buried and the applicant had not performed any preliminary work to justify additional exploration. To my knowledge the situation on School Section 36 has not changed; and the applicant has not done any preliminary work on section 36.

A large portion of the property, known as the Deep Group, is covered with the Mancos shale and Burro Canyon formations. Drilling depths on the Deep Group would probably range from 700 to 1,000 feet.

Drilling depths on the Upper and Lower groups would be much less because the ore host, the Salt Wash member of the Morrison, either crops out or is covered only by the Brushy Basin member of the Morrison.

Drilling on the property by the applicant has not been very successful. The completed drilling includes 29 core-drill holes and 14 wagon-drill holes. The applicant claims some of the holes penetrated mineralized rock. Examination of the logs, however, shows that the assay values were obtained only by a hole probing unit and not by chemical assay. Such information may be misleading. A shipment of a little over 3½ tons of ore from the property in 1954 contained the entire known ore reserves on the property.

Drilling on the School Section 36 would definitely be a prospecting venture. Drilling on the Deep Group would be deep, and previous drilling does not look promising. Exploration work may be desirable on the Upper and Lower groups where drilling depths are shallow if the Salt Wash sands are thick and lithologically favorable for uranium ore deposition.

I recommend that the application be referred to the Field Team for field examination and report. If the existing drill holes are standing well, they should be checked with a USGS 'Barnaby'. Every effort should be made to probe hole No. DR-1 on Desert Queen Claim No. 22. If the ore, at 500-foot depth, is verified then DMEA participation might be warranted in the cost of a few holes around hole No. DR-1.

W. P. Williams

W. P. Williams

IN REPLY REFER TO:

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

September 22, 1955

Memorandum

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Drilling on the School Section 36 would definitely be a prospecting venture. Drilling on the Deep Group would be deep, and previous drilling does not look promising. Exploration work may be desirable on the Upper and Lower groups where drilling depths are shallow if the Salt Wash sands are thick and lithologically favorable for uranium ore deposition.

I recommend that the application be referred to the Field Team for field examination and report. If the existing drill holes are standing well, they should be checked with a USGS 'Barnaby'. Every effort should be made to probe hole No. BR-1 on Desert Queen Claim No. 28. If the ore, at 300-foot depth, is verified then DMEA participation might be warranted in the cost of a few holes around hole No. BR-1.

W. P. Williams

WPWilliams:iml
G-9/22/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3) ✓
Docket file
J. E. Crawford, 3641
J. O. Rosted, 3210

9/21/55 gla

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

September 21, 1955

Memorandum

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

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

Subject: Application for assistance, DMEA Docket 3984, Vitro Minerals Corporation, Emery County, Utah

I have reviewed the attached application, Vitro Minerals Corporation, DMEA Docket 3984; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The Desert Queen Uranium Company core drilled 9 holes on the Desert Queen claims, and Vitro Minerals Company subsequently wagon drilled 14 holes, core drilled 6 holes, and rotary non-core drilled 14 holes on the property.

Results of drilling indicated the possibility of a channel trend containing favorable mineralization, including uraninite, carnotite and autunite.

An exploratory project of drilling to define the channel and determine the grade, type, and extent of mineralization seems warranted. The spacing of the drill holes as suggested by the applicant would appear satisfactory to fulfill exploration criteria.

The costs presented by Vitro Minerals Company for undertaking the project are reasonable. Expenditures as described are relatively modest in comparison with some received for exploration in the same general area.

We suggest that the application be referred to the Field Team for study and appropriate action; and we recommend that the Field Team consult with Mr. Ernest R. Gordon, Atomic Energy Commission, Grand Junction, Colorado, in order that they may benefit by any previous geological and/or geophysical investigations made by the AEC on the Desert Queen claims or in the immediate area.

John E Crawford
John E. Crawford

Attachment

September 20, 1955
Subject: DMEA-3984
Re: Exploration Assistance
Desert Queen Mine

Mr. William B. Hall, Jr.
Vice President
Vitro Minerals Corporation
600 West 33rd South
Salt Lake City, Utah

My dear Mr. Hall:

The receipt of your application dated September 14, 1955, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3984 and referred to the Rare & Misc. Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

P. S. Only three copies of your application were received. It is requested that you submit a fourth copy direct to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado.

F. G. Little
ME. 8-2330

00932

September 20, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region 3

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received ~~from Region~~

DMEA- 3984 Vitro Minerals Corporation

Robert E. Adams
Chief, Operation's Control
and Statistics Division

P.S. Only three application forms were received. The Vitro Minerals Corporation has been instructed to send an additional copy direct to your office.

Vitro MINERALS CORPORATION
600 WEST 33rd SOUTH STREET • SALT LAKE CITY 15, UTAH • TELEPHONE 7-1501

September 16, 1955

RECEIVED
SEP 2 0 1955

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

Gentlemen:

Enclosed please find completed application on Form MF-103, together with necessary attachments, for a DMEA Loan totalling $46,527.00 to cover exploration on properties controlled by our company in the Green River Area of Utah.

We would appreciate your early action on this application.

Very truly yours,

VITRO MINERALS CORPORATION

W B Hall

W. B. Hall
Vice President

WBH:jmo
Encls.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
SEP 20 1955

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

Not to be filled in by applicant

Docket No. DMEA-3984
Metal or Mineral Uranium
Date Received 9/20/55
Estimated Cost $46,527.00
Participation (Government %)

INSTRUCTIONS

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

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah Ph. Salt Lake 7-3681

(*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

See attached sheet

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

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

Lessee, see attached sheet

(*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

None

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

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

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

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

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

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

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

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

(*c*) The work will start within 30 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

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 September 14, 1955

VITRO MINERALS CORPORATION
(Applicant)

By W B Hale

VICE PRESIDENT

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

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SEP 20 1955

APPLICATION

FOR AID IN AN EXPLORATION PROJECT,

PURSUANT TO DMEA ORDER 1,

UNDER

THE DEFENSE PRODUCTION ACT OF 1950,

AS AMENDED

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

September 14, 1955

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Area Map . . . . . Frontispiece

Text of Application . . . . . Pages 1 - 13

Geologic Report by C. H. Smith . . . . following Pg. 13

Enclosed in Separate Envelope I

Plate A . . . . . Survey Map

Plate B . . . . . Upper Group, Desert Queen

Plate C . . . . . Lower Group, Desert Queen (Drilling to date)

Plate D . . . . . Deep Group, Desert Queen

Plate E . . . . . Geologic Map

Plate F . . . . . School Section

Plate G . . . . . Lower Group, Desert Queen (Proposed Drilling)

Enclosed in Separate Envelope II

UTAH STATE LEASE ON SCHOOL SECTION

MINING AGREEMENT

SETTLEMENT SHEET

DRILL HOLE LOGS

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

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SEP 20 1955

DMEA LOAN APPLICATION

* * *

1. (a) VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah
Salt Lake 7-3681

(b) VITRO MINERALS CORPORATION, a Delaware Corporation, is a joint subsidiary of the VITRO CORPORATION OF AMERICA, a Delaware Corporation, and ROCHESTER AND PITTSBURGH COAL COMPANY, a Pennsylvania Corporation.

(c) POTTER, CHARLES J., President
Rochester and Pittsburgh Coal Co.
Indiana, Pennsylvania

HALL, WILLIAM B. JR., Vice President
Vitro Uranium Company
600 West 33rd South
Salt Lake City, Utah

DENNE, WILLIAM H. JR., Secretary
Vitro Corporation of America
261 Madison Avenue
New York City 16, N. Y.

RUDER, RAYMOND T., Treasurer
Vitro Corporation of America
261 Madison Avenue
New York 16, N. Y.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

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SEP 20 1955

3. (a) Applicant's property rights:

Properties are located in the Green River District, Emery County, Utah. The properties are divided into four groups totaling 81 unpatented lode claims and 1 State School Section. These groups are listed below:

(1) Lower Group Claims (7 unpatented lode claims):

Long Shot #2
Long Shot #3
Hard Luck
Desert Queen #1
Desert Queen #2
Desert Queen #3
Desert Queen #4

These claims are located in the S.E. quarter of Section 22, T. 22 S., R. 14 E., S.L.M.

These claims are shown in their true position on the enclosed survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(2) Upper Group Claims (14 unpatented lode claims):

Desert Queen #5
Desert Queen #5A
Desert Queen #6
Desert Queen #7
Desert Queen #8
Desert Queen #9
Desert Queen #10
Desert Queen #11
Desert Queen #12
Desert Queen #12A
Desert Queen #13
Desert Queen #14
Desert Queen #15
Desert Queen #15A

These claims are located in the S.E. quarter of Section 10 and the N.E. quarter of Section 15, T. 22S., R. 14 E., S.L.M.

These claims are shown in their true position on the enclosed certified survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(3) Deep Group Claims (60 unpatented lode claims):

Desert Queen #16 through #75, inclusive.

These claims are located in Sections 11, 12, 13 and 14, T. 22 S., R. 14 E., S.L.M.

These claims are shown in their true position on the enclosed survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(4) The Vitro Minerals Corporation holds a State of Utah Uranium and Vanadium Minerals Lease on Section 36, T. 21 S., R. 14 E., S.L.M. This section is part of the Desert Queen Prospect. A copy of this lease is enclosed.

(b) The property is known as the DESERT QUEEN MINE. This name is in reference to the workings on the Desert Queen #1 claim.

(c) Vitro Uranium Company entered into a joint venture contract with the Desert Queen Uranium Company on October 21, 1954. This contract has been assigned to Vitro Minerals Company and been accepted by the Desert Queen Uranium Company.

The joint venture calls for Vitro Uranium (Minerals) Company to have a 51% net interest in the property in consideration of accepting responsibility for management, exploration and mining of the property.

(d) A copy of the mining agreement and acceptance of assignment to Vitro Minerals is enclosed in this application.

(e) NONE.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

(f) Recorded Location Notices:

Claim Name	Book	Page	Date
Long Shot #2	J-21	530	May 17, 1954
Long Shot #3	J-21	531	May 17, 1954
Hard Luck	J-21	532	May 17, 1954
Desert Queen #1	J-17	563	Mar. 8, 1954
Desert Queen #2	J-17	564	Mar. 8, 1954
Desert Queen #3	J-17	565	Mar. 8, 1954
Desert Queen #4	J-17	566	Mar. 8, 1954
Desert Queen 4 (Four)	J-62	113	Nov. 15, 1954
Desert Queen #5	J-18	299	Mar. 17, 1954
Desert Queen #5A	J-63	158	Nov. 17, 1954
Desert Queen #6	J-18	300	Mar. 17, 1954
Desert Queen #7	J-18	301	Mar. 17, 1954
Desert Queen #8	J-18	302	Mar. 17, 1954
Desert Queen #9	J-18	303	Mar. 17, 1954
Desert Queen #10	J-18	304	Mar. 17, 1954
Desert Queen #11	J-18	305	Mar. 17, 1954
Desert Queen #12	J-18	306	Mar. 17, 1954
Desert Queen #12A	J-63	157	Nov. 17, 1954
Desert Queen #13	J-40	114	Aug. 24, 1954
Desert Queen #14	J-40	115	Aug. 24, 1954
Desert Queen #15	J-40	116	Aug. 24, 1954
Desert Queen #15A	J-63	159	Nov. 17, 1954
Desert Queen #16	J-51	439	Sept. 28, 1954
Desert Queen #17	J-51	440	Sept. 28, 1954
Desert Queen #18	J-51	441	Sept. 28, 1954
Desert Queen #19	J-51	442	Sept. 28, 1954
Desert Queen #20	J-51	443	Sept. 28, 1954
Desert Queen #21	J-51	444	Sept. 28, 1954
Desert Queen #22	J-51	445	Sept. 28, 1954
Desert Queen #23	J-51	446	Sept. 28, 1954
Desert Queen #24	J-51	447	Sept. 28, 1954
Desert Queen #25	J-51	448	Sept. 28, 1954
Desert Queen #26	J-51	449	Sept. 28, 1954
Desert Queen #27	J-51	450	Sept. 28, 1954
Desert Queen #28	J-51	451	Sept. 28, 1954
Desert Queen #29	J-51	452	Sept. 28, 1954
Desert Queen #30	J-51	453	Sept. 28, 1954
Desert Queen #31	J-51	454	Sept. 28, 1954
Desert Queen #32	J-51	455	Sept. 28, 1954
Desert Queen #33	J-51	456	Sept. 28, 1954
Desert Queen #34	J-51	457	Sept. 28, 1954
Desert Queen #35	J-51	458	Sept. 28, 1954
Desert Queen #36	J-51	459	Sept. 28, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

Recorded Location Notices: (Cont'd)

Claim Name	Book	Page	Date
Desert Queen #37	J-51	460	Sept. 28, 1954
Desert Queen #38	J-51	461	Sept. 28, 1954
Desert Queen #39	J-51	462	Sept. 28, 1954
Desert Queen #40	J-51	463	Sept. 28, 1954
Desert Queen #41	J-51	464	Sept. 28, 1954
Desert Queen #42	J-51	465	Sept. 28, 1954
Desert Queen #43	J-51	466	Sept. 28, 1954
Desert Queen #44	J-51	467	Sept. 28, 1954
Desert Queen #45	J-51	468	Sept. 28, 1954
Desert Queen #46	J-51	469	Sept. 28, 1954
Desert Queen #47	J-51	470	Sept. 28, 1954
Desert Queen #48	J-51	471	Sept. 28, 1954
Desert Queen #49	J-51	472	Sept. 28, 1954
Desert Queen #50	J-53	82	Oct. 2, 1954
Desert Queen #51	J-53	83	Oct. 2, 1954
Desert Queen #52	J-53	84	Oct. 2, 1954
Desert Queen #53	J-53	85	Oct. 2, 1954
Desert Queen #54	J-53	86	Oct. 2, 1954
Desert Queen #55	J-53	87	Oct. 2, 1954
Desert Queen #56	J-53	88	Oct. 2, 1954
Desert Queen #57	J-53	89	Oct. 2, 1954
Desert Queen #58	J-53	90	Oct. 2, 1954
Desert Queen #59	J-53	91	Oct. 2, 1954
Desert Queen #60	J-53	92	Oct. 2, 1954
Desert Queen #61	J-53	93	Oct. 2, 1954
Desert Queen #62	J-53	94	Oct. 2, 1954
Desert Queen #63	J-53	95	Oct. 2, 1954
Desert Queen #64	J-53	96	Oct. 2, 1954
Desert Queen #65	J-53	97	Oct. 2, 1954
Desert Queen #66	J-56	7	Oct. 14, 1954
Desert Queen #67	J-56	8	Oct. 14, 1954
Desert Queen #68	J-56	9	Oct. 14, 1954
Desert Queen #69	J-56	10	Oct. 14, 1954
Desert Queen #70	J-56	11	Oct. 14, 1954
Desert Queen #71	J-56	12	Oct. 14, 1954
Desert Queen #72	J-62	114	Nov. 15, 1954
Desert Queen #73	J-62	115	Nov. 15, 1954
Desert Queen #74	J-62	116	Nov. 15, 1954
Desert Queen #75	J-62	117	Nov. 15, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

Application under Circular 7:

Claim Name	Book	Page	Date
Desert Queen #1	J-22	434	May 28, 1954
Desert Queen #2	J-22	435	May 28, 1954
Desert Queen #3	J-22	436	May 28, 1954
Desert Queen #4	J-22	437	May 28, 1954
Desert Queen #5	J-22	438	May 28, 1954
Desert Queen #6	J-22	439	May 28, 1954
Desert Queen #7	J-22	440	May 28, 1954
Desert Queen #8	J-22	441	May 28, 1954
Desert Queen #9	J-22	442	May 28, 1954
Desert Queen #10	J-22	443	May 28, 1954
Desert Queen #11	J-22	444	May 28, 1954
Desert Queen #12	J-22	445	May 28, 1954

Amemded Location Notice:

Claim Name	Book	Page	Date
Desert Queen #1	J-40	141	Aug. 24, 1954
Desert Queen #2	J-40	142	Aug. 24, 1954
Desert Queen #3	J-40	143	Aug. 24, 1954
Desert Queen #4	J-62	113	Nov. 15, 1954
(D. Q. #4 also Amended -	J-40	144	Aug. 24, 1954)
Desert Queen #5	J-40	145	Aug. 24, 1954
Desert Queen #6	J-40	146	Aug. 24, 1954
Desert Queen #7	J-40	147	Aug. 24, 1954
Desert Queen #8	J-40	148	Aug. 24, 1954
Desert Queen #9	J-40	149	Aug. 24, 1954
Desert Queen #10	J-40	150	Aug. 24, 1954
Desert Queen #11	J-40	151	Aug. 24, 1954
Desert Queen #12	J-40	152	Aug. 24, 1954
(No. 12 also Amended -	J-63	156	Nov. 17, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

4. Physical Description:

(a) Previous to Vitro Minerals' participation in the Desert Queen prospect, nine (9) core holes had been drilled by the Desert Queen Uranium Company.

Since participation in this venture by Vitro Minerals Company, fourteen (14) wagon drill holes, six (6) core holes and fourteen (14) rotary non-core holes have been drilled, at Vitro Minerals Corporation's expense. The logs on these holes are enclosed and are listed as follows:

(1) Wagon Drill holes
D-1 thru 14, inclusive

(2) Core Drill holes
DC-10 thru 15, inclusive

(3) Rotary Drill holes
DR-1 thru 14, inclusive

A four (4) ton shipment of uranium was made from the Hard Luck #1 claim. This ore came from a very small ore lense. There appears to be little extension of this ore. The settlement sheet on this shipment is enclosed.

All parts of the property are easily accessible to four-wheel drive type vehicles and all outcroppings can be examined during one day in the field.

(b) There is no current production from the property and only the above past shipment has been made from the property.

Exploration has not proceeded far enough at this time to estimate the grade or tonnage of reserve in the mineralized area found on the Deep Group of claims outlined by Drill holes DC-13, DC-14, DC-15, DR-1, DR-8, DR-11, DR-12, DR-13 and DR-14.

The location of all drill holes are plotted on the enclosed maps, (see Plates B, C, D) and logs and probe results for these holes are enclosed with this application.

(c) The Desert Queen property lies in a strong north-south mineralized zone located along the east side of the San Rafael Swell.

The mineralization is a uraninite type of ore, with some carnotite and autunite (oxidation-type) ores. The ore deposits are bedded and lie in small lenses and rolls in the Salt Wash sand member of the Morrison formation.

Structurally, the beds dip 3 to 4 degrees to the north-east. One fault of prominence was located on the property. This fault strikes N 50 W across the southwest corner of the Deep Group of claims. A geologic map showing faults, mines and prospects in the area is enclosed with this application. (See Plate E)

The Vitro Minerals Corporation has already expended in excess of twenty thousand dollars in exploration drilling and related costs on these properties. Results to date indicate a channel trend containing favorable mineralization that may indicate the presence of nearby ore bodies. The evidence to support this postulation is given in the geologic report by Cecil H. Smith submitted with this application. Vitro Minerals Corporation's primary reason for wishing to continue this exploration program is to discover these possible uranium deposits of commercial importance, or disprove their presence.

(d) The property is reached by traveling west from Green River, Utah, on U. S. Highway 50, a distance of four miles, thence southwest on maintained Utah Highway 24 for twelve miles to the property. The nearest shipping point would be Green River, Utah, a distance of sixteen miles.

Vitro Uranium Company maintains three loading docks at Green River. The ore is loaded on the railroad and shipped to Murray, Utah, where it is sampled by the Utah Sampling Company, and then transported to the Vitro Uranium Mill in South Salt Lake City.

Green River, Utah is undergoing "growing pains" at the present time. Motel and trailer accommodations may be obtained and several housing projects are planned for the near future.

(e) All necessary manpower, materials and supplies, equipment, and water may be obtained in Green River, Utah or Grand Junction, Colorado, a distance of 104 miles from Green River.

Power may be obtained either from a small portable power plant or by tapping the new power line running from Castle Rock, Utah to Moab, Utah. This line passes just a few miles to the north of the Desert Queen property.

5. The Exploration Project:

(a) This application for loan is for the purpose of exploring for uranium or other fissionable materials.

(b) The proposed exploration project, under this loan, calls for drilling a string of core holes in an east-west line on 500 ft. centers. These holes will be drilled across the Upper and Deep group of claims. These holes will be for the purpose of exploring the north-south area of favorable mineralization indicated by previous exploration work on the prospect, plus the existence of known ore bodies in the immediate vicinity of the Desert Queen property.

Further core drilling is planned on 1000 ft. centers to evaluate other possible zones of enrichment on the property. Some access roads will be necessary to do this drilling. Proposed drilling is indicated on the enclosed maps. (Plates B, C, D, F) Proposed holes under this program are marked as DMEA holes No. 1 thru 39, inclusive.

(c) The work will start within thirty (30) days and be completed within six (6) months from the date of an exploration project contract.

(d) The Vitro Minerals Corporation has conducted a number of exploratory drilling operations for uranium, both on the Colorado Plateau and in Wyoming. These operations are under the supervision of experienced geologists and engineers and careful, scientific attention is given to all stages of the work. The Corporation is currently engaged

in a strip mining operation in the Gas Hills District, Fremont County, Wyoming on a discovery made by exploratory drilling. The Corporation has had the distinction of being the largest shipper into the Riverton Buying Station for the past several months.

The Vitro Minerals Corporation is jointly owned by the Vitro Corporation of America and the Rochester and Pittsburgh Coal Company of Indiana, Pennsylvania. The Vitro Uranium Company, operators of the Vitro mill in Salt Lake City, is a division of the Vitro Corporation of America. The Vitro Minerals Corporation has direct access to the mining "know-how" of Rochester and Pittsburgh, as well as to an ample supply of mining equipment and machinery. The Vitro Minerals Corporation likewise benefits from the facilities offered by the Vitro Uranium Company in uranium extraction research and laboratory facilities.

The Desert Queen project will be under the office supervision of J. O. Horton, General Manager of the Vitro Minerals Corporation and under the direct field management of Cecil H. Smith, Division Geologist for the Colorado Plateau. Mr. Smith has had several years experience with the U. S. Vanadium Corporation on the Plateau and is thoroughly familiar with exploration problems in the Green River District.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

6. Estimate of Costs:

(a) Independent Contracts.

1. Estimated Costs for Plug Drilling (non-Core):

Depth	Cost per Ft.	Total footage	Extension
0-100	$ 1.00	3900	$ 3900.00
100-200	1.20	3270	3924.00
200-300	1.45	3000	4350.00
300-400	1.70	2550	4335.00
400-500	1.95	1740	3393.00
500-1000	2.30	1250	2875.00

2. Estimated Costs for Core Drilling:

0-500	3.50	1800	6300.00
500-1000	4.50	1700	7650.00
TOTALS		19,210 Ft.	$36,727.00
AVERAGE COST PER FT.			$ 1.91

3. Estimated Costs - Other Equipment:

Road Work and preparing locations

Bulldozer - 100 Hrs. @ $14.00 per Hr. 1,400.00

TOTAL ESTIMATED COST - CONTRACT WORK $38,127.00

(b) Labor, Supervision, Consultants:

(1) Project Geologist

6 months @ $550.00 per mo.	$ 3300.00

(1) Project Supervisor

6 months @ $650.00 per mo.	3900.00
TOTAL SUPERVISORY COSTS	$ 5400.00

The Project Supervisor and Geologist will survey in and run elevations on all drill locations, supervise road building and dozer work, supervise drilling, collect bit samples, construct lithologic strip logs, probe all holes and keep up field geologic interpretations on all data.

