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

OCT 17 1956

Mr. L. M. Traver
Executive Officer
DMEA Field Team, Region III
22h New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-1235 (Premium)
Contract No. [illegible]-2996
Leo E. Cox and T. R. Gillenwaters
Chem Mine
Mesa County, Colorado

Dear Mr. Traver:

In accordance with the request contained in the Operator's letter of October 1, 1956, we are enclosing the original and five copies of a Termination Agreement between the Government and Leo E. Cox and T. R. Gillenwaters, signed by the Administrator.

If you and the Operator find the agreement in order, please have the Operator sign all six copies and make the usual distribution thereafter.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

P. F. Yopes

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

MChing/pla
10-16-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, 36h3
THKiilsgaard, 522h
JHCosted, 3210,GSA
Code 700
Mr. Ching

MF-103
(Revised April 1952)

DMEA
Date Rec'd. MAR 30 1956

Washington City

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

BUREAU OF MINES
Denver, Colorado

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

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

Not to be filled in by applicant

Docket No. 4235
Metal or Mineral
Date Received
Estimated Cost
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: Lee E. Cox
P. O. Box 1451
Grand Junction, Colorado

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

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

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

(*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 No

(*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.

Uranium

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

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

(*c*) The work will start within 14 days and be completed within 3 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

[x] Money and [X] 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 March 15, 6, 195...

Lee E. Cox (L. E. Cox)
(Applicant)

By L. E. Cox

* See Supplemental Sheet

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

SUPPLEMENTAL SHEET
FOR FORM MF-103

3.	(f)	X Claim No. 3	Book 648 P. 125
		K Claim No. 6	Book 648, P. 129
		K Claim No. 5	Book 648, P. 128
		K Claim No. 4	Book 648, P. 127
		Atlas Fraction	Book 258, P. 459

4. (a & b) Subsequent to the discovery of a substantial ore body behind a mineralized outcrop on Claim K-5 by wagon drilling, an incline was driven into the ore from which between four and five hundred tons of .27% U_3O_8 and approximately 1.00% V_2O_5 have been mined. An adit was driven into another ore body on Claim K-5, which was also discovered by wagon drilling and from which approximately 50 tons of plus .20% U_3O_8 rock have been mined.

Drilling depths have been shallow 30-50 feet. Gamma-logs of the ore holes indicate that 300 to 500 tons of approximately .40% U_3O_8 remain to be mined. At present the ore is being mined under a lease in the name of Lee Cox at the rate of between 200 and 300 tons of ore per month.

Production equipment consists of a 125 Gardner-Denver compressor, and three Gardner-Denver jack-leg drills. Wooden platform bins for efficient stockpiling of the ore have been constructed and a ford loader is available for loading the ore. All ore is hand trammed, utilizing wheel barrows.

(c) Geologic report included.

(d) Access roads.

1. Access can be gained to the property by traveling 10 miles southeast from Grand Junction on U. S. 50 to Whitewater; thence 44 miles southwest on State 141 to the Calamity Hill road; thence 6 miles south to the top of Calamity Hill; and thence 8 miles over a well marked road to the Okan Mine on Tenderfoot Mesa.

An alternate route is to turn off on County Road 101 upon reaching Taylor's Ranch, which is located 16 miles southwest of Whitewater via State 141; thence to travel over the Uncompahgre highlands 25 miles to a right hand turn off just north of the Outlaw Mesa camp; and thence travel 22 miles over winding but well marked mine access roads to Tenderfoot Mesa and the Okan Mine.

The distance from the Okan Mine to Grand Junction, Colorado, the nearest supply point, is 70 miles. Experienced mining and

drilling personnel can be secured in Grand Junction. Grand Junction is also the location of the Climax Uranium Company's mill, which is presently processing the ore being produced by the mine.

(e) Manpower, materials, supplies, and equipment for any type of exploration or mining program are available in Grand Junction. Water is available for drinking from a spring 14 miles from the property. Enough water for drilling might be available as live water in the mine, if a good size storage sump is constructed. All power can be furnished by gasoline or diesel engines.

5. (b) The proposed work is indicated in the accompanying map. Drill roads and drill sites will of course be necessary before drilling is commenced.

Fences of close-spaced holes (25 feet apart) are designed to extend known mineralization along expected trends. These holes are estimated as averaging 50 feet in depth.

The deeper holes proposed for the northeastern part of the claimed area are designed as a pattern of holes for testing the favorability of this large area. Fences of holes are spaced 300 feet apart and each hole within fences is 150 feet from the adjacent hole. The average depth of these holes is estimated at 250 feet.

All holes will be gamma and lithologically logged to insure that the maximum amount of available information is taken advantage of. Subsurface maps will be prepared of interesting areas to aid in isolating favorable ground which warrants more extensive drilling.

(d) The applicant has personnel in his employ who have been responsible for the successful operation and exploration of several mines on the Colorado Plateau during the last two years. In the applicant's employ is Robert L. Rock, mining engineer, with over four years experience in uranium exploration work. Mr. Rock can ably supervise the explorative work.

6. Costs

1.	Road building tractor work - 20 days @ $100.00/day (contract)	$2,000.00
2.	Drilling 15,000 feet @ $1.50/foot (contract)	22,500.00
3.	Supervision (geologist)	2,000.00
	Surveyor	500.00
4.	Instruments (counter, reel, probe, recorder)	1,295.00
5.	Transportation (pickup)	1,200.00
6.	Gasoline	50.00
7.	Contingencies (maps, blueprints, food, etc.)	500.00
		$30,045.00

7. (b) My share of the costs will be partly met by furnishing radiation detection equipment and by furnishing experienced supervision of the project. The remainder of my share will be made up in cash.

LOG OF WAGON DRILL HOLES BY RADIOMETRIC PROBING ON THE ATLAS PROPERTY OF OKAN URANIUM CORPORATION, TENDERFOOT MESA, GATEWAY MINING DISTRICT, COLORADO

#63

@ 11.3 - 0.20
11.6 - 0.24
11.9 - 0.28
12.2 - 0.24
12.5 - 0.23
12.8 - 0.31
13.1 - 0.51
13.4 - 0.50
13.