(c) Operating materials and supplies:

Such items that are not covered under independent contracts will be furnished without charge by Vitro Minerals Corporation.

(d) Operating Equipment:

Estimated fuel and oil for, and maintenance of, one pickup truck, to be furnished by Vitro.

6 Months @ $100.00 per mo.	$ 600.00

(e) Rehabilitation and Repairs:

NONE

(f) New Buildings, Improvements, Installations:

NONE

(g) Miscellaneous:

1. Analytical Work.

Estimated total of 60 volumetric assays at $5.00 each	$	300.00
2. Direct accounting costs at $50.00 per mo.		300.00

(h) Contingencies:

NONE

TOTAL LOAN APPLICATION	$	46,527.00

7. Vitro Minerals Corporation is prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation, in the form of direct monetary contribution.

Vitro Minerals Corporation agrees to carry the full cost of the operation on a monthly basis and will submit monthly statements to the Defense Minerals Exploration Administration, for pro rata reimbursement.

Respectfully submitted,

VITRO MINERALS CORPORATION

BY: W B Hall

W. B. HALL,
Vice President

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SEP 20 1955

GEOLOGIC REPORT ON THE DESERT QUEEN URANIUM PROSPECT
Emery County, Utah

VITRO MINERALS CORPORATION
3324 South State
Salt Lake City, Utah

Cecil H. Smith

August 3, 1955

Geologic Report on the
DESERT QUEEN URANIUM PROSPECT
Emery County, Utah

RECEIVED
SEP 20 1955

I. Location:

The Desert Queen Uranium Prospect will be considered in four distinct units, the Lower, Upper, Deep and School section. These groups are located on the enclosed geologic map of the area.

All of the claims may be reached by following U. S. Highway 50, west out of Green River, Utah for four miles to the junction with Utah 24. Then turn south on Utah 24 for a distance of twelve miles.

II. Ownership:

The Desert Queen Uranium Prospect consists of the following claims:

Lower Group:	
Desert Queen 1 to 4 incl. Long Shot 2 and 3	6 claims
Upper Group:	
Desert Queen 5 to 15 Desert Queen 5A, 12A & 15A	14 claims
Deep Group:	
Desert Queen 16 to 75	60 claims
School Section:	
Sec. 36, T. 22S, R. 14E. Equivalent to 32 claims	32 claims
TOTAL -	112 claims

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

An extensive title check has been made on the property by Ray-Quinney & Nebeker, Law firm, residing in the Kearns Building, Salt Lake City, Utah. It appears that all necessary requirements have been met to be in accordance with the Federal and State mining statures.

A mining agreement was entered into on the 21st day of October, 1954, between the Desert Queen Uranium Corporation and the Vitro Uranium Corporation, a division of the Vitro Corporation. Under this mining contract, Vitro Minerals Corporation assumes responsibility of exploration, mining and management of this property.

III. History:

The Morrison formation has been known to contain uranium mineralization in the Green River Area for many years. But it wasn't until the summer of 1954 that the Four Corners Uranium Corporation discovered ore of large tonnage and good grade. This discovery was made by drilling down dip from high grade carnotite ore pockets. The Four Corners Uranium discovery was a black uranium ore of very low vanadium content. A definite mineral determination is being made by the United States Geologic Service at the present time, but the uranium mineralization appears to be urananite.

Since the Four Corners discovery, several other large ore bodies have been found both north and south of the Four Corners property, as well as many small ore bodies along the Salt Wash Rim.

* * *

Major ore bodies discovered in the area are as follows:

Uranium Prospectors Company, Limited, have made a major ore discovery just southeast of the Four Corners property.

Haile Mining Company, had an option on what appears to be a major ore body just south of the Uranium Prospectors' ore body. Northeast of the Four Corners property, Monte Carlo and Monument Uranium in a joint exploration program have drilled out a major ore body.

To list a few of the minor ore discoveries in the general area, the Nixon Uranium Company's many small mines along the Salt Wash outcropping south of the Four Corners property and north of the Desert Queen property, the Vaughey and Vaughey extensive mineralized area north of the Desert Queen property, the Big Bend Mine southeast of the Desert Queen property.

These and other prospects and small mines in the area are plotted on the enclosed geologic map.

IV. General Geology:

The Desert Queen prospect is located on exposures of the Morrison Salt Wash and Brushy Basin, and Cretacious Burro Canyon and Mancos Shale. The Salt Wash member underlies all these claims.

Drilling depth to the ore horizon will vary from 30 ft. on the Lower group, 100 ft. on the Upper group and 1000 ft. on the School section.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

The claims are located on the east flank of the San Rafael Swell, the major structural feature in the area. They cover the area along which the beds make an abrupt change from a very steep dip to a more gentle dip in a northeast direction.

The formations present, from younger to older, and higher to lower in the Section are as follows:

Mancos Shale (Cretaceous) - - - - - - - - -	1000 to 400 ft.
Grey-black carbonacious Thin bedded shales	
Dakota Sandstone (Cretaceous) - - - - - - - -	50 to 0 ft.
Brown sandstone and conglomerates Quartzitic	
Burro Canyon Formation (Cretaceous) - - - -	50 ft.
Brown sandstones and conglomerates and some grey shales	
Brushy Basin Shale (Jurassic) - - - - - - - -	350 to 250 ft.
Red and grey bentonite shales with hard siltstone bands	
Salt Wash Sandstone (Jurassic) - - - - - -	250 ft.
Lt. Brown and grey, coarse to fine- grained sandstones with shale lenses	
Summerville Formation (Jurassic) - - - - -	150 ft.
Red and brown shales with gypsum bands and veins	

V. Uranium Occurences:

Lower Group:

One small, thin deposit is located on the Desert Queen #1 claim. Approximately four tons of ore were shipped from this area to the Vitro Uranium Company's mill in Salt Lake City. The settlement sheet on this shipment showed a uranium content of 0.28%.

Another small deposit is located on the April #1 claim, which overlays the Desert Queen #3 claim and pre-dates the Desert Queen location.

* * *

One core hole DC-1, drilled on the Desert Queen #1 claim, encountered 3.0 ft. of 0.35% U_3O_8. Fourteen wagon drill holes around this hole did not discover any extension of this ore hole.

Upper Group:

Six holes were drilled down on the Upper group on wide spacing. No mineralization was found in this drilling.

Erni and Company have drilled out some ore just south of the Upper group.

Deep Group:

Eleven holes have been drilled on the Deep group. Five of these holes showed some mineralization.

Drill logs and probe records for all holes drilled on the Desert Queen property are enclosed in this report. The enclosed map of the Desert Queen claims shows the location of these holes.

VI. Uranium Ore Possibilities:

It is the writer's opinion that the ore possibility of these claims is favorable.

The drilling and discoveries to date point to a north-east-south trending channel.

The drilling on the Desert Queen prospect has been in an attempt to locate this channel. Drilling has been done on 1000 ft. or greater centers, and many areas covered by the claims have not been explored at all.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

I believe that further drilling will locate this channel. Exploration cost will be high, but the possible economic gains warrant this expenditure.

VII. Conclusions and Recommendations:

The presence of strong uranium mineralization in a well-defined channel heading to cross the Desert Queen property, and the demonstrated persistence of mineralization in this channel lead the writer to the conclusion that the Desert Queen property has good potentialities of becoming an ore producer.

The construction of access roads or the extension of existing facilities to all areas of the claims is recommended.

Exploration can best be initiated by core drilling the remaining claims on 1,000 foot centers, in a staggered pattern to cut a south-southeast trending channel. Drill holes should be so located that in an east-west direction a maximum of 500 feet separates the drill holes.

It is recommended that a 30,000 foot drilling program be initiated with core being taken only through the ore section. It is tentatively estimated that the average cost of this drilling will be approximately $2.00/ft.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

Cancelled

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED SEP 20 1956

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

Not to be filled in by applicant

Docket No. DMEA-3984
Metal or Mineral Uranium
Date Received 9/20/56
Estimated Cost $46,527.00
Participation (Government %)

INSTRUCTIONS

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

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah Ph. Salt Lake 7-3681

(*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

See attached sheet

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

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

Lessee, see attached sheet

(*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

None

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

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

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

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

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

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

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

Uranium and uranium-bearing minerals

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

(*c*) The work will start within 30 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

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 September 14, 1955

VITRO MINERALS CORPORATION
(Applicant)

By [signature]

VICE PRESIDENT

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

RECEIVED
SEP 1955

APPLICATION

FOR AID IN AN EXPLORATION PROJECT,

PURSUANT TO DMEA ORDER 1,

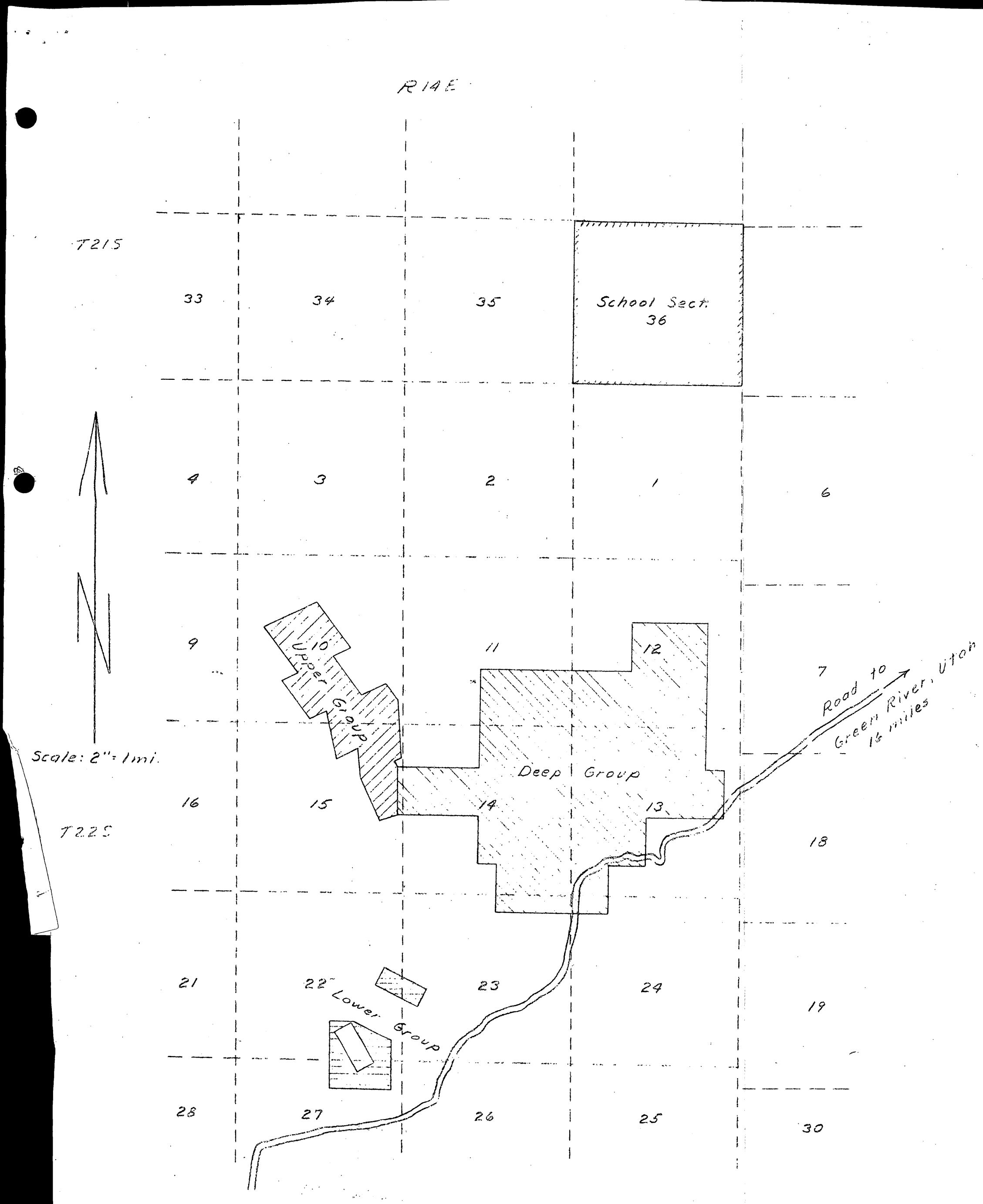
UNDER

THE DEFENSE PRODUCTION ACT OF 1950,

AS AMENDED

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

September 14, 1955



AREA MAP OF VITRO - DESERT QUEEN PROPERTIES, GREEN RIVER MINING DISTRICT, EMERY COUNTY, UTAH

12/1/54

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Area Map . . . . . Frontispiece

Text of Application . . . . . Pages 1 - 13

Geologic Report by C. H. Smith . . . . following Pg. 13

Enclosed in Separate Envelope I

Plate A . . . . . .Survey Map

Plate B . . . . . .Upper Group, Desert Queen

Plate C . . . . . Lower Group, Desert Queen (Drilling to date)

Plate D . . . . . Deep Group, Desert Queen

Plate E . . . . . Geologic Map

Plate F . . . . . School Section

Plate G . . . . . Lower Group, Desert Queen (Proposed Drilling)

Enclosed in Separate Envelope II

UTAH STATE LEASE ON SCHOOL SECTION

MINING AGREEMENT

SETTLEMENT SHEET

DRILL HOLE LOGS

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

DMEA LOAN APPLICATION

* * *

1. (a) VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah
Salt Lake 7-3681

(b) VITRO MINERALS CORPORATION, a Delaware Corporation, is a joint subsidiary of the VITRO CORPORATION OF AMERICA, a Delaware Corporation, and ROCHESTER AND PITTSBURGH COAL COMPANY, a Pennsylvania Corporation.

(c) POTTER, CHARLES J., President
Rochester and Pittsburgh Coal Co.
Indiana, Pennsylvania

HALL, WILLIAM B. JR., Vice President
Vitro Uranium Company
600 West 33rd South
Salt Lake City, Utah

DEWNE, WILLIAM H. JR., Secretary
Vitro Corporation of America
261 Madison Avenue
New York City 16, N. Y.

RUDER, RAYMOND T., Treasurer
Vitro Corporation of America
261 Madison Avenue
New York 16, N. Y.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

3. (a) Applicant's property rights:

Properties are located in the Green River District, Emery County, Utah. The properties are divided into four groups totaling 81 unpatented lode claims and 1 State School Section. These groups are listed below:

(1) Lower Group Claims (7 unpatented lode claims):

Long Shot #2
Long Shot #3
Hard Luck
Desert Queen #1
Desert Queen #2
Desert Queen #3
Desert Queen #4

These claims are located in the S.E. quarter of Section 22, T. 22 S., R. 14 E., S.L.M.

These claims are shown in their true position on the enclosed survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(2) Upper Group Claims (14 unpatented lode claims):

Desert Queen #5
Desert Queen #5A
Desert Queen #6
Desert Queen #7
Desert Queen #8
Desert Queen #9
Desert Queen #10
Desert Queen #11
Desert Queen #12
Desert Queen #12A
Desert Queen #13
Desert Queen #14
Desert Queen #15
Desert Queen #15A

These claims are located in the S.E. quarter of Section 10 and the N.E. quarter of Section 15, T. 22S., R. 14 E., S.L.M.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

These claims are shown in their true position on the enclosed certified survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(3) Deep Group Claims (60 unpatented lode claims):

Desert Queen #16 through #75, inclusive.

These claims are located in Sections 11, 12, 13 and 14, T. 22 S., R. 14 E., S.L.M.

These claims are shown in their true position on the enclosed survey map. The survey was done by Mr. John Bene, C. E., a registered surveyor in the State of Utah. (See Plate A)

(4) The Vitro Minerals Corporation holds a State of Utah Uranium and Vanadium Minerals Lease on Section 36, T. 21 S., R. 14 E., S.L.M. This section is part of the Desert Queen Prospect. A copy of this lease is enclosed.

(b) The property is known as the DESERT QUEEN MINE. This name is in reference to the workings on the Desert Queen #1 claim.

(c) Vitro Uranium Company entered into a joint venture contract with the Desert Queen Uranium Company on October 21, 1954. This contract has been assigned to Vitro Minerals Company and been accepted by the Desert Queen Uranium Company.

The joint venture calls for Vitro Uranium (Minerals) Company to have a 51% net interest in the property in consideration of accepting responsibility for management, exploration and mining of the property.

(d) A copy of the mining agreement and acceptance of assignment to Vitro Minerals is enclosed in this application.

(e) NONE.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

(f) Recorded Location Notices:

Claim Name	Book	Page	Date
Long Shot #2	J-21	530	May 17, 1954
Long Shot #3	J-21	531	May 17, 1954
Hard Luck	J-21	532	May 17, 1954
Desert Queen #1	J-17	563	Mar. 8, 1954
Desert Queen #2	J-17	564	Mar. 8, 1954
Desert Queen #3	J-17	565	Mar. 8, 1954
Desert Queen #4	J-17	566	Mar. 8, 1954
Desert Queen 4 (Four)	J-62	113	Nov. 15, 1954
Desert Queen #5	J-18	299	Mar. 17, 1954
Desert Queen #5A	J-63	158	Nov. 17, 1954
Desert Queen #6	J-18	300	Mar. 17, 1954
Desert Queen #7	J-18	301	Mar. 17, 1954
Desert Queen #8	J-18	302	Mar. 17, 1954
Desert Queen #9	J-18	303	Mar. 17, 1954
Desert Queen #10	J-18	304	Mar. 17, 1954
Desert Queen #11	J-18	305	Mar. 17, 1954
Desert Queen #12	J-18	306	Mar. 17, 1954
Desert Queen #12A	J-63	157	Nov. 17, 1954
Desert Queen #13	J-40	114	Aug. 24, 1954
Desert Queen #14	J-40	115	Aug. 24, 1954
Desert Queen #15	J-40	116	Aug. 24, 1954
Desert Queen #15A	J-63	159	Nov. 17, 1954
Desert Queen #16	J-51	439	Sept. 28, 1954
Desert Queen #17	J-51	440	Sept. 28, 1954
Desert Queen #18	J-51	441	Sept. 28, 1954
Desert Queen #19	J-51	442	Sept. 28, 1954
Desert Queen #20	J-51	443	Sept. 28, 1954
Desert Queen #21	J-51	444	Sept. 28, 1954
Desert Queen #22	J-51	445	Sept. 28, 1954
Desert Queen #23	J-51	446	Sept. 28, 1954
Desert Queen #24	J-51	447	Sept. 28, 1954
Desert Queen #25	J-51	448	Sept. 28, 1954
Desert Queen #26	J-51	449	Sept. 28, 1954
Desert Queen #27	J-51	450	Sept. 28, 1954
Desert Queen #28	J-51	451	Sept. 28, 1954
Desert Queen #29	J-51	452	Sept. 28, 1954
Desert Queen #30	J-51	453	Sept. 28, 1954
Desert Queen #31	J-51	454	Sept. 28, 1954
Desert Queen #32	J-51	455	Sept. 28, 1954
Desert Queen #33	J-51	456	Sept. 28, 1954
Desert Queen #34	J-51	457	Sept. 28, 1954
Desert Queen #35	J-51	458	Sept. 28, 1954
Desert Queen #36	J-51	459	Sept. 28, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

Recorded Location Notices: (Cont'd)

Claim Name	Book	Page	Date
Desert Queen #37	J-51	460	Sept. 28, 1954
Desert Queen #38	J-51	461	Sept. 28, 1954
Desert Queen #39	J-51	462	Sept. 28, 1954
Desert Queen #40	J-51	463	Sept. 28, 1954
Desert Queen #41	J-51	464	Sept. 28, 1954
Desert Queen #42	J-51	465	Sept. 28, 1954
Desert Queen #43	J-51	466	Sept. 28, 1954
Desert Queen #44	J-51	467	Sept. 28, 1954
Desert Queen #45	J-51	468	Sept. 28, 1954
Desert Queen #46	J-51	469	Sept. 28, 1954
Desert Queen #47	J-51	470	Sept. 28, 1954
Desert Queen #48	J-51	471	Sept. 28, 1954
Desert Queen #49	J-51	472	Sept. 28, 1954
Desert Queen #50	J-53	82	Oct. 2, 1954
Desert Queen #51	J-53	83	Oct. 2, 1954
Desert Queen #52	J-53	84	Oct. 2, 1954
Desert Queen #53	J-53	85	Oct. 2, 1954
Desert Queen #54	J-53	86	Oct. 2, 1954
Desert Queen #55	J-53	87	Oct. 2, 1954
Desert Queen #56	J-53	88	Oct. 2, 1954
Desert Queen #57	J-53	89	Oct. 2, 1954
Desert Queen #58	J-53	90	Oct. 2, 1954
Desert Queen #59	J-53	91	Oct. 2, 1954
Desert Queen #60	J-53	92	Oct. 2, 1954
Desert Queen #61	J-53	93	Oct. 2, 1954
Desert Queen #62	J-53	94	Oct. 2, 1954
Desert Queen #63	J-53	95	Oct. 2, 1954
Desert Queen #64	J-53	96	Oct. 2, 1954
Desert Queen #65	J-53	97	Oct. 2, 1954
Desert Queen #66	J-56	7	Oct. 14, 1954
Desert Queen #67	J-56	8	Oct. 14, 1954
Desert Queen #68	J-56	9	Oct. 14, 1954
Desert Queen #69	J-56	10	Oct. 14, 1954
Desert Queen #70	J-56	11	Oct. 14, 1954
Desert Queen #71	J-56	12	Oct. 14, 1954
Desert Queen #72	J-62	114	Nov. 15, 1954
Desert Queen #73	J-62	115	Nov. 15, 1954
Desert Queen #74	J-62	116	Nov. 15, 1954
Desert Queen #75	J-62	117	Nov. 15, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

Application under Circular 7:

Claim Name	Book	Page	Date
Desert Queen #1	J-22	434	May 28, 1954
Desert Queen #2	J-22	435	May 28, 1954
Desert Queen #3	J-22	436	May 28, 1954
Desert Queen #4	J-22	437	May 28, 1954
Desert Queen #5	J-22	438	May 28, 1954
Desert Queen #6	J-22	439	May 28, 1954
Desert Queen #7	J-22	440	May 28, 1954
Desert Queen #8	J-22	441	May 28, 1954
Desert Queen #9	J-22	442	May 28, 1954
Desert Queen #10	J-22	443	May 28, 1954
Desert Queen #11	J-22	444	May 28, 1954
Desert Queen #12	J-22	445	May 28, 1954

Amended Location Notice:

Claim Name	Book	Page	Date
Desert Queen #1	J-40	141	Aug. 24, 1954
Desert Queen #2	J-40	142	Aug. 24, 1954
Desert Queen #3	J-40	143	Aug. 24, 1954
Desert Queen #4	J-62	113	Nov. 15, 1954
(D. Q. #4 also Amended -	J-40	144	Aug. 24, 1954)
Desert Queen #5	J-40	145	Aug. 24, 1954
Desert Queen #6	J-40	146	Aug. 24, 1954
Desert Queen #7	J-40	147	Aug. 24, 1954
Desert Queen #8	J-40	148	Aug. 24, 1954
Desert Queen #9	J-40	149	Aug. 24, 1954
Desert Queen #10	J-40	150	Aug. 24, 1954
Desert Queen #11	J-40	151	Aug. 24, 1954
Desert Queen #12	J-40	152	Aug. 24, 1954
(No. 12 also Amended -	J-63	156	Nov. 17, 1954

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

4. Physical Description:

(a) Previous to Vitro Minerals' participation in the Desert Queen prospect, nine (9) core holes had been drilled by the Desert Queen Uranium Company.

Since participation in this venture by Vitro Minerals Company, fourteen (14) wagon drill holes, six (6) core holes and fourteen (14) rotary non-core holes have been drilled, at Vitro Minerals Corporation's expense. The logs on these holes are enclosed and are listed as follows:

(1) Wagon Drill holes
D-1 thru 14, inclusive

(2) Core Drill holes
DC-10 thru 15, inclusive

(3) Rotary Drill holes
DR-1 thru 14, inclusive

A four (4) ton shipment of uranium was made from the Hard Luck #1 claim. This ore came from a very small ore lense. There appears to be little extension of this ore. The settlement sheet on this shipment is enclosed.

All parts of the property are easily accessible to four-wheel drive type vehicles and all outcroppings can be examined during one day in the field.

(b) There is no current production from the property and only the above past shipment has been made from the property.

Exploration has not proceeded far enough at this time to estimate the grade or tonnage of reserve in the mineralized area found on the Deep Group of claims outlined by Drill holes DC-13, DC-14, DC-15, DR-1, DR-8, DR-11, DR-12, DR-13 and DR-14.

The location of all drill holes are plotted on the enclosed maps, (see Plates B, C, D) and logs and probe results for these holes are enclosed with this application.

(c) The Desert Queen property lies in a strong north-south mineralized zone located along the east side of the San Rafael Swell.

The mineralization is a uraninite type of ore, with some carnotite and autunite (oxidation-type) ores. The ore deposits are bedded and lie in small lenses and rolls in the Salt Wash sand member of the Morrison formation.

Structurally, the beds dip 3 to 4 degrees to the north-east. One fault of prominence was located on the property. This fault strikes N 50 W across the southwest corner of the Deep Group of claims. A geologic map showing faults, mines and prospects in the area is enclosed with this application. (See Plate E)

The Vitro Minerals Corporation has already expended in excess of twenty thousand dollars in exploration drilling and related costs on these properties. Results to date indicate a channel trend containing favorable mineralization that may indicate the presence of nearby ore bodies. The evidence to support this postulation is given in the geologic report by Cecil H. Smith submitted with this application. Vitro Minerals Corporation's primary reason for wishing to continue this exploration program is to discover these possible uranium deposits of commercial importance, or disprove their presence.

(d) The property is reached by traveling west from Green River, Utah, on U. S. Highway 50, a distance of four miles, thence southwest on maintained Utah Highway 24 for twelve miles to the property. The nearest shipping point would be Green River, Utah, a distance of sixteen miles.

Vitro Uranium Company maintains three loading docks at Green River. The ore is loaded on the railroad and shipped to Murray, Utah, where it is sampled by the Utah Sampling Company, and then transported to the Vitro Uranium Mill in South Salt Lake City.

Green River, Utah is undergoing "growing pains" at the present time. Motel and trailer accommodations may be obtained and several housing projects are planned for the near future.

(e) All necessary manpower, materials and supplies, equipment, and water may be obtained in Green River, Utah or Grand Junction, Colorado, a distance of 104 miles from Green River.

Power may be obtained either from a small portable power plant or by tapping the new power line running from Castle Rock, Utah to Moab, Utah. This line passes just a few miles to the north of the Desert Queen property.

5. The Exploration Project:

(a) This application for loan is for the purpose of exploring for uranium or other fissionable materials.

(b) The proposed exploration project, under this loan, calls for drilling a string of core holes in an east-west line on 500 ft. centers. These holes will be drilled across the Upper and Deep group of claims. These holes will be for the purpose of exploring the north-south area of favorable mineralization indicated by previous exploration work on the prospect, plus the existence of known ore bodies in the immediate vicinity of the Desert Queen property.

Further core drilling is planned on 1000 ft. centers to evaluate other possible zones of enrichment on the property. Some access roads will be necessary to do this drilling. Proposed drilling is indicated on the enclosed maps. (Plates B, C, D, F) Proposed holes under this program are marked as DMEA holes No. 1 thru 39, inclusive.

(c) The work will start within thirty (30) days and be completed within six (6) months from the date of an exploration project contract.

(d) The Vitro Minerals Corporation has conducted a number of exploratory drilling operations for uranium, both on the Colorado Plateau and in Wyoming. These operations are under the supervision of experienced geologists and engineers and careful, scientific attention is given to all stages of the work. The Corporation is currently engaged

in a strip mining operation in the Gas Hills District, Fremont County, Wyoming on a discovery made by exploratory drilling. The Corporation has had the distinction of being the largest shipper into the Riverton Buying Station for the past several months.

The Vitro Minerals Corporation is jointly owned by the Vitro Corporation of America and the Rochester and Pittsburgh Coal Company of Indiana, Pennsylvania. The Vitro Uranium Company, operators of the Vitro mill in Salt Lake City, is a division of the Vitro Corporation of America. The Vitro Minerals Corporation has direct access to the mining "know-how" of Rochester and Pittsburgh, as well as to an ample supply of mining equipment and machinery. The Vitro Minerals Corporation likewise benefits from the facilities offered by the Vitro Uranium Company in uranium extraction research and laboratory facilities.

The Desert Queen project will be under the office supervision of J. O. Horton, General Manager of the Vitro Minerals Corporation and under the direct field management of Cecil H. Smith, Division Geologist for the Colorado Plateau. Mr. Smith has had several years experience with the U. S. Vanadium Corporation on the Plateau and is thoroughly familiar with exploration problems in the Green River District.

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

6. **Estimate of Costs:**

(a) Independent Contracts.

1. **Estimated Costs for Plug Drilling (non-Core):**

Depth	Cost per Ft.	Total footage	Extension
0-100	$ 1.00	3900	$ 3900.00
100-200	1.20	3270	3924.00
200-300	1.45	3000	4350.00
300-400	1.70	2550	4335.00
400-500	1.95	1740	3393.00
500-1000	2.30	1250	2875.00

2. **Estimated Costs for Core Drilling:**

0-500	3.50	1800	6300.00
500-1000	4.50	1700	7650.00
TOTALS		19,210 Ft.	$36,727.00
AVERAGE COST PER FT.			$ 1.91

3. **Estimated Costs - Other Equipment:**

Road Work and preparing locations

Bulldozer - 100 Hrs. @ $14.00 per Hr. 1,400.00

TOTAL ESTIMATED COST - CONTRACT WORK $38,127.00

(b) Labor, Supervision, Consultants:

(1) Project Geologist

6 months @ $550.00 per mo.	$ 3300.00

(1) Project Supervisor

6 months @ $650.00 per mo.	3900.00
TOTAL SUPERVISORY COSTS	$ 5400.00

The Project Supervisor and Geologist will survey in and run elevations on all drill locations, supervise road building and dozer work, supervise drilling, collect bit samples, construct lithologic strip logs, probe all holes and keep up field geologic interpretations on all data.

(c) Operating materials and supplies:

Such items that are not covered under independent contracts will be furnished without charge by Vitro Minerals Corporation.

(d) Operating Equipment:

Estimated fuel and oil for, and maintenance of, one pickup truck, to be furnished by Vitro.

6 Months @ $100.00 per mo.	$ 600.00

(e) Rehabilitation and Repairs:

NONE

(f) New Buildings, Improvements, Installations:

NONE

VITRO MINERALS CORPORATION
600 West 33rd South
Salt Lake City, Utah

(g) Miscellaneous:

1. Analytical Work.

Estimated total of 60 volumetric assays at $5.00 each	$ 300.00
2. Direct accounting costs at $50.00 per mo.	300.00

(h) Contingencies:

NONE

TOTAL LOAN APPLICATION	$ 46,527.00

7. Vitro Minerals Corporation is prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation, in the form of direct monetary contribution.

Vitro Minerals Corporation agrees to carry the full cost of the operation on a monthly basis and will submit monthly statements to the Defense Minerals Exploration Administration, for pro rata reimbursement.

Respectfully submitted,

VITRO MINERALS CORPORATION

BY: W B Hall

W. B. HALL,
Vice President

GEOLOGIC REPORT ON THE DESERT QUEEN URANIUM PROSPECT
Emery County, Utah

VITRO MINERALS CORPORATION
3324 South State
Salt Lake City, Utah

Cecil H. Smith

August 3, 1955

Geologic Report on the
DESERT QUEEN URANIUM PROSPECT
Emery County, Utah

I. Location:

The Desert Queen Uranium Prospect will be considered in four distinct units, the Lower, Upper, Deep and School section. These groups are located on the enclosed geologic map of the area.

All of the claims may be reached by following U. S. Highway 50, west out of Green River, Utah for four miles to the junction with Utah 24. Then turn south on Utah 24 for a distance of twelve miles.

II. Ownership:

The Desert Queen Uranium Prospect consists of the following claims:

Lower Group:	
Desert Queen 1 to 4 incl, Long Shot 2 and 3	6 claims
Upper Group:	
Desert Queen 5 to 15 Desert Queen 5A, 12A & 15A	14 claims
Deep Group:	
Desert Queen 16 to 75	60 claims
School Section:	
Sec. 36, T. 22S, R. 14E. Equivalent to 32 claims	32 claims
TOTAL -	112 claims

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

An extensive title check has been made on the property by Ray-Quinney & Nebeker, Law firm, residing in the Kearns Building, Salt Lake City, Utah. It appears that all necessary requirements have been met to be in accordance with the Federal and State mining statures.

A mining agreement was entered into on the 21st day of October, 1954, between the Desert Queen Uranium Corporation and the Vitro Uranium Corporation, a division of the Vitro Corporation. Under this mining contract, Vitro Minerals Corporation assumes responsibility of exploration, mining and management of this property.

III. History:

The Morrison formation has been known to contain uranium mineralization in the Green River Area for many years. But it wasn't until the summer of 1954 that the Four Corners Uranium Corporation discovered ore of large tonnage and good grade. This discovery was made by drilling down dip from high grade carnotite ore pockets. The Four Corners Uranium discovery was a black uranium ore of very low vanadium content. A definite mineral determination is being made by the United States Geologic Service at the present time, but the uranium mineralization appears to be urananite.

Since the Four Corners discovery, several other large ore bodies have been found both north and south of the Four Corners property, as well as many small ore bodies along the Salt Wash Rim.

* * *

Major ore bodies discovered in the area are as follows:

Uranium Prospectors Company, Limited, have made a major ore discovery just southeast of the Four Corners property.

Haile Mining Company, had an option on what appears to be a major ore body just south of the Uranium Prospectors' ore body. Northeast of the Four Corners property, Monte Carlo and Monument Uranium in a joint exploration program have drilled out a major ore body.

To list a few of the minor ore discoveries in the general area, the Nixon Uranium Company's many small mines along the Salt Wash outcropping south of the Four Corners property and north of the Desert Queen property, the Vaughey and Vaughey extensive mineralized area north of the Desert Queen property, the Big Bend Mine southeast of the Desert Queen property.

These and other prospects and small mines in the area are plotted on the enclosed geologic map.

IV. General Geology:

The Desert Queen prospect is located on exposures of the Morrison Salt Wash and Brushy Basin, and Cretacious Burro Canyon and Mancos Shale. The Salt Wash member underlies all these claims.

Drilling depth to the ore horizon will vary from 30 ft. on the Lower group, 100 ft. on the Upper group and 1000 ft. on the School section.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

The claims are located on the east flank of the San Rafael Swell, the major structural feature in the area. They cover the area along which the beds make an abrupt change from a very steep dip to a more gentle dip in a northeast direction.

The formations present, from younger to older, and higher to lower in the Section are as follows:

Mancos Shale (Cretaceous) - - - - - - - - -	1000 to 400 ft.
Grey-black carbonacious Thin bedded shales	
Dakota Sandstone (Cretaceous) - - - - - - - -	50 to 0 ft.
Brown sandstone and conglomerates Quartzitic	
Burro Canyon Formation (Cretaceous) - - - -	50 ft.
Brown sandstones and conglomerates and some grey shales	
Brushy Basin Shale (Jurassic) - - - - - - - -	350 to 250 ft.
Red and grey bentonite shales with hard siltstone bands	
Salt Wash Sandstone (Jurassic) - - - - - -	250 ft.
Lt. Brown and grey, coarse to fine- grained sandstones with shale lenses	
Summerville Formation (Jurassic) - - - - -	150 ft.
Red and brown shales with gypsum bands and veins	

V. Uranium Occurences:

Lower Group:

One small, thin deposit is located on the Desert Queen #1 claim. Approximately four tons of ore were shipped from this area to the Vitro Uranium Company's mill in Salt Lake City. The settlement sheet on this shipment showed a uranium content of 0.28%.

Another small deposit is located on the April #1 claim, which overlays the Desert Queen #3 claim and pre-dates the Desert Queen location.

* * *

One core hole DC-1, drilled on the Desert Queen #1 claim, encountered 3.0 ft. of 0.35% U_3O_8. Fourteen wagon drill holes around this hole did not discover any extension of this ore hole.

Upper Group:

Six holes were drilled down on the Upper group on wide spacing. No mineralization was found in this drilling.

Erni and Company have drilled out some ore just south of the Upper group.

Deep Group:

Eleven holes have been drilled on the Deep group. Five of these holes showed some mineralization.

Drill logs and probe records for all holes drilled on the Desert Queen property are enclosed in this report. The enclosed map of the Desert Queen claims shows the location of these holes.

VI. Uranium Ore Possibilities:

It is the writer's opinion that the ore possibility of these claims is favorable.

The drilling and discoveries to date point to a north-east-south trending channel.

The drilling on the Desert Queen prospect has been in an attempt to locate this channel. Drilling has been done on 1000 ft. or greater centers, and many areas covered by the claims have not been explored at all.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

I believe that further drilling will locate this channel. Exploration cost will be high, but the possible economic gains warrant this expenditure.

VII. Conclusions and Recommendations:

The presence of strong uranium mineralization in a well-defined channel heading to cross the Desert Queen property, and the demonstrated persistence of mineralization in this channel lead the writer to the conclusion that the Desert Queen property has good potentialities of becoming an ore producer.

The construction of access roads or the extension of existing facilities to all areas of the claims is recommended.

Exploration can best be initiated by core drilling the remaining claims on 1,000 foot centers, in a staggered pattern to cut a south-southeast trending channel. Drill holes should be so located that in an east-west direction a maximum of 500 feet separates the drill holes.

It is recommended that a 30,000 foot drilling program be initiated with core being taken only through the ore section. It is tentatively estimated that the average cost of this drilling will be approximately $2.00/ft.

* * *

Vitro Minerals Corporation
3324 South State
Salt Lake City, Utah

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 N. DIVISION STREET
SPOKANE 2, WASHINGTON

AG 19 4 PM 1955

Mr. E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Form No. 4 5M 4-54
Kelly Co. L-1861

Vitro URANIUM COMPANY

A DIVISION OF VITRO CORPORATION OF AMERICA
600 WEST 33rd SOUTH P. O. BOX 67

Receiving Station ..... Salt Lake City, Utah November 30 1954
Liquidation No. 651 Lot No. 2750 Shippers Lot No. DQ #1
Bought of Vitro Uranium Co. - Desert Queen No. 1 A.E.C. License No. P-1980
Address .....
Type of Ore Carnotite Date Received 11-16-54
Mining Claim Hardluck Mining District Green River, Emery County, Utah Pile No. .....

Lot No.	Net Weight Tons	H_2O	Dry Weight Tons	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$		CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	
2750	3.835	4.10	3.678	0.28	0.26	12.03		20.60	19.13	884.93	

	Per Lb.	Per Ton	Short Tons	Total Value
U308				
0.28% - 5.6# at	$ 3.50	$ 19.60	3.678	$ 72.09
Development allowance 5.6# at	.50	2.80	3.678	10.30
Premium in excess of 4 lbs. per ton 1.6# (5.6# - 4# = 1.6#) at	.75	1.20	3.678	4.41
U308		$ 23.60	3.678	$ 86.80
Haulage allowance		6.00	3.835	23.01
Total				$109.81
Less: Hi-Lime Penalty 12.03% - 6.00% = 6.03%; 6.03% x $0.30 = $1.81 + $1.00		2.81	3.678	10.34
Total U308 Value				$ 99.47
V205				
0.26% - 5.2# at	.31	1.612	3.678	5.93
Total Gross Price				$105.40

CORRECT
CHECKED

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Vitro Uranium Co.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Vitro Uranium Co., effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement.

.....
Seller or Agent

Buyer assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

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UTAH STATE LEASE
FOR

APPLICATION NO 5059 GRANT: School

URANIUM AND VANADIUM

THIS INDENTURE OF LEASE AND AGREEMENT entered into in duplicate this 17 day of September 19 54 by and between the State Land Board, acting in behalf of the State of Utah, hereinafter called the Lessor, and

NITRO URANIUM COMPANY

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

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

All of Section Thirty-six (36), Township Twenty-one (21) South, Range Fourteen (14) East, Salt Lake Meridian.

containing a total of 640.00 acres, more or less, together with the right to use and occupy so much of the surface of said land as may be required for all purposes reasonably incident to the mining, removal, and disposal of said minerals, according to the provisions of this lease, for a period of ten years, beginning January 2nd, first succeeding the date of issuance hereof, and as long thereafter as said minerals may be produced in commercial quantities from said lands, upon condition that at the end of each twenty (20) year period succeeding the first day of the year in which this lease is issued, such re-adjustment of terms and conditions may be made as the Lessor may determine to be necessary in the interest of the State.

ARTICLE I

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

ARTICLE II

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

ARTICLE III

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE IV

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

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

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

ARTICLE V

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

ARTICLE VI

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

ARTICLE VII

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

ARTICLE VIII

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

ARTICLE IX

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

ARTICLE X

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

ARTICLE XA

Lessee agrees to reimburse the owner or lessee of the surface of the leased premises, for actual damages thereto and injury to improvements thereon resulting from LESSEE'S operations hereunder provided that Lessee shall not be liable for any damages or injuries as beyond LESSEE'S control

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ARTICLE XI

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

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

STATE OF UTAH, STATE LAND BOARD

By
EXECUTIVE SECRETARY LESSOR

APPROVED AS TO FORM
E. R. CALLISTER
ATTORNEY GENERAL
By Glen B. Fright

Vitro Uranium Company, a Division
of Vitro Corporation of America
W B Hall, Gen. Mgr
LESSEE

STATE OF UTAH
COUNTY OF Salt Lake } ss.

On the 19 day of Oct 1954, personally appeared before me a n Smith who being by me duly sworn did say that he is the Executive Secretary of the State Land Board of the State of Utah and that said instrument was signed in behalf of said Board by resolution of the Board, and said a n Smith acknowledged to me that said Board executed the same in behalf of the State of Utah.

Given under my hand and seal this 19 day of Oct 1954

My commission Expires: 4/12/58

Glen B Fright
Notary Public, residing at SLC

STATE OF UTAH
COUNTY OF } ss.

On the 8th day of October 1954, personally appeared before me W. B. Hall the signer of the above instrument, who duly acknowledged to me that he executed the same.

Given under my hand and seal this 8th day of October 1954

My commission Expires: July 19, 1956

Ida R. Smith
Notary Public, residing at Salt Lake City, Utah

STATE OF UTAH
COUNTY OF } ss.

On the 8th day of October 1954, personally appeared before me W. B. Hall who being by me duly sworn did say that he is ~~an officer~~ General Manager of Vitro Uranium Co., a Division of Vitro Corporation of America and that said instrument was signed in behalf of said corporation by resolution of its Board of Directors, and said W. B. Hall acknowledged to me that said corporation executed the same.

Given under my hand and seal this 8th day of October 1954

My commission Expires: July 19, 1956

Ida R. Smith
Notary Public, residing at Salt Lake City, Utah

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MINING AGREEMENT

THIS AGREEMENT, made and entered into by and between DESERT QUEEN URANIUM COMPANY, a corporation of the State of Utah, hereinafter referred to as First Party, and VITRO URANIUM COMPANY, a Division of Vitro Corporation of America, a Delaware corporation, hereinafter referred to as Second Party,

W I T N E S S E T H:

WHEREAS, First Party is the owner of seventy-five (75) unpatented mining claims, situate in the County of Emery, State of Utah, described as follows:

Desert Queen # 1 - 15 inclusive;

Desert Queen #16 - 75 inclusive;

All within Sections 10, 11, 14, and/or 15,

Township 22 South, Range 14 East, Salt Lake Meridian;

and

WHEREAS, Second Party is the lessee from the State of Utah of that particular school section No. 36 situate in Township 21 South Range 14 East, Salt Lake Base and Meridian, Emery County, State of Utah, and

WHEREAS, it is the intent and desire of the parties to jointly explore and develop their said properties, and to obtain therefrom successful, commercial production of ores.

NOW, THEREFORE, in consideration of the mutual covenants and promises herein contained, it is hereby agreed:

I.

EXPLORATION WORK

(a) Second Party will, within ninety (90) days from the date hereof, commence and conduct exploration work upon the above

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described properties and will, within an additional one hundred twenty (120) days, expend therefor the minimum sum of Twenty Thousand Dollars ($20,000) in this manner: at least Thirty-five Hundred Dollars ($3500.00) on each of the three groups, namely, the (1) Desert Queen Nos. 1-15, inclusive; (2) Desert Queen Nos. 16-75, inclusive; (3) the said leased Section 36.

The balance of the said $20,000 of exploration work shall be done upon any part or all of the said properties as Second Party deems best. If the initial exploration of $3500 on each of the three groups reveals or indicates, on any part of the properties, ore deposits having commercial value, then Second Party may use and apply the balance of the $20,000, to-wit, $9500, for development work upon the properties in lieu of further exploration.

(b) The said $20,000 of exploration work shall be completed by Second Party within two hundred ten (210) days from the date hereof.

(c) Upon completion of the aforesaid exploration work, Second Party may, in its discretion, do additional exploration or development work, or both, upon any part or all of the said properties, in an amount of $10,000 or more. If undertaken, such further work shall be completed within two hundred seventy (270) days from the date hereof.

(d) It is understood that exploration or exploration work as herein used includes drilling, trenching, pitting, necessary road building and repair, assay costs, and such other work as is normally included under good mining practices.

II.

FAILURE TO EXPLORE

Upon Second Party's failure to perform the said $30,000 of exploration (including development) work above provided, and in the times set forth, all further interest of Second Party in the said Desert Queen Groups shall immediately terminate, and

Second Party shall thereupon deliver to First Party a duly executed, written release thereof. The said leased Section 36 shall continue subject to this agreement. Failure to complete the said $20,000 worth of exploration work as herein provided shall constitute a breach of this Agreement, and shall work a forfeiture.

III.

CONVEYANCES

Upon completion by Second Party of the said $30,000 worth of exploration work, (including any said development work) First Party shall, upon written demand of Second Party, tender and deliver to Second Party a duly executed quit-claim deed conveying to Second Party a one-half (½) interest in all of the above described Desert Queen claims. At the same time, Second Party shall tender to First Party its duly executed assignment and conveyance to Second Party of one-half (½) interest in the said State lease on Section 36, and shall take all steps necessary to get the approval thereof from the State of Utah.

IV.

POSSESSION

Second Party, during the term of this Agreement, shall, as between the parties, have exclusive possessinn of the said properties except if surrendered as herein provided.

V.

RECOVERY OF INITIAL EXPLORATION COSTS

The expenditure for all of the initial exploration work, including development, up to the said amount of $30,000 shall be recoverable by Second Party out of gross ore proceeds from production of the properties at the rate of ten percent (10%) thereof, and as received. In the event governmental D. M. E. A. loans are procured

by Second Party for said work, only that portion of the loan expended by Second Party and which it becomes obligated to repay, shall be thus recoverable and then only to the extent of the said 10%. Any required repayment of the said loan or loans shall be and remain the sole responsibility of the Second Party, but nothing herein is intended to restrict Second Party's repayment of such loans in lump-sum amounts.

VI.

DEVELOPMENT AND MINING

If, as a result of the exploration herein described, commercial ore bodies are discovered upon any of the said properties, it is hereby agreed that such further development will, within a reasonable time, be undertaken and diligently furthered by Second Party strictly in accord with the best geological, engineering, and minerlike practices, said work to be conducted solely under the management and supervision of Second Party. Second Party shall likewise undertake the mining of said properties as soon as may be reasonably practicable. Said mining shall be diligently prosecuted in a minerlike, economical manner, with the object of attaining large-scale and profitable production.

Starting two hundred seventy (270) days from the date hereof, Second Party will perform or cause to be performed quarterly, not less than one hundred fifty (150) miner shifts of eight (8) hours upon the said properties, in exploration, development and/or mining work, while this agreement is in force, subject to the defeasance clause in Article XVII below. If Second Party surrenders to First Party part of the property as therein provided, this work requirement shall abate proportionately. This work requirement shall be suspended during any time when conditions beyond Second Party's control preclude operation of the properties at a net profit. All costs of exploration, development and mining shall be paid originally

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by Second Party, subject to recovery as herein provided.

VII.

TOOLS AND EQUIPMENT

All items of tools, supplies and equipment that may be required for such purpose shall be and remain the property of Second Party, except that title to such equipment as cannot be removed without impairing structural or physical strength of any shaft, incline, tunnel, adit, or stope upon or within any of said properties, shall pass to the owner or owners of the particular properties under this Agreement.

VIII.

MARKETING ORES

Second Party shall have the exclusive right and responsibility of marketing any and all production from the said properties and the sales shall be made at not less than the going market price, consideration being had for freight and hauling costs. It is contemplated that Second Party will be the sole purchaser of uranium and vanadium production from the properties, and Second Party agrees that it will, so far as practicable, purchase all of said ores, amenable to its processes, to the limit of its capacity. If for any reason Second Party reduces its capacity, or elects not to purchase all of the said ores produced from the properties, it agrees that it will not on that account curtail mining production, unless Second Party is unable, by reasonable efforts, to find a purchaser of said ores at a price permitting a reasonable net profit from the said mining operations.

IX.

NET PROCEEDS AND COSTS

First and Second Parties will divide equally between

themselves the net proceeds derived from the sale of the ores produced from the properties under this Agreement, whether the sale is to Second Party or elsewhere. Net proceeds here means gross ore receipts together with bonus payments and development allowance, less costs of exploration, development and mining incurred by Second Party hereunder. Costs shall not include any overhead unless directly attributable to Second Party's work and operations hereunder, and in no event will overhead of its Salt Lake or other offices or plants be included. Costs shall include unreimbursed freight charges, direct supervision of the operations at the site of the property, direct accounting and geologist costs, employee and mine taxes, and such other costs as are normally included under standard accounting practices. Capital items shall be included only to the extent of allowable depreciation thereon, and damage or loss resulting from operations at the property. Assessment work shall be part of costs.

Percentage payments of ten percent (10%) of proceeds to reimburse Second Party as above provided shall also be deducted as a cost item.

Reserves set aside by Second Party for future development work on the property shall be deducted, but not again for development work actually done.

As between the parties hereto, any losses that may be sustained as a result of failure of the properties to attain commercial production, shall be borne by Second Party.

I.

ASSAYS, ACCOUNTING AND DISTRIBUTION

All ores shipped hereunder shall be sampled and assayed separately from other ores marketed by Second Party, and reports made thereof. Such reports shall be made available to First Party on request.

A copy of each settlement sheet of ores sold shall be sent promptly to First Party.

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Second Party shall, so far as possible, keep current accounts of work and operations in accordance with standard accounting practices, and shall, not less than once each quarter hereafter, render to First Party an accounting report thereof. Such records shall be available for First Party's inspection at reasonable times.

Each party's share of the net proceeds, if any, as above defined, shall be distributed to each party not less than quarterly, accompanied by a financial statement prepared by Second Party as above provided. Nothing herein is intended to limit to any particular period Second Party's deduction of costs as described in Article IX above.

XI.

HOLD HARMLESS

Second Party shall post notices at the Mine so as to hold First Party free and clear of any liability arising from Second Party's operations. Second Party will save harmless First Party against all claims and demands whatsoever arising out of Second Party's operations hereunder, including, but not limited to, death and injuries to persons and damage to property.

Second Party shall comply with all applicable statutes with respect to labor it employs on the work and shall protect and save harmless First Party against any payroll taxes or contributions imposed with respect to any employees of the Second Party by any applicable law.

Second Party will take out and carry and maintain full industrial insurance with the Utah State Industrial Commission as required by law for any and all persons employed in and upon the properties by Second Party, and will ascertain that any independent contractor used by Second Party hereunder will do likewise for its employees. Second Party will conduct all operations so as to

fully comply with the laws of the State of Utah and the United States relating to mining, safety regulations, and in every other respect, and will pay and discharge or otherwise dispose of any and all liens, claims, suits, actions, and demands of any nature whatsoever, including claims for injury or death to persons and loss or damage to property caused by or in connection with the performance of Second Party's work under this Agreement.

Second Party will permit the First Party full and free access to the properties for the purpose of such inspection as is necessary to determine compliance with this Agreement and with the usual health and safety regulations.

III.

CONTRACTING

It is understood that Second Party may contract out any or all of the work to be done under this Agreement.

All contract work shall be let at rates and on terms that are competitive with and comparable to rates and terms prevailing in the area. Second Party shall see that every independent contractor used is in compliance with the Workmans Compensation laws as well as the mining laws of Utah as they apply to the properties.

Before any mining lease or other working agreement on a percentage of proceeds or receipts basis is entered into, Second Party shall give First Party written notice thereof, and First Party shall have five (5) days after receipt of said notice in which to object thereto in writing. The objection shall go only to the advisability from the standpoint of mining economics. If such objection is made, the parties shall immediately endeavor in good faith to settle their disagreement. Failing such settlement within five (5) days of receipt of First Party's objection, each party shall name a qualified authority and those two persons shall immediately name a third qualified person. These three shall act as a board of arbitration and shall

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consider the facts and discuss the problem with each party. Within seven (7) days after their appointment, the board as a unit shall render a short, jointly written decision as to the economic advisability of the proposed lease or other working agreement. The decision of the majority of the board shall govern and shall bind both parties. First Party shall have the burden of proving that the proposed lease or working agreement is economically inadvisable.

XIII.

ASSESSMENT WORK

Second Party shall perform the annual assessment work on the above claims for the first year hereafter as required by law. After said first year Second Party shall have the option of giving at least ninety (90) days written notice to First Party of its intention not to do said assessment work on any or all said claims, and First Party shall thereupon have the option of doing said annual labor. After said 90-day period, Second Party shall be relieved of any further obligation to perform said annual labor and shall tender to First Party a quit-claim deed of all Second Party's title and interest in and to any of said Desert Queen claims referred to in said notice.

XIV.

TITLES

Each party represents that so far as is known to it, its officers and agents, no outstanding or adverse interest in its said property now exists not herein mentioned.

Each party hereby warrants that it has such complete title to its respective properties as is possible presently to acquire and further represents and warrants that it will not encumber its properties in any manner (except the said D.M.A.E. loan) or dispose of

E.A.

same during this Agreement without the written consent of the other first obtained. Each party shall defend its title thereto and save the other harmless from and against any adverse claims based upon rights alleged to have existed at the time of the execution of this Agreement. Expenses of defense of any adverse claim arising after this date, or alleged to have matured subsequent to this date shall be divided initially between the parties equally, but shall be deemed an operational expense to be returned to the parties from the proceeds of ore production. Such claims shall be defended by Second Party, but shall not be compromised or settled without the prior consent of First Party. Any successful adverse claims that may be asserted through rights acquired prior to the execution hereof shall in no wise alter the mutual promises, covenants, and agreements herein contained, unless it be reasonably determined that any award to such successful claimant shall have materially reduced the chances and opportunities for the successful conduct of this venture.

XV.

OTHER PROPERTIES

In the event either party after the date hereon, acquires any direct interest in any other mining claims, or leases thereof, within a radius of one (1) mile of any boundary of the properties herein referred to, then the acquiring party shall accord to the other party the absolute right and option to participate in any of said acquired interests up to fifty (50) percent thereof, upon paying and agreeing to pay fifty (50) percent of the cost and expense incurred therefor by the other party. Consent or rejection to participate as in this article contemplated must be given within sixty (60) days from date of notice of the rights and/or property acquired and the terms of said acquisition.

XVI.

DEFAULT

If either party shall at any time be in default under the terms of this Agreement, it shall have sixty (60) days after receipt of notice thereof from the other party by registered United States mail, to correct the default, and upon the defaulting party's failure to do so, the other party may bring such legal action on that account as it desires, including a suit for forfeiture.

If either party secures a final judgment against the other for any breach of the terms and conditions of this Agreement, it shall be entitled to costs and reasonable attorneys' fees incurred.

XVII.

CANCELLATION AND RECONVEYANCE

Except for the Twenty Thousand Dollars ($20,000) of exploratory work required in Article I, Second Party shall have the right at any time, upon sixty (60) days written notice to First Party, to abandon work on any or all of the properties above described, and shall thereupon convey to First Party by sufficient quit-claim deed (or assignment of the lease if applicable) all its right, title and interest in the properties on which work is abandoned. Such properties thereafter shall be excluded from this Agreement.

Before permitting the said lease on Section 36 to lapse, Second Party shall give First Party the opportunity of acquiring the same.

Except for the said Twenty Thousand Dollars ($20,000) of exploratory work, Second Party may at any time upon sixty (60) days written notice to First Party, cancel and terminate this Agreement, and shall thereupon deliver to First Party its quit-claim deed to all of the Desert Queen claims, together with an assignment of all interest in the said lease of Section 36. Thereafter Second

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Party shall be under no further obligation whatsoever to First Party under this Agreement except for payments due or accrued, and defaults then existing.

XVIII.

DEPLETION

For purposes of income taxation, each party shall take ~~an equal~~ RLF share of depletion upon the gross income resulting from the properties under this Agreement, in accordance with and as permitted by the laws of the United States and any applicable state.

Each party shall furnish the other with such documents and data not inconsistent with this Agreement, as may be necessary to effect such ~~equal~~ RLF division of depletion allowance.

XIX.

DOCUMENTS AND MAPS

Each party agrees to furnish to the other such deeds, abstracts and evidence of title as is in its possession, and to cooperate with the other in perfecting title to the properties.

Within fifteen (15) days after date hereof, each party will at its expense furnish to Second Party all drilling and other exploration and mining information it may have pertaining to said Desert Queen claims.

XX.

FORCE MAJEUR

Work and operations hereunder may be suspended because of acts of nature, strikes, fire, flood, requirement or regulation of Government, or any other cause without regard to the foregoing enumerations, beyond the control of either party, it being agreed, however, that upon the removal of the cause of suspension the work hereunder shall be resumed.

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XXI.

ASSIGNMENT

This Agreement shall inure to the benefit of the heirs, successors and assigns of each party.

Neither party shall assign its interest hereunder without the written consent of the other first obtained, except that Second Party may at any time assign up to one-half (½) of its interest to Rochester and Pittsburgh Coal Company, a Pennsylvania Corporation.

XXII.

TERMINATION

Upon termination of this Agreement, whether by cancellation or otherwise, Second Party shall immediately surrender possession of the said properties to First Party but shall have sixty (60) days thereafter in which to remove from the premises its equipment, tools, and supplies. Any ores still located upon the properties and ready for shipment by Second Party, shall be shipped and the net proceeds thereof shall be divided equally as hereinabove set forth. Upon such termination, Second Party shall pay all bills and other outstanding obligations incurred by it under this Agreement.

XXIII.

NOTICES

Any notices required or permitted to be given hereunder shall be delivered by depositing in the United States mail, duly registered, with postage thereon postpaid, addressed to the respective parties as follows:

If to First Party, Attention Mr. George Bridwell
Attorney at Law
Judge Building
Salt Lake City, Utah

If to Second Party, 600 West 33rd South
Salt Lake County, Utah

Said addresses for receiving notices may be changed by either party upon two (2) days previous written notice to the other party.

XXIV.

DURATION

This Agreement shall continue for twenty (20) years from the date hereof, subject to termination as herein provided or by mutual agreement of the parties.

XXV.

USE OF NAME

First Party shall not use or refer to Second Party or Vitro Corporation of America by name or by direct reference so that its, or their, name can be determined, in any prospectus, letter, advertisement, publication, or any communication to its stockholders, to brokers, or to the public, except upon prior approval of the same by the law firm of Ray, Quinney & Nebeker, attention W. J. O'Connor, Jr., Salt Lake City, Utah, or such other law firm as Second Party may designate in writing.

IN WITNESS WHEREOF, the parties hereunto set their hands this 21st day of October, 1954.

DESERT QUEEN URANIUM COMPANY

By [signature]
President

FIRST PARTY

Attest:
[signature]
Secretary

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VITRO URANIUM COMPANY, a Division
of Vitro Corporation of America

W. B. Hall
Gen. Mgr.

SECOND PARTY

STATE OF UTAH }
COUNTY OF SALT LAKE } ss.

On the 21st day of October, 1954, personally appeared before me Rex L. Firth and Carl T. Griffith, who being by me duly sworn did say, each for himself, that he, the said Rex L. Firth, is the president, and he, the said Carl T. Griffith, is the secretary of Desert Queen Uranium Company, and that the within and foregoing instrument was signed in behalf of said corporation by authority of a resolution of its board of directors and said Rex L. Firth and Carl T. Griffith each duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.

My commission expires:
[illegible]

William L. Kanaff Jr.
Notary Public
Residing at Salt Lake City, Utah

STATE OF UTAH }
COUNTY OF SALT LAKE } ss.

On the 23 day of October, 1954, personally appeared before me William B. Hall, the signer of the foregoing instrument, who duly acknowledged to me that he executed the same on behalf of Vitro Uranium Company, a Division of Vitro Corporation of America.

My commission expires:
July 29 1955

William L. Kanaff Jr.
Notary Public
Residing at

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PROPERTY Desert Queen

LOCATION 60' East to DC-1 CLAIM Long Shot #3 G.E.

HOLE NO. DC-1 TOTAL DEPTH 100' DATE 12-7-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	Gy. ss
10	0 - 4	"	Gy. ss, Rss 9-10'
20	0 - 4	"	Gy ss, Bl ms, Rss 17-20'
30	0 - 4	"	Whit ss
40	0 - 4	"	Whit ss
50	0 - 4	"	LB.ss, R ms 45-46
60	0 - 4	"	Bl ms
70	0 - 4	"	Whit ss
80	0 - 4	"	Whit ss
90	0 - 4	"	Bl. ms
100	0 - 4	"	R ms & Bl ms, hard ribs
105	0 - 4	"	" " " "

PROPERTY Desert Queen

LOCATION 60 ' North To D-1 CLAIM Long Shot #3 G.E.

HOLE NO. D-2 TOTAL DEPTH 100' DATE 12-7-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	Whit ss
10	0 - 4	"	" ", R ms 9-10'
20	0 - 4	"	" " GYms 10-11, Rms 16-17
30	0 - 4	"	" " R ss 21-22 & 24-26
40	0 - 4	"	Gy ss, R ms & Bl ms - 35-39
50	0 - 4	"	Whit ss, Bl ms 48-50
60	0 - 4	"	" "
70	0 - 4	"	" "
80	0 - 4	"	" "
90	0 - 4	"	Bl. ms
100	0 - 4	"	R ss & ms 94-100

PROPERTY Desert Queen

LOCATION 60' North To SW corn/April #2 CLAIM Long Shot #3 G.E.

HOLE NO. D-3 TOTAL DEPTH 100' DATE 12-7-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ss
10	0 - 4	"	LB ss
20	0 - 4	"	R ss & R ms, Whit ss 24-34
30	0 - 4	"	LB ss, R ss 34-36, Blms 38-39
40	0 - 4	"	Whit. ss
50	0 - 4	"	Whit. ss
60	0 - 4	"	Whit. ss
70	0 - 4	"	Whit. ss
77	0 - 4	"	Whit. ss
82			Whit. ss
88			Bl ms
98			Bl ms & R ms
100			LB ss

PROPERTY Desert Queen

LOCATION 40' South To D-1 CLAIM Long Shot #3 G.E.

HOLE NO. D-4 TOTAL DEPTH 90' DATE 12-7-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	LB ss, R ss 0-2'
10	0 - 4	"	R ms & Gy ms
20	0 - 4	"	LB ss, R ss 22-23
30	0 - 4	"	LB ss
40	0 - 4	"	LB ss, R ms, Gy ms 34-38
50	0 - 4	"	Bl ms, some R; whit. ss 38-42
60	0 - 4	"	Whit ss
70	0 - 4	"	" "
80	0 - 4	"	" "
85	0 - 4	"	" "
90			LR ss
			Water

PROPERTY Desert Queen

LOCATION S 50 W 100' To D - 2 CLAIM Long Shot #3 G.E.

HOLE NO. D - 5 TOTAL DEPTH 100' DATE 12-7-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	4 - 4	Nil	R ss, 0-2'; LB ss 2-9'
10	4 -4	"	Gy ms, R ms 14-17
20	4 - 4	"	Whit. ss
30	4 - 4	"	Whit. ss, R ms 37-40
40	4 - 4	"	Gy ss, Bl ms 40-46
50	4 - 4	"	" "
60	4 - 4	"	" "
70	4 - 4	"	" "
80	4 - 4	"	" "
90	4 - 4	"	Bl ms
100			" "

PROPERTY Desert Queen

LOCATION N60E 100' To D - 5 CLAIM Long Shot #3 G.E.

HOLE NO. D - 6 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Log

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	LB ss, R s 0-2
10	0 - 4	"	Gy ss, Bl ms 19-21
20	0 - 4	"	Gy ms, R ms 21-22, Gy ss 22-26
30	0 - 4	"	" "
40	0 - 4	"	Whit ss
50	0 - 4	"	" "
60	0 - 4	"	" ", Bl ms 64-76
70	0 - 4	"	Gy ss
80	0 - 4	"	R ms & Bl ms
90	0 - 4	"	Bl ms
100			Water

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PROPERTY Desert Queen

LOCATION N 62 E 70' To SW Corn/April #2 CLAIM Long Shot #3 G.E.

HOLE NO. D-7 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ss 0-2'
10	0 - 4	"	LB ss
20	0 - 4	"	LB ss, R ss & R ms 17-22
30	0 - 4	"	LB ss
40	0 - 4	"	Bl ms
50	0 - 4	"	LB ss, R ms 38-41
60	0 - 4	"	" "
70	0 - 4	"	" "
80	0 - 4	"	" ", Bl ms 78-82
90	0 - 4	"	Gy ms, whit. ss 82-86
100	0 - 4	"	Bl ms

PROPERTY Desert Queen

LOCATION North 100' To D-7 CLAIM Long Shot #3 G.E.

HOLE NO. D-7 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ss 0-2
10	0 - 4	"	LB ss
20	0 - 4	"	" ", R ms 10-12
30	0 - 4	"	" "
40	0 - 4	"	R ss & R ms, LB ss 30-34
50	0 - 4	"	Bl ms, LB ss 40-44
60	0 - 4	"	Gy ss
70	0 - 4	"	" "
80	0 - 4	"	" "
90	0 - 4	"	Bl ms, Gy ss 80-84
100	0 - 4	"	Bl ms & R ms

PROPERTY Desert Queen

LOCATION N 23 E 80' To NE corn/ D.Q. 2 CLAIM Long Shot #3 G.E.

HOLE NO. D-9 TOTAL DEPTH 120' DATE 12-8-55

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ss & R ms 0-2
10	0 - 4	"	Gy ms, Rss & Gy ss 2-4
20	0 - 4	"	" "
30	0 - 4	"	R ms & Gy ms
40	0 - 4	"	" "
50	0 - 4	"	Bl ms
60	0 - 4	"	" ", R ms 50-52
70	0 - 4	"	" ", LR ms 77-78
80	0 - 4	"	" ",
90	0 - 4	"	" "
100	0 - 4	"	Gy ss
106	0 - 4	"	Bl ms
120			" "

PROPERTY Desert Queen

LOCATION N 47 E 175' To D-9 CLAIM Long Shot #3 O.E.

HOLE NO. D-10 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Logs

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ss & R ms 0-7
10	0 - 4	"	Gy ss
20	0 - 4	"	" ", Bl ms 12-16
30	0 - 4	"	LB ss, R ms & Bl ms 21-24
40	0 - 4	"	Gy ms, R ms 30-36
50	0 - 4	"	Gy ss & Gy ms
60	0 - 4	"	Gy ms
70	0 - 4	"	L R ms
80	0 - 4	"	Gy ms
90	0 - 4	"	Gy ms & R ms
100	0 - 4	"	LR ms

PROPERTY Desert Queen

LOCATION S 80 W 130' To DC - 6 CLAIM Long Shot #3 G.E.

HOLE NO. D - 11 TOTAL DEPTH 100' DATE 12-9-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Log

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	6 - 4	Nil	R ss 0-5
10	6 - 4	"	Bl ms
20	6 - 4	"	R ms Bl ms 10-18
30	6 - 4	"	Gy ss
40	6 - 4	"	" "
50	6 - 4	"	Bl ms, Gy ss 40-48
60	6 - 4	"	Whit ss
70	6 - 4	"	Whit ss
80	6 - 4	"	Whit ss
90	6 - 4	"	Whit ss
100	6 - 4	"	Bl mss

PROPERTY Desert Queen

LOCATION South 110' To D-11 CLAIM Long Shot #3 G.E.

HOLE NO. D-12 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	6 - 4	Nil	R ss 0-4
10	6 - 4	"	Bl ms
20	6 - 4	"	" " R ms 14-16
30	6 - 4	"	LB ss, R ms 18-24
40	6 - 4	"	Gy ms, LB ss 30-34
50	6 - 4	"	Gy ss
60	6 - 4	"	" "
70	6 - 4	"	" "
80	6 - 4	"	" "
90	6 - 4	"	Bl ms, R ms 83-87
100			Bl ms

PROPERTY Desert Queen

LOCATION N 23 E 30' To DC-1 CLAIM Long Shot #3 G.E.

HOLE NO. D - 13 TOTAL DEPTH 100' DATE 12-8-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ms & Bl ms 0-4
10	0 - 4	"	R ss
20	0 - 4	"	Bl ms & R ss
30	0 - 4	"	R ss
40	0 - 4	"	LR ss
50	0 - 4	"	R ms & R ss
60	0 - 4	"	Bl ms
70	0 - 4	"	Bl ms
80	0 - 4	"	"
90	0 - 4	"	"
92			R ms
100			Bl ms

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PROPERTY Desert Queen

LOCATION S 80 E 300' To DC-1 CLAIM Long Shot #3 G.E.

HOLE NO. D-14 TOTAL DEPTH 106' DATE 12-9-54

PROBED BY C. H. Smith DESCRIBED BY Lippoth & Wein Log

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0	0 - 4	Nil	R ms & Bl ms 0-7
10	0 - 4	"	LB ss
20	0 - 4	"	R ms
30	0 - 4	"	R ms & Bl ms
40	0 - 4	"	Gy ms, LB ss 30-34
50	0 - 4	"	" "
60	0 - 4	"	" "
70	0 - 4	"	No cuttings
80	0 - 4	"	R ms
90	0 - 4	"	Bl ms
100	0 - 4	"	Bl ms
106	0 - 4	"	"
			Water

PROPERTY Desert Queen

LOCATION 565°W, 75' From SE cor. Sinbad to

CLAIM (Desert Queen #1) Long Shot #3

G.E. 3778.3

HOLE NO. DC-1

TOTAL DEPTH 104

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-5	Neg.		overburden
5-15			ss, m., gy., a-gy-ms sms., R-ms. @13'
15-21			Ms and st., gy, some f., ss
21-24.5			Ms, R.
24.5-35			ss, m-c., buff to gy, soft
35-47			ss, m-c, gy, a-carb. sms.
47-52			st., gy.
52-53			ms, r.
53-55			ms, gy.
55-59.5			ms, and st., gy.
59.5-86	30-4 80' to	83'	ss, c-congl., lt. br. A.-carb. 76' to 86
86-90	Neg.		St and ms, gy.
90-91			ms, r & yel.
91-96			ss and st, F., gy., hard rib, tight
96-98			ms, R & gy.
98-104			ms, choc. br., with hard ribs

PROPERTY Desert Queen (Desert Queen #1)

LOCATION S 40° E, 230' from SE cor. Sinbad To CLAIM Long Shot #3 G.E. 3792.3

HOLE NO. DC-2 TOTAL DEPTH 100' DATE 12-10-54

PROBED BY DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-4	Neg.		ss, c-congl., lt. br., m-carb.
4-6			ms, gy.
6-11			ms, r. and gy.
11-20			ms, R, some gy.
20-23			ms., R.
23-30			St, gy-gn.
30-38			St. and ms., gy.
38-41			Ms, R. and gy.
41-50			ss, R., A-R. ms.
50-53			Ms., R.
53-60			ss, c., lt. br., M-gy-gn. ms.
60-64			ss, m-c., lt. br. A-carb. @ 63
64-65			ms, R. and gy.
65-70			ss., m-c, lt. br. wk. min. 67'-68'
70-89			ss, m-c, lt. br.
89-90			ss, congl. hard, tight
90-96			st, and ms., gy.
96-100	Neg.		Ms, R. and gy.

PROPERTY Desert Queen

LOCATION S 40 W, 250' From SE cor. Sinbad to (Desert Queen #1)

CLAIM Long Shot #3

G.E. 3764.9

HOLE NO. DC-3

TOTAL DEPTH 123'

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-3	Neg.		overburden
3-4.5	↑		ss, congl., lt. gy.
4.5-6			ms, R. and gy.
6-8			st., gy.
8-11			ms, R. and gy.
11-15.5			ss, M-MF, R., A-R-MS,
15.5-24			ss, C., Buff M-R-ms, S-chert pebl.
24-26.5			ms-st, dk. gy -bk.
26.5-27			ms, R.
27-34			ss, m-c, lt. br-gy., s-r and gy. ms.
34-37			ms. - st., gy.
37-63			ss, m-c, gy-lt. br., A-gy ms, m-carb.
63-64			Qtzite, br.
64-68			ss, f-c, lt. br.-gy., hard, a-gy ms.
68-72			ms-st, gy.
72-75			ss, congl., lt. br-gy, hard
75-77			ms, gy.
77-83			ms, r-gn.
83-85			ms., R.
85-88.5			ss., M., lt. br., s-gy ms. and carb.
88.5-91.0			MS., R.
91-92			Ms, Bk.
92-105			ss, congl., lt. gy., A-gy ms., soft
105-123	Neg.		ms-st., R-gy.

PROPERTY Desert Queen

LOCATION S 30° W, 90' From DC-3 To

CLAIM Long Shot #3 (Desert Queen #1)

G.E. 3768.6

HOLE NO. DC-4

TOTAL DEPTH 117

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-8	Neg.		overburden
8-17			ms-st, r-gy.
17-21			ss, f-mf, A-R ms
21-23			ms, R.
23-28			ms, gy.
28-32			st, gy.
32-38			ss, m-c, lt. br. A-gy ms
38-48			ss, m-c, lt. br.
48-58			ss, c-congl., lt. br.
58-70			ms-st, gy, purple 66'-67'
70-78			ms, r-gy, hard ribs
78-80			ss, f-mf, lt. br., A-gy ms
80-82			ms, gy.
82-97			ss, m-mc, lt. gy. A-gy ms
97-117	Neg.		ms, R-gy, hard ribs

PROPERTY Desert Queen

LOCATION S 35° W 750' From NE cor. DQ #3 To

CLAIM Desert Queen #3 G.E.

HOLE NO. DC-5 TOTAL DEPTH 133' DATE 12-10-54

PROBED BY DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-8	Neg.		overburden
8-28			ss, m-mc, lt. gy, m-carb., A-gy ms
28-32			ss, congl., lt. br.
32-38			st., gy to Bk
38-49			ms-st, gy.
49-52			ms, purple
52-72			ms, r-gy.
72-82			ms, R-gy.
82-125			ms, R-gy.
125-133	Neg.		ss, congl. hard, tight, lt. br., gyp bands

PROPERTY Desert Queen

LOCATION S 30 W, 90' From NE Cor. DQ #3 To

CLAIM Desert Queen #3

G.E.

HOLE NO. DC-6

TOTAL DEPTH 57

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-8	Neg.		overburden
8-16			Ms. - st., gy-R.
16-20			Ms, Dk. R.
20-21			Ms, Gy.
21-29			ss, M., lt. gy, A-gy ms
29-32			ms, Dk. gy, silty
32-35.5			ss, F., lt. gy, hard tight, A-gy ms.
35.5-38			ms, Gy.
38-48			ms, R-gy.
48-55			st, gy, gn, mica flakes
55-57	Neg.		Ms, R.

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PROPERTY Desert Queen

LOCATION N 30 E, 140' From SE cor. LS #3 To

CLAIM Desert Queen #2

O.E.

HOLE NO. DC-7

TOTAL DEPTH 65'

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-7	Neg.		overburden
7-17			Ms, Gn. and R.
17-23			Ms, gy.
23-27			qtzite, congl.
27-33			ms - st, gy.
33-41			ms, purple, gy., bk.
41-47			ss, M., tight hard
47-49			ms, gy.
49-56			ss, M., A-carb.
56-65	Neg.		ms, gn-gy.

PROPERTY Desert Queen

LOCATION S°15 E, 120' From NE cor. DQ #12 To

CLAIM Desert Queen #12

G.E. 3729.3

HOLE NO. DC-8

TOTAL DEPTH 297'

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-3	Neg.		overburden
3-18			ss, congl. lt. gy
18-25			ms, R.
25-29			st., gy.
29-33			ms., gy.
33-40			Ms, R.
40-81			ss, c-congl., lt. gy m-gy ms
81-82			st., gy.
82-152			ms. R-gy.
152-158			ms., gy.
158-176			qtzite, r-gy ms. splits
176-186			ss, lt. gy, f-mf, a-gy ms, min. @185'
186-192			ms, bl-choc. br.
192-200			ms-st, r-gy.
200-202			ss, f., hard, gy.
202-216			ms-st, R-gy.
216-232			ss, congl., hard, thick sms of r-gy ms.
232-238			ms, R.
238-243			ss, v f, hard
243-262			ms, R-gy.
262-272			qtzite, choc. br. bands of gyp.
272-297	Neg.		ms - choc. br., a-bands of gyp.

PROPERTY Desert Queen

LOCATION N 40° W, 280' From SE cor. DQ #14 To

CLAIM Desert Queen #14

G.E. 3744.4

HOLE NO. DC-9

TOTAL DEPTH 191'

DATE 12-10-54

PROBED BY

DESCRIBED BY C. H. Smith

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-8	Neg.		overburden
8-14			ss, m-mc, lt. brn.-gy A-R. ms.
14-50			ms, R.
50-61			ms, gy.
61-72			ms, R-gy, hard ribs
72-92			ms, R., hard ribs
92-118			ss, c-congl. lt. br. m-gy ms.
118-122			ms, gy.
122-135			ms, R-gy, hard ribs
135-146			ss, m-ms, lt. br.
146-152			qtzite, purple, A. purple MS
152-158			ms, R.
158-160			ss, m., lt. gy., tight carb. A-gy ms
160-166			ms- st, gy.
166-178			ms, R-gy, hard ribs
178-189			ss, c., lt. br., A-gn ms, tight
189-191	Neg.		Ms, R-gn.

PROPERTY Desert Queen

LOCATION Sw^4 SE^4 Sec. 10 T 22S R 14E SLM

CLAIM Ray Drilling Co. 12A

G.E.

HOLE NO. DC-10

TOTAL DEPTH 242'

DATE April 1, 1955

PROBED BY R. L. Baxter

DESCRIBED BY R. L. Baxter

N 48°W 700 ft. from SE cor. 12A, SW cor. claim 10, NE cor. 15 & SW cor. 9

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-12			Sd., F. gr., r-brn.
12-15			Sis, lt. grn., soft.
15-42			few strks lt. grn. soft sis. Sh, rust, soft, some silty
42-57			Sis, lt. grn., soft, grades to sh.
57-69			Sh, r & lt. grn., soft
69-72			Sh, soft, bleached bl.grn.
72-83			Ss, wh., figr., soft.
83-84			Sis, lt. grn., hd., calc.
84-86			Sh, dk. brn., soft, calc.
86-88			Sis, lt. grn., hd., calc.
88-103			Ss., figr., hd., sl. calc, lt. grn., f. sugary
103-113			Ss, t. gr., sugary, wh.
113-117			Sh., r & Bl., soft, calc.
117-121			Sis, r. & Bl, med. hd., calc.
121-128			Sh., r. & Bl., soft
128-175			Blk strks, 149-152 Ss., f. med.grn, sugary, soft.
175-177			Ss., v.lt gr., med. hd., olive grn.
177-188			Sh., bl.-grn., soft.
188-193			Sis. lt. grn., med. hd.
193-197			Ss., med. grn., gy.
197-203			Sh., bl.
203-221			Ss., gy., med. gr.
221-242			Sis, bl-grn., hd.

Plug

Core

Negative

Plug

PROPERTY Desert Queen

LOCATION T 22S R 14E CLAIM D. Q. #8 G.E.

Sec. 15 NE4 NE4

HOLE NO. DC-11 TOTAL DEPTH 256' DATE 3-28-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

Contractor - Ray Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-5	Neg.		Sd., brn. F. gr.
5-15			Ss, wh. sugary, med. gr.
15-30			Sdy. sh., brn.
30-40			Sh., bl.
40-41			Congl. ss, w/hd. ss matrix & pebbles
41-42			ss, med. gr., wh-lt. grn., hd, w/small carbon particles
42-43			congl, pebbles w/ms & ss matrix
43-44			ss, med. gr., hd., lt. grn-wh. w/carbon specs
44-46			ms, purple
46-48			ms, green
48-50			ms, silty, purple
50-55			ss, f. gr. lt.grn., med-v. hd.
55-57			ms, grn., lower ft. silty
57-60			ms, red w/grn. patches
60-62			sis, r. & grn., hd. calc.
62-63			ms, r., some sis, calc.
63-69			sis, lt. gr., argill., calc. 0.5' silty ms @ 6.5'
69-69.5	Trace		ss, blk, f. gr., calc.
69.5-73			ss, f. gr., lt. grn., calc., med. hd.
73-85			ss, f. gr., wh., sugary, some ms, calc., med-crse sd. gr@bot'm
85-87			ss, arkosic, hd., sh. calc.
87-92			ms, grn., silty, hd. 0.5' grn. soft ms @ 90 & 91 ft.
92-94			SiSor v. f. gr. ss, grn.-lt. brn., hd.
94-99			ms, soft, grn & brn.

Plug

Core

PROPERTY Desert Queen

LOCATION NE4 NE4 Sec. 15 CLAIM D.W. #8 G.E.

T 22S R 14E

HOLE NO. DC-11 TOTAL DEPTH 256' DATE 3-29-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

Contractor - Ray Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
99-100			sis, lt. grn., hd.
100-108			sis, grn., hd & ms, brn, f. soft, in approx 0.5' thickness
108-109			ss, f. gr., wh, sh calc., hd. w/blk. specs
109-112			sis, lt. grn., hd.
112-119			ss, f. gr., hd., gy, sh calc, w/blk specs. Grains crse w/dph
119-120 Core			ms, bl., soft.
120-121			sis, bl-grn, hd., tight
121-122			ms, silty, brn. soft.
122-131			ms, f.-grn. soft strk. blk v. t. gr. ss.
133 X 131-132			ms, r-brn, soft
132-135			ss f. gr., hd., dense w/blk specs. strk blk. v.f. gr. ss
135-144			ms, grn, soft
144-153 Pl ug.			sis, grn, med. soft
153-171			ms, grn., soft
171-177			sis, hd., lt. grn.
177-195			ms, soft bl-grn. w/lt.grn. hd. sis.
195-216 X			ss, med. gr., gy, sugary weakly cemented. *
216-221			? " " no core recov. prob. same as above
221-230			Sis, lt. grn., hd. calc w/ some r. ms
230-238 Core			ss, f. gr., brn to wh., hd to sugary & bleached v. soft & v. calc. @ bottom
238-244			ss, wh., hd., r.f. gr., calc w/blk strks. No recov. 236-238
244-256			sis, grn, hd, calc. w/brn. & grn. ms, calc.

PROPERTY Desert Queen

LOCATION SE4 NE4 Sec. 15 CLAIM D. Q. #5 G.E.

T 22S R 14E

HOLE NO. DC-12 TOTAL DEPTH 104' DATE 3-23-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-5			Sd., med. gr., tan; r. & grn. sh.
5-12 Plug			Sd., " " "
12-15			Ss, " " "
15-15.5		15% core Recov.	Congl. ss, siliceous, gy, v. hd. w/ chert pebbles
15.5-27.5			ss, gy-wh, soft & sugary
27.5-31			ss, wh, sugary, med. hd., med. gr.
31-34		40% Recov.	Argill. ss, blk., soft, f. gr.
34-37			" " , pur & wh, sft., f. gr.
37-38			ss, wh., med. hd., med. gr.
38-39			sdy. sh., soft, pur & grn.
39-49		65% Recov.	ss, lt. grn-grn., sft-med. hd. med-gr., sugary-compact
49-52 core			ss. wh " " , " " " " " " "
52-54			No recovery
54-72			ss, wh, med. hd, med.-f.gr.
72-75			sh & argill ss, med. hd.-soft, bl-grn.
75-84			ss, lt. grn., hd., compact
84-88			sdy. sh-argill. ss, r.&gy-grn., f. gr., calcareous
88-100			ss, med. f. gr., sug-compact lt. bl-grn to wh.
100-104			sdy. sh., f. gr., r. & bl. grn. hd-sft.

North - 50 ft. from Sec D.Q. 29 to DC-13

PROPERTY Desert Queen

LOCATION NW4 NW4 Sec. 13 CLAIM D.Q. #29 G.E.

T 22S R 14E

HOLE NO. DC-13 TOTAL DEPTH 561' DATE 3-26-54

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-6	Neg.		Tan siltstone
6-12			Tan mudstone
12-15			Gray siliceous siltstone
15-20			silty, gray mudstone
20-23			Gray siltstone
23-26			Gray mudstone
26-63			Siltstone & lavender mudstone
63-69			Lavender limestone
69-86			Lav., hd., silty shale
86-88			Lavender limestone
88-100			" shale & siltstone
100-118			Gray siltstone to f. gr. sandstone
118-120			Lavender siltstone
120-135			Gray silty shale
135-140			Gray med. grained ss.
140-155			Lavender shale & silty sh.
155-158			Wh. sis to f. gr. ss.
158-398			Sh. to sis, red and bl-grn. blk grains @ 398
398-410			F. gr. wh. ss, med-hd.
410-450			Sh. to sis, r. & bl-grn. strks gypsum 410-415
450-466			F. gr., w. soft sandstone
466-469			R. & bl-grn shale
469-483			F. gr., soft, wh. sandstone w/some gn. sdy shale
483-500			Wh. sugary ss, f.-med. gr. w/some gn sdy sh.

PROPERTY Desert Queen

LOCATION NW4 NW4 Sec. 13 CLAIM D. W. #29 G.E.

T 22S R 14E

HOLE NO. DC-13 TOTAL DEPTH 561' DATE 3-28-54

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
500-502			Wh., f. gr. sugary ss.
502-503			Grn. ms w/some wh. ss.
503-504			wh. f. gr., sugary ss. w/strks of carbon
504-510			Wh, med. gr. ss w/carbon strks.
510-525			Gy, med-g.gr. ss w/carbon strks 512-513 congl ss 515-516 cse ss
525-528			Grn, silty ms w/f. gr. ss.
528-530			Silty ms-f. gr. ss blk
530-539			Gy-wh, f.-med. gr. ss, sug.-tight strks. carbon 536-538
539-540			Silty, grn ms.
540-542			Lt. grn, hd. sis.
542-543			B.-grn. ms.
543-548			Wh.-gy, f. gr., dense ss.
548-550			Bl & brn, ms
550-553			Bl, hd. sis.
553-558			Bl., med. hd., ms
558-560			B.-brn, hd., dense, sis.
560-561			Brn., med. hd. ms.

PROPERTY Desert Queen

LOCATION South 150' From NE center D.Q. #25 to

CLAIM D. Q. #25

G.E.

HOLE NO. DC-14

TOTAL DEPTH 570'

DATE 4-23-55

PROBED BY R. L. Baxter

DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-20	0 - 4		Sh. & silty sh. soft, lt. bl. & grn., calc.
28	"		Ss, vF, med. soft to hd., wh. calc.
32	"		Sh, lt. grn., soft, calc.
35	"		LS., Lav., hd.
110	"		Sh, st. lt. bl., pur., brn. calc. (2.0' LS, lt bl. @ 55 & 60)
120	"		ss, gy, VF, congl w/ch. pebbles
135	"		St, lt. grn., steel bl. med. soft.
138	"		ss/ Matrix cong; w/ch pebbles, gy w/f
300	"		sh & st., soft-med-hd. lt. bl, pur, brn. & grn mostly choc.
			brn. w/some pur towards bottom
320	"		ss, f., poorly cemented - med hd. wh.
328	"		sh., lt. bl-grn. bleached soft
370	"		silty sh. med-hd. purple-red also some soft sh.
			1ft lt. grn. ss @ 340
			2ft " " " @ 356
380	"		Sh. very pale bl-grn. med-soft
420	"		Sh & st, choc. brn. soft to hd. w/some lt grn-wh st.
430	"		Arg. st. hd. lt bl-grn.
435	"		silty sh. med. soft, choc. brn.
458	"		ss, vf pale grn. med. soft
496	"		Sh., choc. brn. lt. bl-grn. w/some st. more silty with depth
500	"		ss, lt. tan, v.f.
509	"		Ss, mf, gy, med. hd. sugary-poreous w/strks carbon, sl.calc.

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PROPERTY Desert Queen

LOCATION South 150' From NE center D.Q. #25 CLAIM D.Q. #25 O.E.

HOLE NO. to DC-14 TOTAL DEPTH 570' DATE 4-23-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
528	"		sh, silty sh & some st. hd., sl calc 1 ft. f.ss @ 510'
			bl. brn & lt. grn.
530	"		St, lt. grn. hd. sl. calc.
561	Core		Ss, Med. hd. F., sugary, gy, tan & lt grn, MF grained.
568	"		sh, lt. bl. grn & brn. hard, calc. 9.5' blk. sh @ 563'
570	"		St, hd, pale grn.

PROPERTY Desert Queen

LOCATION NW4 SW4 Sec. 13 CLAIM 44 O.E.

T 22S, R. 14E, SLM

HOLE NO DC-15 TOTAL DEPTH DATE 7-14-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

N. 100' from S. center 44, N. center 45

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-23	Neg.		ss, F. lt. brn, hard, calc.
23-25			chert cgl in ss, F, lt. brn, hard calc.
25-36			ss, F, lt. gray, friable, calc w/few hard ribs
36-52			sty, F, lt-med gray, med hard, calc.
59-65			sts, red, med hard, calc.
65-78			sts, lt. gy-med gr & lt gr, hard calc.
78-92			sts, lt gr, friable calc.
92-95			sts, red, friable, calc.
95-120			sts, lt gr, friable calc.
120-121			sts, lt. gr, friable, calc w/chert fra 1/16"
121-139			sts, lt. gr, friable, calc.
139-141			chert cgl up to ¼" in sts, lt. gy, friable
141-146			sts, lt. gr, friable, calc.
146-150			sts, lt. gy, friable, calc.
150-159			sts, lt. gy & blue, friable w/ hard ribs, calc.
159-180			sts, red, friable, calc.
180-184			sts, lt gy friable calc, w/abundant r & blues
184-194			sts, red, friable, calc.
194-199			sdy sts, lt. gy, med hard, calc, w/blue sh.
199-207			sh, red, some blue sty.
207-228			sty ss, lt. gy friable- med hard calc.
228-230			sts, lt. gy friable, calc w/red sh.
230-234	Neg.		ss, F, lt. gy-gr, med hard, calc.

PROPERTY Desert Queen

LOCATION NW4 SW4 Sec. 13 CLAIM 44 G.E.

T 22S, R. 14E, SLM

HOLE NO. DC-15 TOTAL DEPTH DATE 7-14-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

N. 100' from S. center 44, N. center 45

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
234-237			sty ss, f. lt. gy, friable, calc.
237-258			sh, red, sty
258-265			sh, lt. gr.
265-269			sh, red
259-267			sty ss, F, lt. gy, med fria w/hard ribs, calc.
267-300	started drilling H_2O		sty, ss, redish, friable w/some red sh.
300-332			sh, red, blue & gr.
332-341			No sample
341-490	caved at	483.6'	Sh, red, blue & gr.
490-492			ss, F-m, lt. gy, med hard calc.
492-496.5			ss, M-c, lt. gy, med hard calc w/blue gr sh buttons and organic stringers from 492.8' to 495.0'.
496.5-503.4			ss, M, lt. gy med hard, calc.
503.4-504.5			ss, M. lt. gy, med hard, calc w/few organic stringers
504.5-507		.01(4-scale B)	ss, M, ly gy, med hard calc, w/few organic stringers
507-510			ss, F-m, ly gy, med hard, calc.
510-512			ss, F-m, ly gy med hard calc w/few organic stringers to 100.5'
512-513.5			ss, F, lt, gy, med hard, calc.
513.5-516			ss, F-m, lt gy, med hard
516-519.5	2 ft. of core not recovered between 510' - 520'		ss, f-m, lt gy, med hard w/abundant organic stringers & frags.
519.5-		.03(4-scale Babbel)	ss, F, lt gn, med hard calc, sty.

North 500' from SE cor. D.Q. 20 to DR-1

PROPERTY Desert Queen

LOCATION SE4 SE4 Sec. 11 CLAIM D.Q. #20 G.E.

T 22S R 14E

HOLE NO. DR-1 TOTAL DEPTH 600' DATE 3-29-55 to 4-2-55

PROBED BY C. H. Smith DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-80			Sis, hd. & MS, soft, grn. to blue w/some lav hd. sis.
80-132			MS & sis, var. (lav, pur, gy, wh. & r.)
132-135			ss, wh., siliceous
135-148			Same
148-151			Sis, lt. grn & silty MS impreg. w/yellow-grn mat'l
151-188			Same
188-191			Sis, wh., siliceous
191-260			Same
260-338			MS & sis, vareg (lav, r., gy. & wh)
338-340			Ss, wh., v.f. gr.
340-360			Same
360-365			Ss, gy., f. gr.
365-375			No return? ss, wh. sugary soft
375-495			MS r, grn. & bl., some silty
495-503	499-501 reads 80 on 5 scale	Thru drill pipe	Sis, lt. grn. hd & ss, f. gr. wh., soft.
503-530	@ 533 reads 40 on 5 scale 1" thick		Ss, wh., sugary, f. gr. some blk. no return 510-515 v. soft ss
530-555			Ms, blue
555-560			Sis, lt. grn., hd.
560-580			? Ss, sugary, soft. No return
580-600			? Ms, pur., bl. & lt. grn., some sis, Few returns lt grn,soft

PROPERTY Desert Queen

500 ft. South NE Cor. 68 & NW Cor. 67

LOCATION SW4 NW4 Sec. 14 CLAIM D. Q. #67-68 G.E.

T 22S R 14E SLM

HOLE NO. DR-2 TOTAL DEPTH 270' DATE 4-4-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-5			Sh., rust, soft
5-12			Sh., lav., hd. calc.
12-16			Sh., rust soft
16-18			Sh., gy., med. hd.
18-28			Sh., brn., med. hd., calc.
28-35			Sh., bl.-grn., hd., calc.
35-45			Sh., rust, soft, calc.
45-48			Sh., r. pur., calc., soft
48-50			Ss., v. f. gr.,lt. grn., sft., calc.
50-60	Neg.		Sh., lt. grn. & rust, soft, calc.
60-63			Ss., v.f. gr., gy., soft, calc.
63-72			Sh., lt. brn., rust, soft, calc.
72-78			Ss., lt. grn. pur., arg., soft
78-83			Ss, v. f. gr., lt. grn., med. hd., calc.
83-90			Ss., v.f. gr., wh., soft., calc.
90-100			Ss., f. gr., med. hd., wh.
100-102			Congl., chert pebbles, r. & gy.
102-118			Sh., rust & bl., soft, calc.
118-164			Ss, med. hd., lt. grn. & gy., calc. silty, f. v. f. gr.
164-172			Sh., dk. brn. & bl., soft, calc.
172-188			Silty ss, v. f. gr., med. hd., lt. grn. calc. some hd. sis & wh. grns.
188-190			Sh., dk. brn., soft, calc.
190-210			Silty ss, v.f. gr., lt. grn., hd, some hd grn sis & wh. soft ss
210-215			Sh., bl., soft calc.

PROPERTY Desert Queen

500 ft. South NE Cor. 68 & NW Cor. 67

LOCATION SW4 NW4 Sec. 14 CLAIM D. Q. # 67-68 G.E.

T 22S R 14E SLM

HOLE NO. DR-2 TOTAL DEPTH 270' DATE 4-4-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
215-230	↑		Silty ss., lt. grn., hd., calc., some hd. grn. sis
230-235			Sh., bl., soft
235-260	Neg.		Silty ss., vit. gr., hd. lt. grn. w/wh f. gr. ss & hd. lt sis grn
260-270	↓		Sh., rust & bl. soft

PROPERTY Desert Queen — 600 ft. N 30°E of SW cor. 9 & NW cor. 8

LOCATION SE4 SE4 Sec. 10 — CLAIM D. Q. #9 — G.E.

T 22S R 14E SLM

HOLE NO. DR-3 — TOTAL DEPTH 260' — DATE 4-4-55

PROBED BY R. L. Baxter — DESCRIBED BY R. L. Baxter

Ray Drilling Company

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-24			Sh., choc. brn., soft. 2' t. gr. ss @ 17' lt. brn. & lt. grn.
24-40			Sh., bl-grn., soft
40-45			Sis., hd., lt. grn. & lt. brn.
45-51	Neg.		Sh., choc. brn., soft.
51-54			Sis., lt. brn., hd.
54-57			Sis., lt. grn., hd.
57-60			Sh., soft, lt. brn., & lt. grn.
60-78			Ss., v. f. gr.-med. gr., gy-lt. grn., med hd.
78-81			Silty ss., lt. grn., hd.
81-160			Ss., f.-crse. gr., sugary, poorly cemented, gy., brn & wh. *
160-170			Sis., brn., soft, w/some bentonite.
170-190			Sis., bl.-grn, med-soft.
190-195			Ss., f.-med. gr., lt. tan
195-204			Sis., lt. grn., med. hd.
204-225			Ss., f. gr., poorly cemented, gy.
225-260			Sis., lt. bl-grn & wh. w/lt bl. sh.

PROPERTY Desert Queen

LOCATION NE4 SW4 Sec. 10 CLAIM D. Q. #14 O.E.

T 22S R 14E SLM

HOLE NO. DR-4 TOTAL DEPTH 280' DATE 4-5-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

340' N 15°E of NE 12, SW 14 & NW 12A H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-10			Sis, lav & brn., med. hd.
10-20			Sh., lav & rust
20-23			Ss, v. f. gr., lav., med. hd.
23-45			Ss, f. gr., wh., sugary, med. soft.
45-60			Sh., pur. & lt. bl.-grn.
60-75			Sis, gy., hd. & sh., choc. brn., soft.
75-100			Ss., wh., sugary, f. med. gr., med. soft
100-115			Sh., bl.-grn., soft
115-118	Neg. 118 Trace		Ss, f. gr., wh., med. hd.
118-120			Sh., d. brn., soft
120-225			Sis., lt. bl.-grn., med. hd. w/soft lt. bl. grn. sh.
225-260			Ss., v. f. gr. hd., siliceous, wh.
260-280			Sis., lt. bl.-grn. & wh., med. hd., w/soft lt.bl. sh.

PROPERTY Desert Queen

LOCATION NW^{4} NE^{4} Sec. 23 CLAIM D. Q. #72 G.E.

T 22S R 14E SLB&M

HOLE NO. DR-5 TOTAL DEPTH 316' DATE 4-11-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

600 ft. N 60° W of SE Corner of Desert Queen claim #72

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-10			Sh., lav., hd.
10-15			Sh., lt. grn., med. hd.
15-18			Sis, r.-pur., hd.
18-20			Sh., lt. grn., med. hd.
20-28			Sh., lav., hd.
28-36			Sh., r-brn., hd., silty
36-40			Ss., f. gr., wh., med. hd.
40-43			Sh., pur., med. hd.
43-48			Ss., f. gr, wh., med. hd.
48-50			Sh., soft, pur-brn
50-60			Sh., med. hd. ivory
60-63			sis, med. hd., r.-brn.
63-65			Sh., lt. grn., med. hd.
65-70			Sh., lt. brn., med. hd.
70-73			Ss., tan, med. hd., f. gr.
73-77			Sh., d. brn., med. hd.
77-80			Ss, lt. tan, med. sft., v. f. grn.
80-82			Sh., silty, med. sft., lt. brn.
82-100			Sh., lt. bl., med. sft., sl. calc.
100-115			Sh., med. hd., brn. & lav.
115-117			Ss., f. gr., med. hd.
117-123	Neg.		Sh., r.-brn.
123-130			Sis, hd., lt. brn.
130-133			Sh. & sis., lt. brn., & gy., med. hd.

PROPERTY Desert Queen

LOCATION NW4 NE4 Sec. 23 CLAIM D. Q. #72 G.E.

T 22S R 14E SLM

HOLE NO. DR-5 TOTAL DEPTH 316' DATE 4-11-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

600 ft. N 60° W of SE Corner of Claim #72 (Desert Queen)

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
133-137			Sh., bl.-grn., med. soft
137-140			Sis, med. soft, lt. brn.
140-144			silty, sh., d. brn., med. hd.
144-156			Ss., lt. grn., v. f. gr, med. soft
156-162			Sis & sh., brn., med. hd.-soft
162-190			Sis, med. hd.
190-215			Sh., brn., med. hd.
215-220			Sis., lt. grn., med. hd.
220-230			Ss, wh., sugary, f. gr.
230-240			Sh., brn., med. soft
240-243	Neg.		Sis., med. hd., lt. grn.
243-250			Sh., brn., med. soft
250-256			Ss., wh., f. gr., med. hd.
256-282			Sis., lt. grn., med. hd.
282-300			Ss., wh., f. gr., med. hd.
300-315			Sis & sh., lt. grn., med. hd.

PROPERTY Desert Queen

LOCATION S 10° E, 100' From DC-2 To

CLAIM Long Shot #3

G.E.

HOLE NO. DR-6

TOTAL DEPTH 120'

DATE 4-23-55

PROBED BY R. L. Baxter

DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Company

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-3	0-4		ss, gy. f, med. hard, calc.
5	"		st & sh. lt. gn., med. soft, calc.
6	"		Sh., soft, choc. brn.
30	"		Sh & st, m. soft, lt. bl & brn. calc.
35	"		ss, f. gr., gy., med. hd., calc.
38	"		sh, choc. brn. soft
40	"		silty sh, lt. bl, soft, calc.
43	"		st, lt. gn. hd. calc.
65	"		ss, wh. poorly cemented, calc.
90	"		st & sh lt. bl. & grn. soft, calc.
115	"		ss., f., sugary, wh. calc.
120	" - 117		st & sh, bl-grn. & choc. brn. calc & soft

PROPERTY Desert Queen

LOCATION South, 100 ft. from ¼ Sec. 22 & 23 CLAIM Long Shot #2 G.E.

HOLE NO. DR-7 TOTAL DEPTH 150' DATE 4-23-55

PROBED BY C. H. Smith DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-3	0-4		sh., lt. grn. & pur., med. soft
6	"		Sh., lt. brn., calc., " "
9	"		St, lt. grn., " , " "
12	"		Ss, " " , " , " "
56	"		St, varingated, calc. med. hd.
83	"		ss., lt. grn., yel & gy, mostly poorly cemented, calc.
90	"		St, d. brn. soft & st lt grn, med. hd. calc.
105	"		Sh., d. brn. soft. calc. & st. lt. grn. med. hd. calc.
121	"		ss, f., m. soft, calc, wh., w/some d. brn. sh & lt. grn. st.
124	"		sh., choc. brn. soft, calc.
135	"		sh. bl. soft., calc.
150	"		st. & sh. bl, soft, calc.

PROPERTY Desert Queen

LOCATION South, 100 ' From N.E.C. D. Q. CLAIM D. Q. #47 G.E.

HOLE NO. DR-8 TOTAL DEPTH 550' DATE 4-26-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-3	0-4		silty sh., lt. grn. soft calc.
6	"		st, lt. bl., med. hd., calc.
10	"		ss, wh., soft, f., calc.
12	"		silty sh, bl-grn., soft, bleached calc.
18	"		silty shl, soft, gy-grn, calc.
21	"		st., lt. bl., med. hd., calc.
70	"		sh, st, ls., soft-hd. mostly calc. lt. bl. brn, bl. & lt grn.
80	"		st., lt. grn. med soft, st. calc.
83	"		ss, f, wh., hd. sl. calc.
90	"		sh., bl., med. soft, sl. calc.
125	"		st., med. soft-med-hd., calc, lt. grn. to bl.
128	"		congl., ss matrix, hd. w/chert pbls.
170	"		silty sh., hd., pur. & bl.
185	"		st, hd. lt. bl. r-brn. & wh.
203	"		sh. & silty sh., med. hd. lt. bl. & pur.
215	"		ss, f., vari-colored grains, hd.
360	"		sh, silty sh. varigated, med. soft to hd.
366	"		ss, f., hd, lt. grn. & lt. brn.
368	"		sh., pur., med.-hd.
374	"		ss, poorly cemented, gy, F.
382	"		sh., bl & brn. soft w/some bleached bl-grn.
422	"		silty ms., choc brn. w/bleached bl-grn. sh., soft, calc.
450	"		ss. v/f/ med/. spft wh/tan, calc.

PROPERTY Desert Queen

LOCATION South, 100' From N.E.C. D. Q.

CLAIM D. Q. #47

G.E.

HOLE NO. DR-8

TOTAL DEPTH 550'

DATE 4-26-55

PROBED BY R. L. Baxter

DESCRIBED BY R. L. Baxter

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
465	0-4		Sh. soft, bleached bl-gn, calc.
492	"		ss, wh. & tan, soft, f., calc.
493	26-4		ss, d. gy, soft, calc.
515	0-4		ss, wh. & tan, soft., F., calc.
550	"		sh. bleached bl. grn. & choc. brn. soft., calc.

PROPERTY Desert Queen

LOCATION S 45° W, 200 ft. From CLAIM D. Q. #10 G.E.

SW cor. D. Q. #13 To

HOLE NO. DR-9 TOTAL DEPTH 300' DATE 4-27-55

PROBED BY R. L. Baxter DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-1	0-4		Ss, vf, pale grn., med. soft
6	"		silty sh., choc. brn., med. soft
12	"		ss., f., med. soft, pale grn.
30	"		sh., med. soft., brn., calc.
50	"		st., med. soft, lt. bl., grn. & brn. w/some sh, calc.
70	"		ss, vf., wh. & lt. grn., med. soft.
105	"		sh & st, bleached, v-soft sh. bl-grn. & choc. brn., calc
125	"		ss., f. med., wh & pale grn. soft, calc.
140	"		sh., bl-grn. bleached & choc. brn. v. soft, yel iron stain
165	"		ss, wh, vf., soft, bentonitic calc.
195	"		sh & st, lt. grn, soft-med. calc.
200	"		ss, wh., vf, med-soft, calc.
210	"		ss, vf & st. lt grn, soft calc.
235	"		st. & sh., bl-gy & grn-gy, calc., soft
252	"		ss., f-m, soft, poorly cemented, calc.
258	"		st, soft, lt-grn & wh. bentonitic calc.
266	"		sh., soft, choc.-brn, calc.
299.7	296-		st, lt. grn., hd-soft, calc.
300			gypsum, wh. soft

PROPERTY Desert Queen

LOCATION S 80 E, 720' From NW Cor. D.Q. #7 To

CLAIM D. Q. #7

G.E.

HOLE NO. DR-10

TOTAL DEPTH 273

DATE 4-28-55

PROBED BY R. L. Baxter

DESCRIBED BY R. L. Baxter

H. B. Miller Drilling Co.

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-10	0-4		Ss, F., poorly cemented, wh.
20	"		st. & sh. vareg. brn., lt. grn & yel limonite stain 16-18
21.5	10-4		" " " " "
75	0-4		" " " " "
140	"		ss.,vf. med. soft, wh. & tan
145	"		sh., choc. brn., soft., calc
160	"		st. & sh., grn. & bl. soft-hd. calc.
195	"		st, lt. grn & wh., vf. ss, soft calc.
255	"		st, lt grn. & bl, soft calc.
260	"		ss, med-crse, poorly cemented calc.
266	"		st, lt. grn. & bl, soft, calc.
272	"		ss, vf, wh., soft, calc.
273	"		st, lt. grn. & bl. soft calc.

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PROPERTY Desert Queen

LOCATION NE4 NW4 NE4 Sec 14 CLAIM 21/23 O.E. Ray Drilling Company

T 22S, R 14E SLM

HOLE NO. DR-11 TOTAL DEPTH 505 DATE 6-30-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

North 300' from SE cor. 21, SW cor. 23, NE Cor. 36, NW cor. 38

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-20			ss, f, lt. brn, hard, sty.
20-40			sts, lt. brn, hard w/red ms
40-60			sts, lt. brn, hard w/blue ms
60-71			sts, lt. brn, hard
71-72			chert cgl in sts, lt. brn, hard
72-87			sts, lt. brn, w/blue ms
87-91			sh, red & blue
91-110			sts, lt. brn w/blue ms
110-112			ms, red
112-134			sts, lt. brn. w/blue ms & some red sh. & chert buttons
134-138			ms, red
138-150			sts, lt. brn w/red & blue sh.
150-177			sh, red & blue-green silty
177-183 Plug Neg.			sh, red & green, sdy, lt. brn f. hard
183-195			sh, red, sty.
195-208			sh, green sty
208-209			sh, blue
209-216			ss, f-m, lt. brn, hard w/blue & red sh. buttons
216-235			sts, lt. green, hard w/red sh. buttons
235-297			shs, red, blue & green sty.
297-301			sts, lt green, hard
301-306			sh, red, sty.
306-310			sts, lt. gr, hard (?)
310-331			sh, red, sdy & sty.

PROPERTY Desert Queen

LOCATION NE4 NW4 NE4 Sec.14 CLAIM 21/23 O.E. Ray Drilling Company

T 22S, R14E, SLM

HOLE NO. DR-11 TOTAL DEPTH 505' DATE 6-30-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

North 300' from SE cor. 21, SW cor. 23, NE cor. 36, NW cor. 38

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
331-340			sts, lt. brn, hard
340-374			shs, red & blue
374-386			ss, f-m, lt. brn, hard
386-391			sh, red sty.
391-441			ss, f. lt. brn, hard
441-444			ss, f. lt. brn, hard (?) w/few red sh buttons
444-448			ss, f-m, lt. brn, friable
448-453			sh, red & green sdy.
453-456	Plug Neg.		ss, f-m, lt. brn, friable
456-459	started drilling w/water		ss, m-c, lt. brn, friable
459-464			ss, f-m, lt. brn, friable
464-471			ss, m-c, lt. brn, med hard-friable
471-487			ss, f-m, lt. brn, friable
487-498			sh, red & blue sdy (?)
498-505			sh, red & blue

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PROPERTY Desert Queen

Ray Drilling Company

LOCATION SE4 SE4 Sec. 11 CLAIM 24 G.E.

T 22S R 14E SLM

HOLE NO. DR-12 TOTAL DEPTH 606' DATE 6-30-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-32			ss, f. lt. brn, hard calc.
32-39			ss, f, lt. brn, hard calc w/red ms
39-60			ss, f, lt. brn, hard calc.
60-63			ss, f, lt. brn, & red, hard calc.
63-69			ss, f, lt. brn, & red w/hard gr sh. buttons
69-84			sts, lt. brn., hard w/red sh.
84-145			sts, lt. brn. w/gr sh.
145-170			ss, f-m, lt. brn, hard, calc.
170-195			sh, red, sdy
195-197			ss, f-m, lt. brn, hard, calc w/red sh buttons
197-204			ss, f-m, lt. brn, friable, calc, w/hard gr sh. buttons
204-207	started drilling water		sh, red & gr w/ss, fm, lt. brn. calc.
207-240			sh, red & gr. sdy
240-246	Plug		ss, f-m, lt. brn, calc w/abundant red sh.
246-262			sh, blue & red, sdy
262-268			ss, f-m, lt brn calc w/red & blue sh.
268-390			shs, red, gr & blue, sdy, f-c, lt. brn.
390-396			chert cgl, metrix m-c, lt. brn, calc
396-399			sh, red, gr, & blue
399-414			ss, m-c, lt brn w/blue & gr sh. buttons
414-426			sh, red & blue, sdy, f-m, lt brn
426-429			ss, m-c, lt. brn, calc w/abundant sh, red & blue
429-487			sh, red & gr & blue
487-495			sh, red, gr, & blue, sdy, f-m, lt bl.

PROPERTY Desert Queen

Ray Drilling Company

LOCATION SE4 SE4 Sec. 11 CLAIM 24 G.E.

T 22S R 14E SLM

HOLE NO. DR-12 TOTAL DEPTH 606' DATE 6-30-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
495-521.6			ss, m-c, lt. brn w/red, gr
521.6-522.0	.02		ss, m-c, lt brn, calc
522.0-522.5	.02		"
522.5-522.9	.05		"
522.9-523.2	.09		Ss, m-c, lt. brn, calc w/gr & blue sh. buttons
523.2-523.7	.13		"
523.7-524.0	plug .03		"
524.0-525.0	.01		"
525.0-568			"
568-606			Sh, red, blue & gr sdy, m-c, lt. brn.

Ray Drilling Company

PROPERTY Desert Queen

LOCATION NW4 SW4 Sec. 13 CLAIM 43 G.E.

T 22S R 14E SLM

HOLE NO. DR-13 TOTAL DEPTH 597' DATE 6-18-55

PROBED BY Smith & Hanson DESCRIBED BY Smith and Hanson

S 45° W 300' from SE Cor. 42, SW Cor. 44, NE Cor. 43, & NW Cor 45

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-15			cgl. lt. brn, ¼" pebbles, calc.
15-25			ss, white, v. lt. brn, f-m, hard, calc.
25-61			Sh, gy.
61-80			Sh. lt. red & some gy.
80-84			Ms, red lt.
84-94			ss. vf, lt. brn. hard
94-98			Ms purple-red
98-112			Sh, red, hard ribs
112-139			Ss, f-M, lt. brn, med soft
139-142			Sh, bk-gy, reddish tinge
142-146			Ms, lt. gn-gy
146-265 Plug			Ms, red-gn, little H_2O @ 165'
265-295			cgl. chert, red, water @ 295'
295-325			Sdy sh, red
325-331			Ss, c, white-buff, abundant r. sh.
331-436			Sh, red, sdy
436-469			Ss, m-c, chert, r. sh. buttons
469-493			Sh, r. some gn.
493-496			Ss, f-m lt. brn.
496-499			Ss, lt. gy, f-m w/r. & gn sh. buttons
499-516			Ss, c. lt. brn.
516-519.3	.02		Ss, c, lt. brn
519.3-519.5	.06		"
519.5-519.7	.10		"

RECEIVED
SEP 20 1955

PROPERTY Desert Queen

LOCATION NW4 SW4 Sec. 13 CLAIM 43 O.E.

T 22S, R 14E, SLM

HOLE NO. DR-13 TOTAL DEPTH 597' DATE

PROBED BY Smith and Hanson DESCRIBED BY Smith and Hanson

S 45° W 300' from SE Cor. 42, SW Cor. 44, NE Cor. 43, & NW Cor. 45

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
519.7-520.0	.14		Ss, c. lt. brn.
520.0-520.5	.12		"
520.5-521.0	.10		"
521.0-521.5	.08		"
521.5-522	.06		"
522-523	.05		"
523-524	.04		"
524-526	.02		"
526-530 Plug			Sh, red
530-568			Sh, red, sdy, M-C
568-597			Sh, red & gr

PROPERTY Desert Queen

LOCATION SW4 NW4 Sec 13 CLAIM 48 G.E.

T 22S, R 14E, SLM

HOLE NO. DR-14 TOTAL DEPTH 550' DATE 6-30-55

PROBED BY B. A. Hanson DESCRIBED BY B. A. Hanson

DEPTH	PROBE ASSAY	SAMPLE ASSAY	LITHOLOGY
0-15			ss, f, lt. brn & red, hard
15-92			ss, f, lt. brn, hard
92-96			sh, red
96-111			sts, lt brn, hard w/blue & red sh. buttons
111-117			sts, ss, f. lt. brn, hard, w/blue sh. buttons
117-126			sts, ss, f, lt. brn, hard
126-137			chert cgl up to ¼" sts-ss, f-m, lt. brn.
137-162			ss, f-m, lt. brn, friable
162-164			chert cgl up to ¼" in ss, f-m, lt. brn friable
164-169			ss, f-m, lt. brn, friable
167-180			sh, red & blue
180-189 Plug	Neg.		ss, f., lt. brn, med hard-friable
189-198	started drilling w/water		chert cgl up to 1/8" in ss, f. lt. brn, friable
198-204			sh, red
204-457			No samples, drilling troubles
457-469			sh, red, gr & blue sdy (?)
469-477			ss, f-m, lt brn, friable
477-483			sh, red sdy (?)
483-505			ss, f-m, lt. brn, friable
505-523			sh, red gr, & blue
523-526			ss, f-c, lt. brn, friable
526-550			sh, red, blue & gr.

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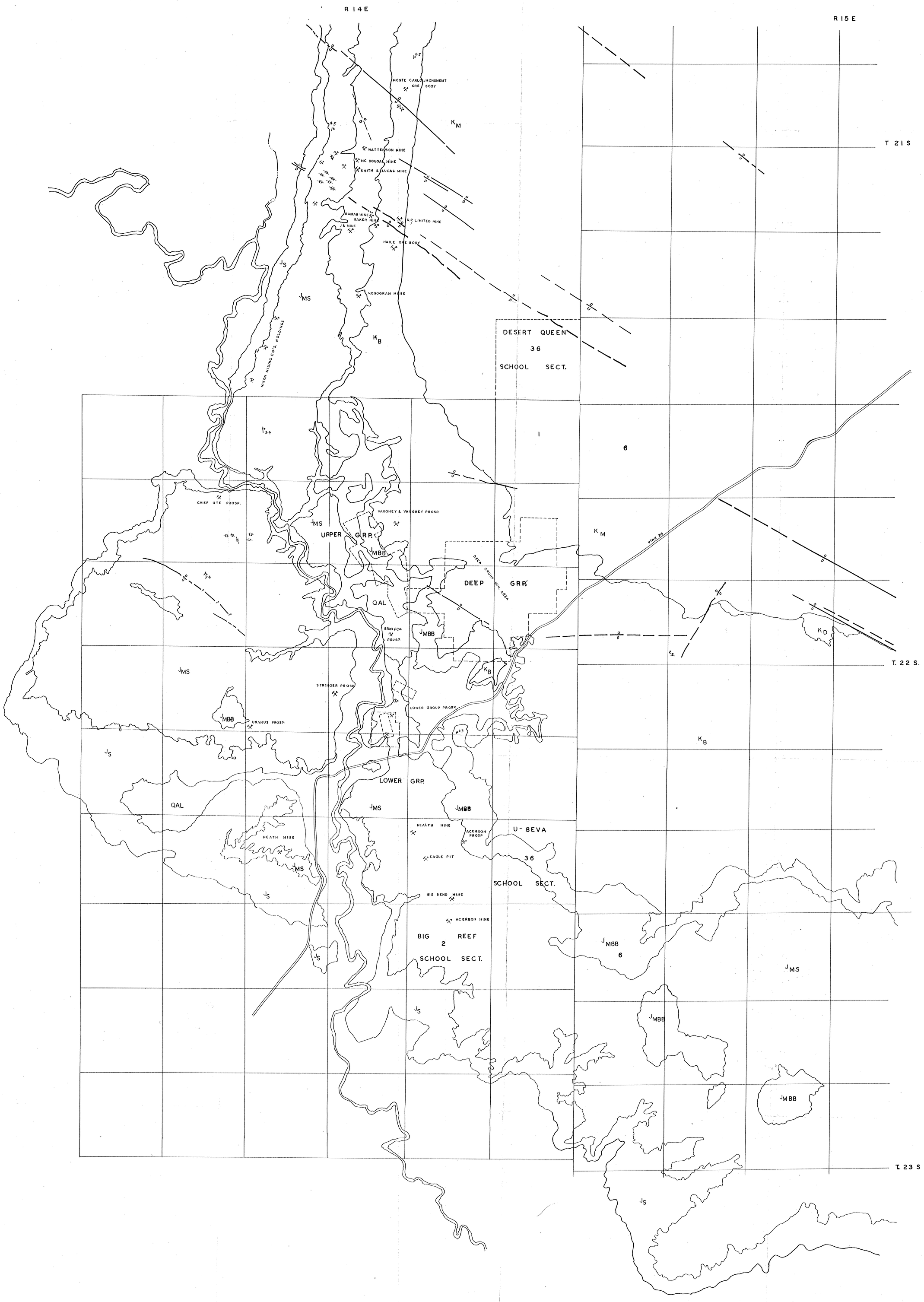
SEP 2 0 1955

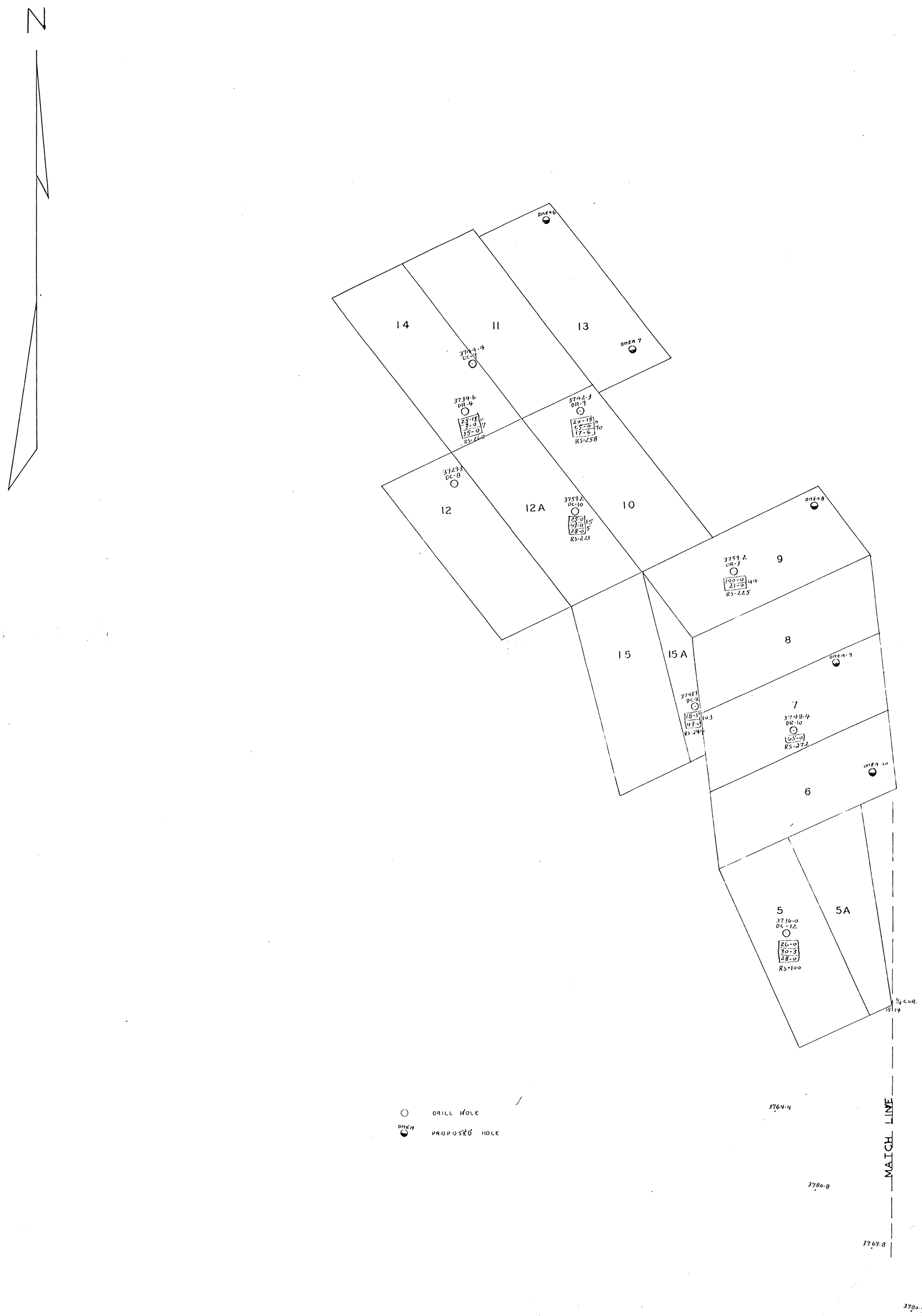


QAL - ALLUVIUM
K_M - MANCOS SH.
K_D - DAKOTA SS.
K_B - BURRO CANYON SS.
J_{MBB} - BRUSHY BASIN SH.
J_{MS} - SALT WASH SS.
J_S - SUMMERVILLE SH.

VITRO MINERALS CORP.
GEOLOGIC MAP
DESERT QUEEN URANIUM COMPANY

SCALE = 1" - 2000'
PLATE E
DATE 8/2/55 DRAWN BY CHS

RECEIVED
SEP 20 1955



VITRO MINERALS COMPANY

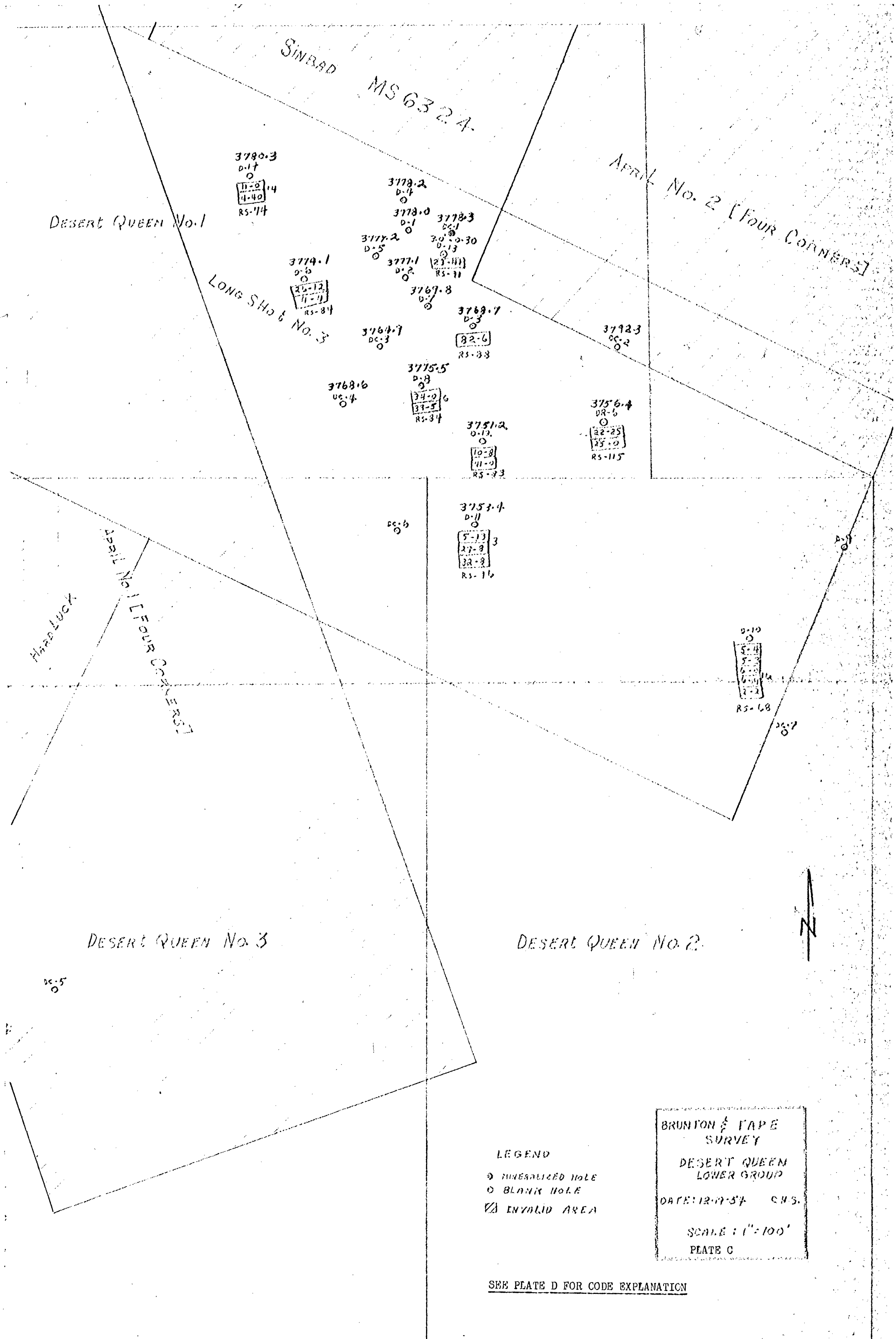
DESERT QUEEN
UPPER GROUP

T. 22 S., R. 14 E. SLM

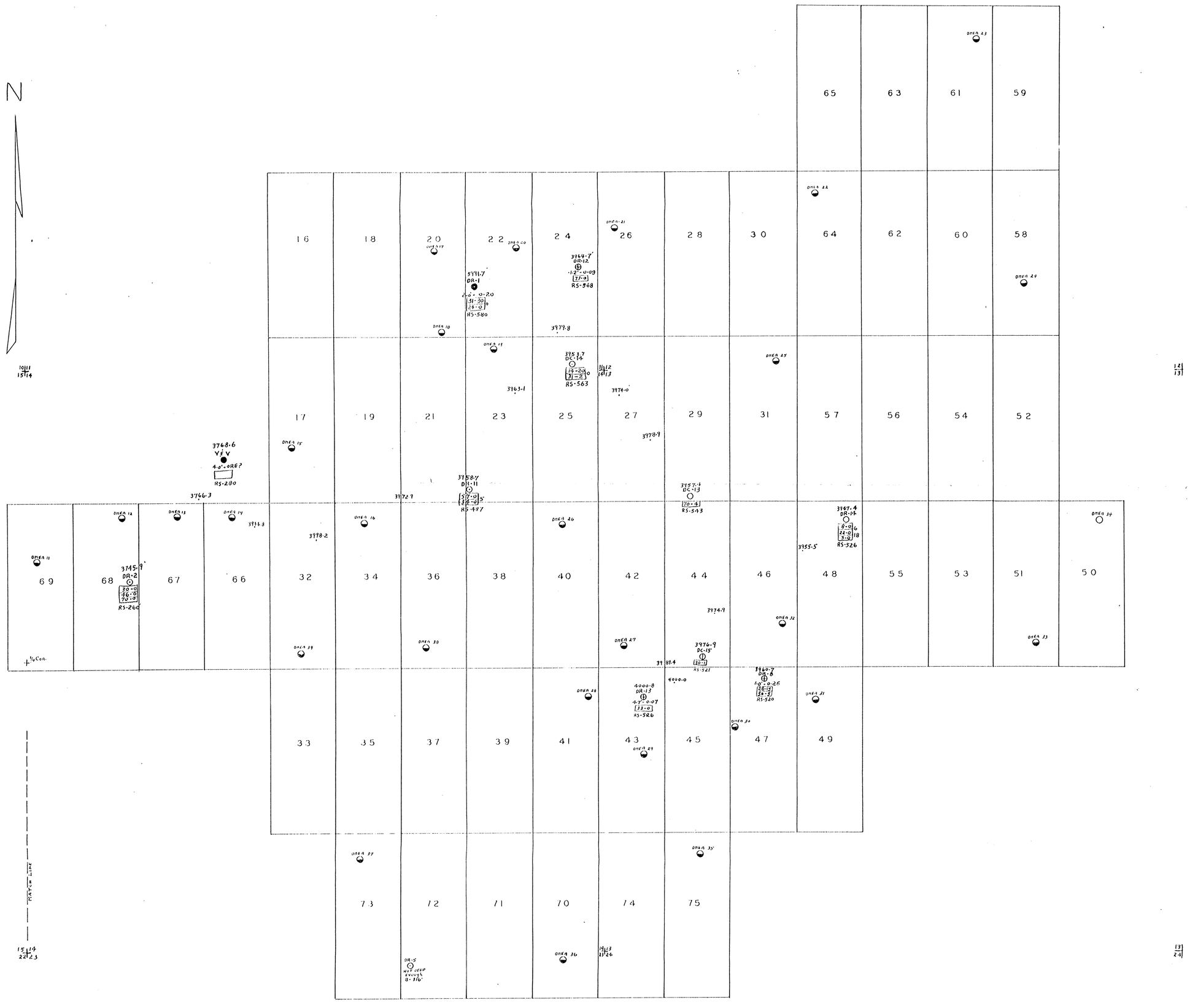
PLATE B

SCALE 1" = 400'

DATE 8/13/55 BY CHS



SEE PLATE D FOR CODE EXPLANATION



EXPLANATION

4000.0'	GROUND ELEVATION
DR-13	HOLE NUMBER
○	HOLE LOCATION
4.1'-0.07	ORE THICKNESS & GRADE
33-0	SS AND BL MS THICKNESS
RS-526	BOTTOM OF SS
●	ORE HOLE
⊕	MINERALIZED HOLE
⦶	TRACE HOLE
○	BLANK HOLE
DMEA ●	PROPOSED EXPLORATION HOLE

VITRO MINERALS COMPANY

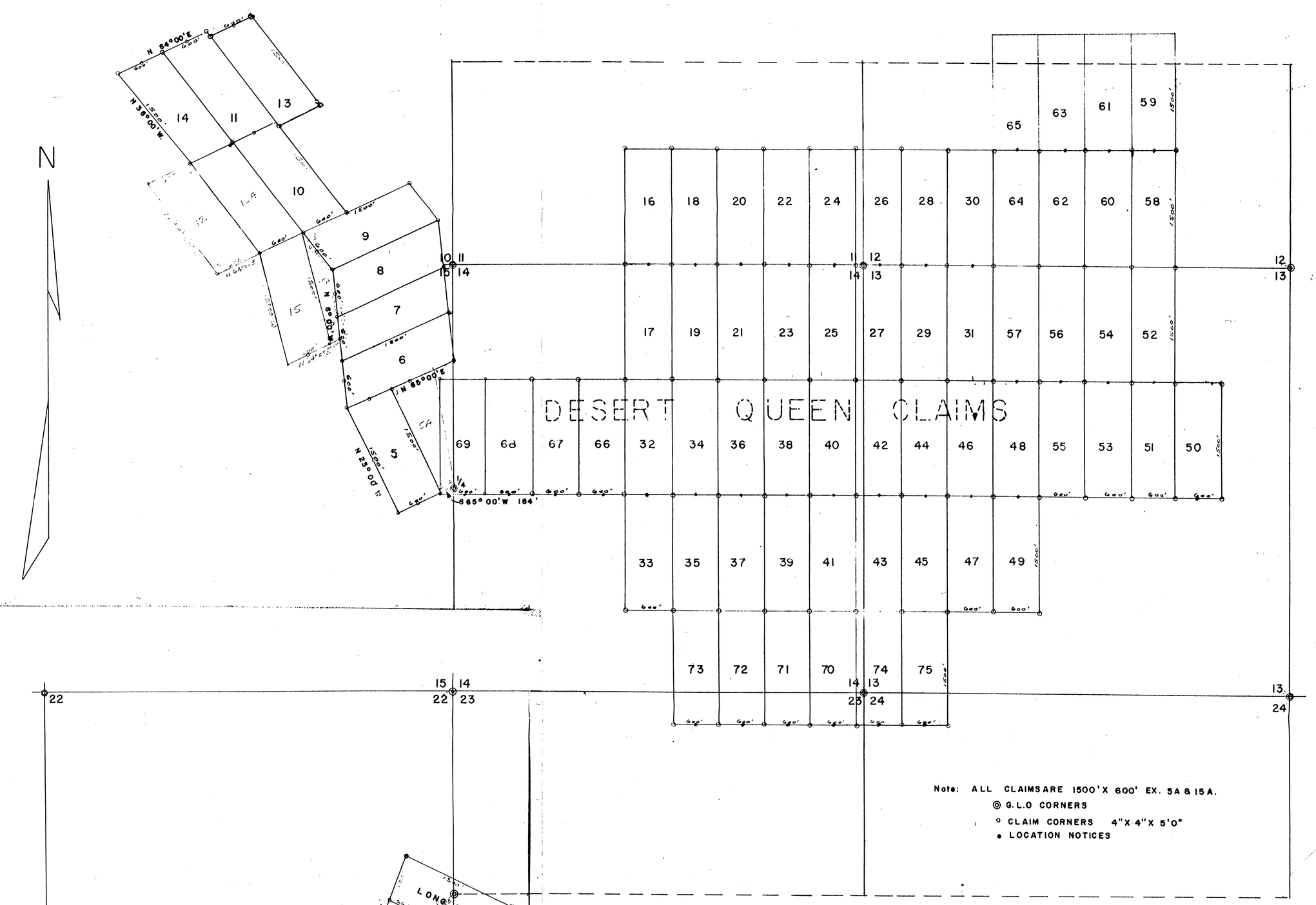
DESERT QUEEN
DEEP GROUP CLAIMS
T.22 S. R.14 E. S.L.M.

SCALE 1" = 400'

PLATE D

DATE 8/12/55 BY CHS

RECEIVED
SEP 20 1955



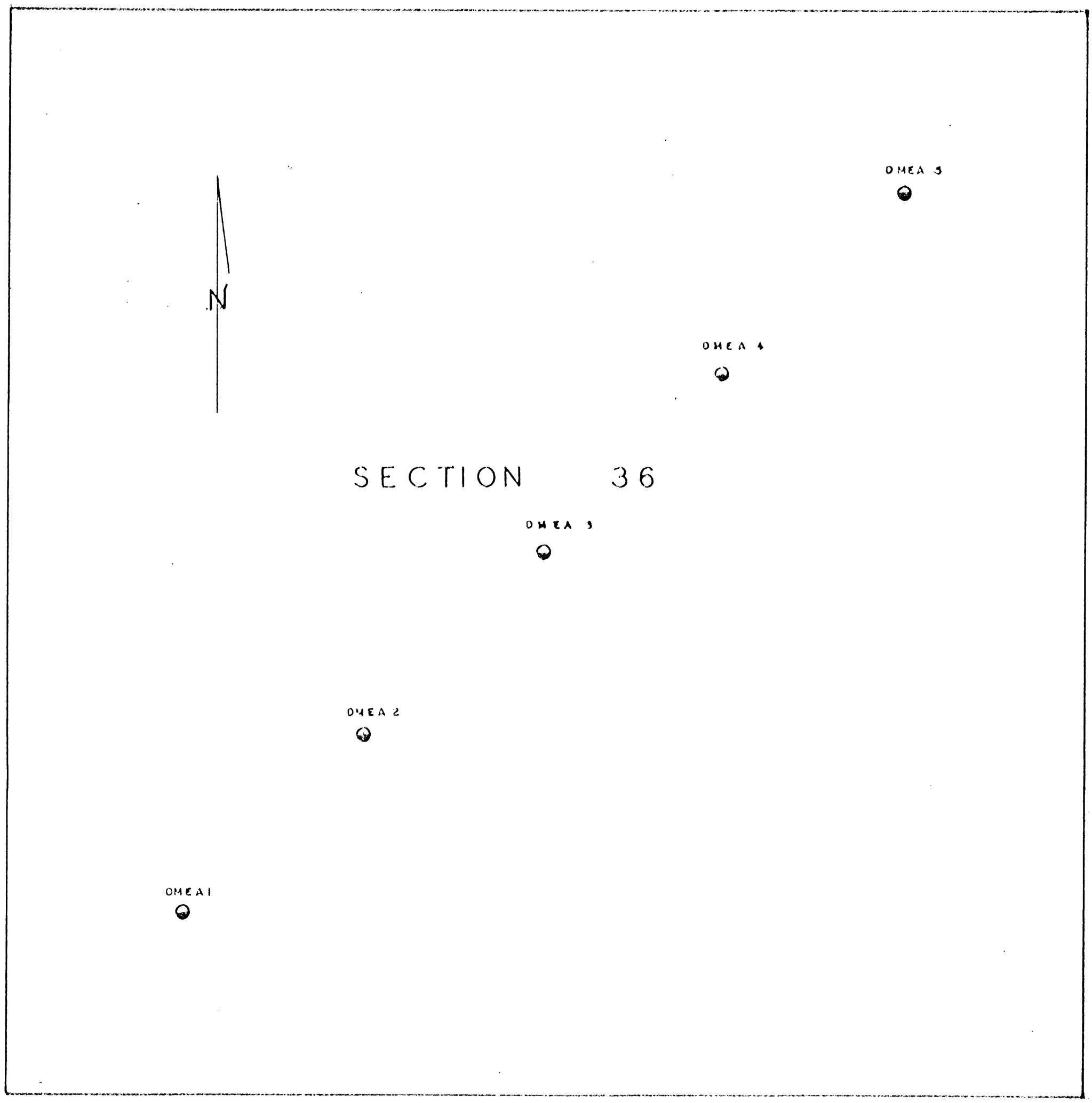
TOWNSHIP 22 SOUTH, RANGE 14 EAST, S.L.M.

EMERY COUNTY, UTAH.

SCALE 1" = 600'

SURVEY BY JOHN BENE, C.E.
1050
PRICE, UTAH.

SEPT. 20, 1954.
Revised.
Nov. 19, 1954.
PLATE A



VITRO MINERALS CO.

DESERT QUEEN

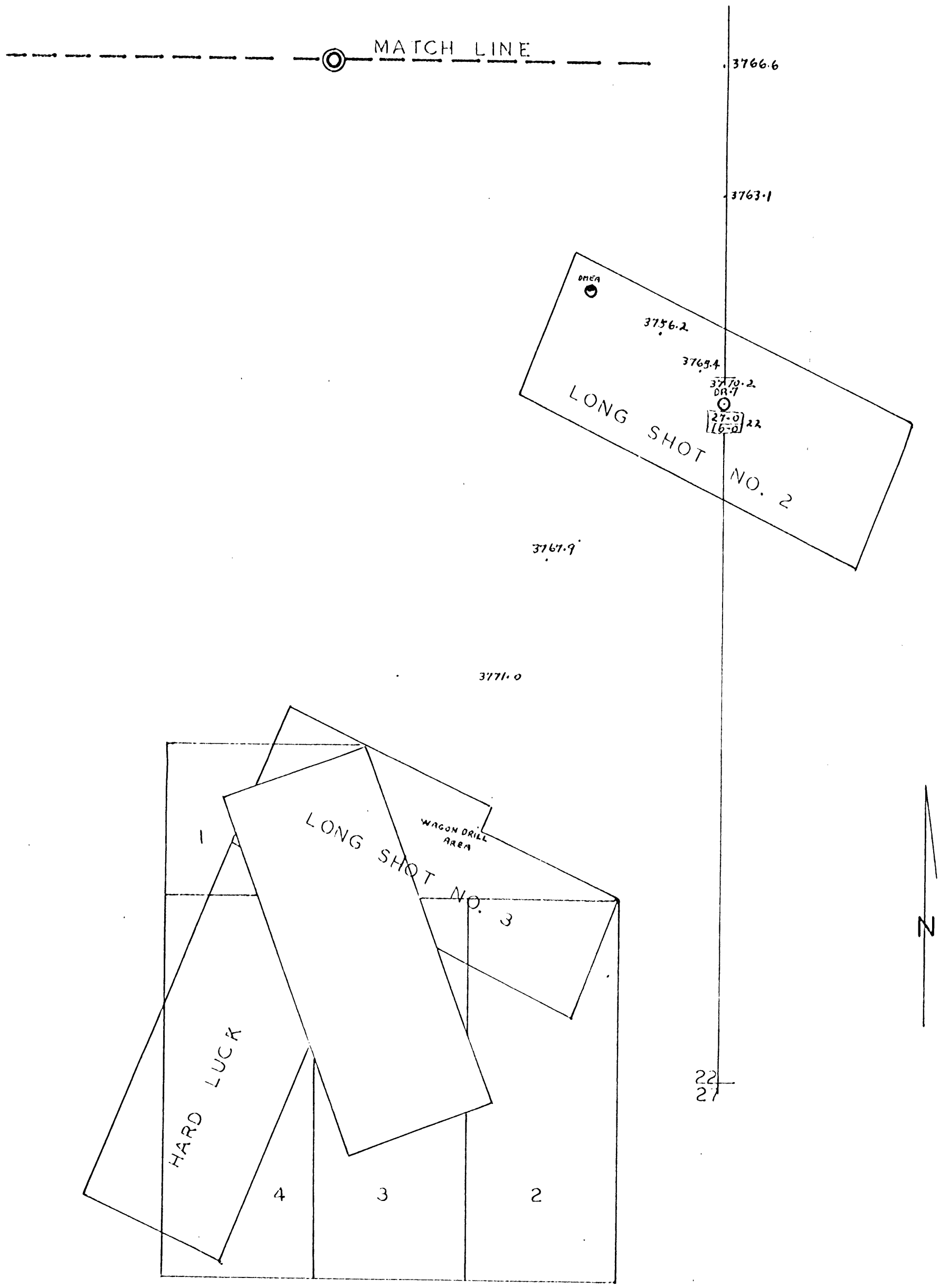
SCHOOL SECTION

SECT. 36, T.21S., R.14E. SLM

SCALE 1"= 500'

PLATE F

DATE 8 13 55 BY CHS



O DRILL HOLE

● PROPOSED HOLES

VITRO MINERALS COMPANY

DESERT QUEEN

LOWER GROUP

SCALE 1" = 400'

T. 22 S., R. 14 E. SLM

PLATE G

DATE 8/14/55 BY CHS

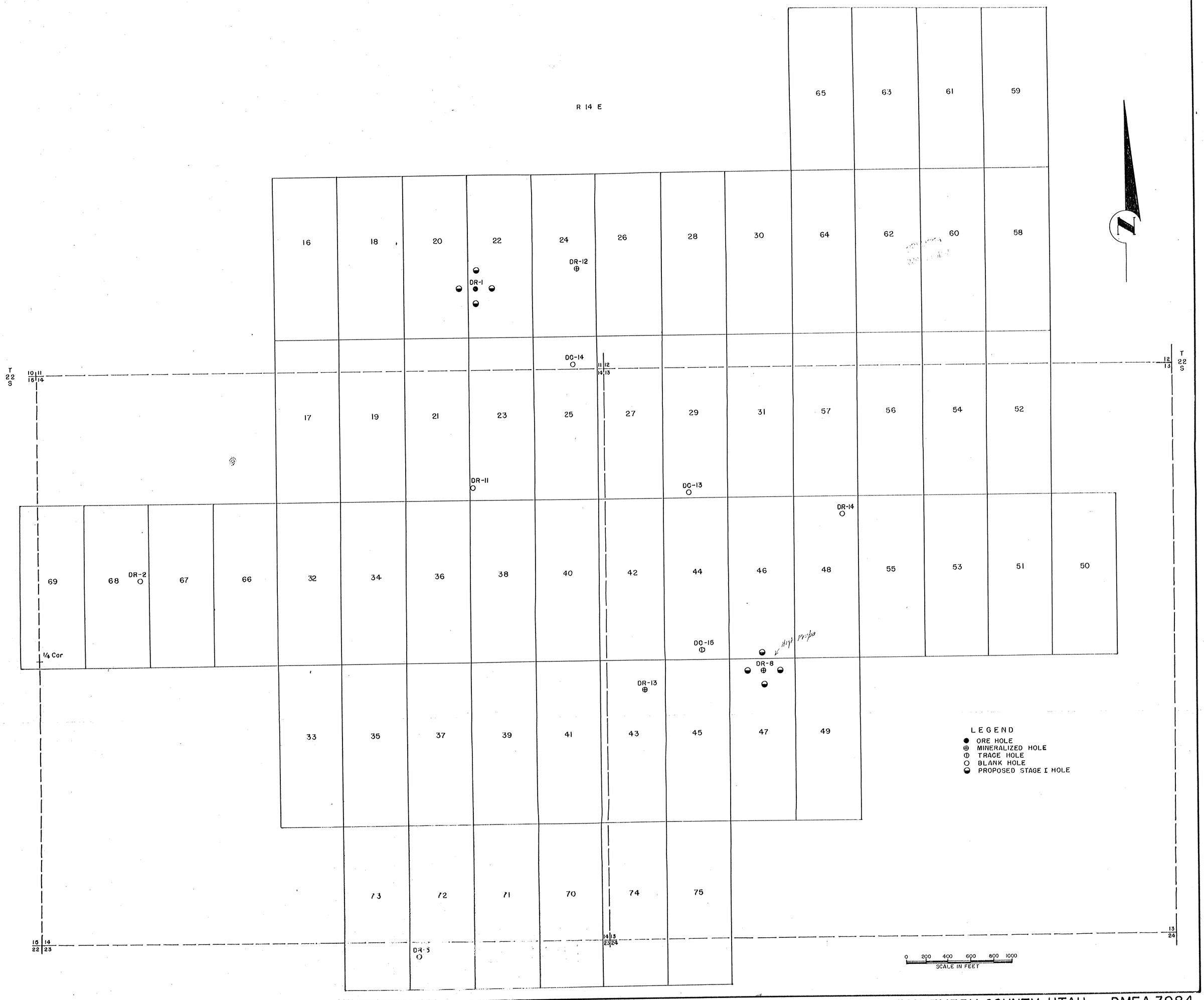
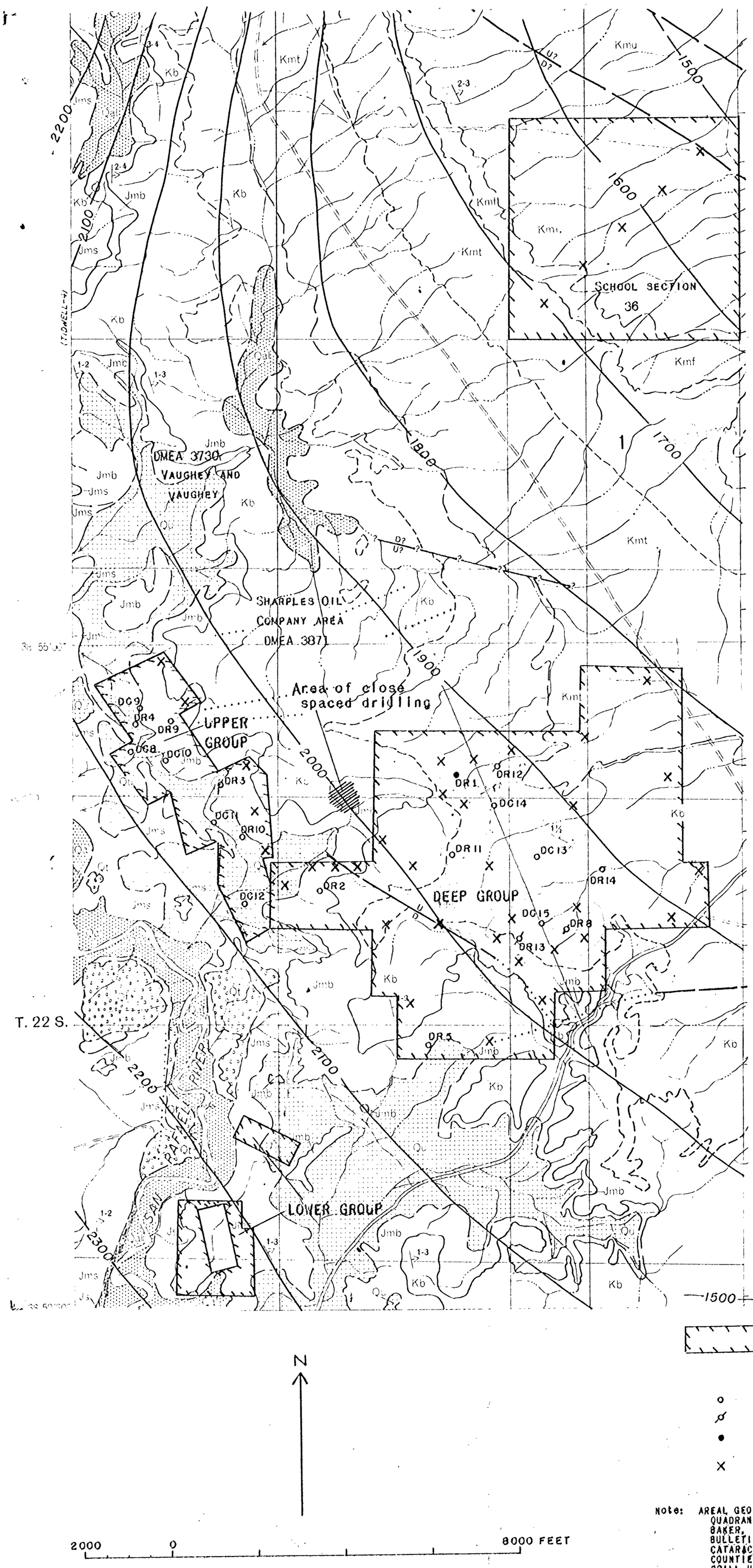


FIGURE 1 - MAP OF DEEP GROUP SHOWING LOCATION OF HOLES DRILLED AND PROPOSED STAGE I HOLES, VITRO MINERALS CORPORATION, EMERY COUNTY, UTAH. DMEA 3984, SUPPLEMENTAL REPORT



EXPLANATION

QUATERNARY

- **Qal** — Alluvium
- **Qt** — Terrace deposits (?)
- **Qu** — Undifferentiated sand, residual mantle and slope wash

CRETACEOUS

Upper Cretaceous

- **Kmu / Kmf / Kmt** — Mancos shale; Upper part, Kmu; Ferron(?) sandstone member, Kmf; Tununk shale member, Kmt;

Lower and Upper Cretaceous

- **Kd** — Dakota sandstone

Lower Cretaceous

- **Kb** — Probable equivalent of the Burro Canyon formation

JURASSIC

Upper Jurassic

- **Jmb / Jms** — Morrison formation; Brushy Basin shale member, Jmb; Salt Wash sandstone member, Jms
- **Js** — Summerville formation

Contact
Can be located within 30 feet horizontally

Contact
Can be located within 30 to 200 feet horizontally

Contact
Cannot be located accurately, probable error greater than 200 feet horizontally

Resistant bed within a formation
May be traceable only locally

Fault
Dashed where approximately located
U, upthrown side; D, downthrown side
Questioned where probable

Concealed fault

Strike and dip of beds
Based on field measurement

—1500— STRUCTURE CONTOUR DRAWN ON BASE OF WINGATE SANDSTONE. INTERVAL 100' FEET.

BOUNDARY OF VITRO MINERALS PROPERTY

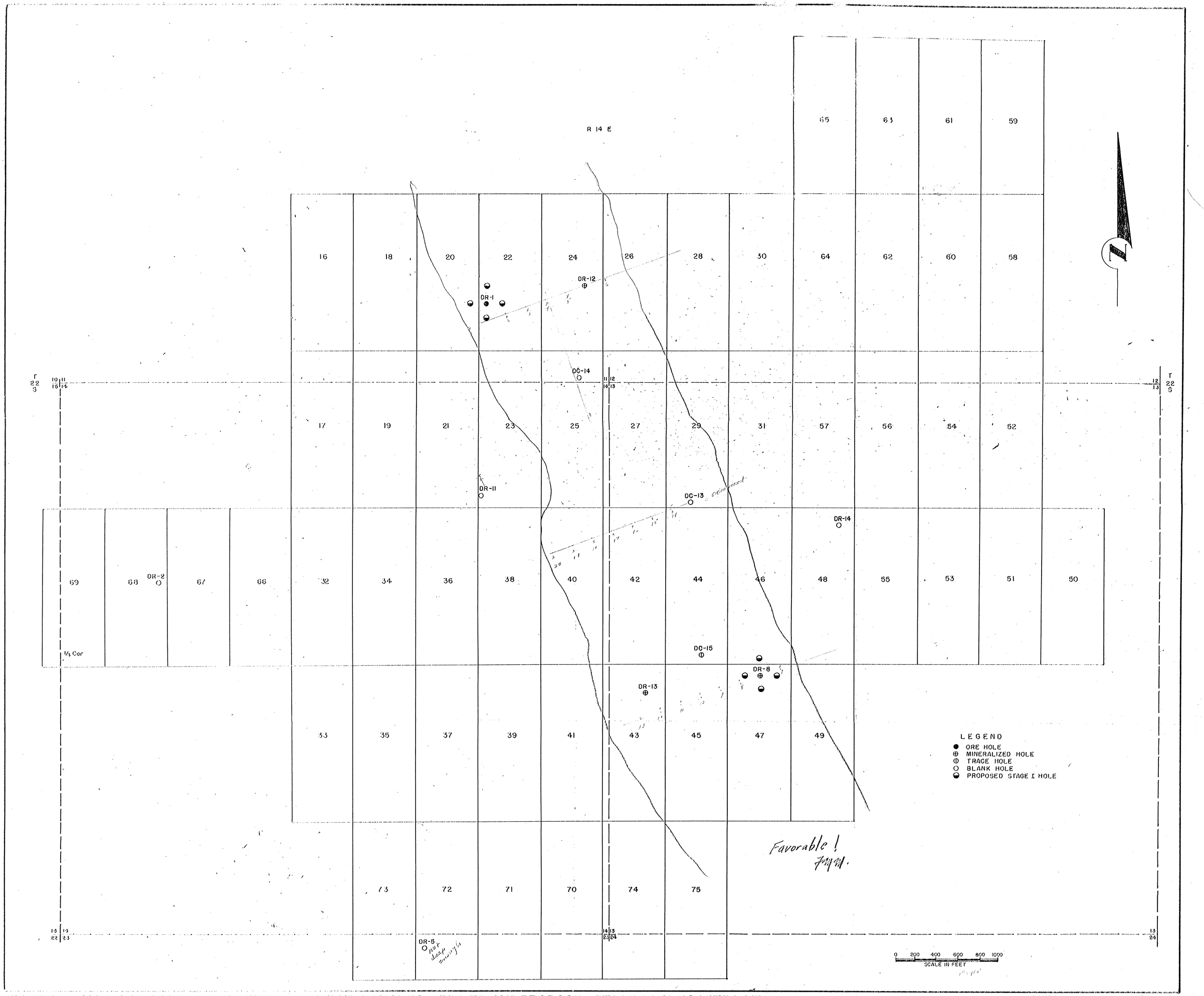
EXISTING DRILL HOLE DRILLED BY COMPANY. (DR, ROTARY DRILLED, DC, CORE DRILLED)

- o BARREN
- MINERALIZED
- ● ORE-BEARING

X PROPOSED DRILL HOLE

Note: AREAL GEOLOGY FROM U.S. GEOLOGICAL SURVEY PHOTOGEOLOGIC QUADRANGLE MAP, TIDWELL 3. STRUCTURE CONTOURS FROM BAKER, A.A., 1946 (1947), U.S. GEOLOGICAL SURVEY BULLETIN 951 GEOLOGY OF THE GREEN RIVER DESERT-CATARACT CANYON REGION, EMERY, WAYNE AND GARFIELD COUNTIES, UTAH. PLATE 2. CLAIM BOUNDARIES, EXISTING DRILL HOLES AND PROPOSED DRILL HOLES FROM APPLICANTS MAP.

FIGURE 2. GEOLOGIC MAP SHOWING EXISTING DRILL HOLES AND PROPOSED DRILL HOLES, VITRO MINERALS PROPERTY, EMERY COUNTY, UTAH.



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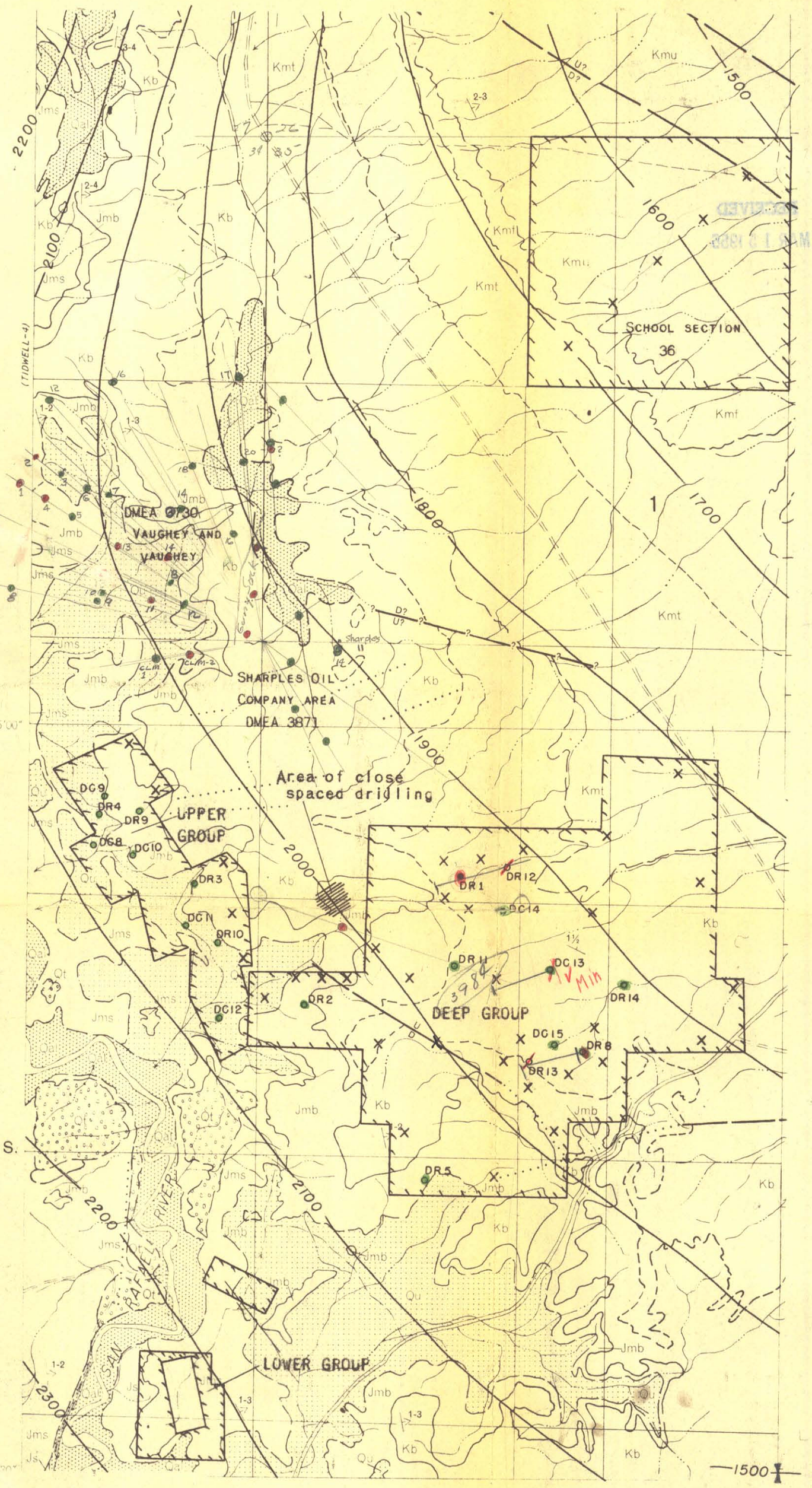
Jack Robbel
Permit 3928

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3984
FEBRUARY 1956



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- o BARREN
- MINERALIZED
- ● ORE-BEARING

× PROPOSED DRILL HOLE

N

2000 0 8000 FEET

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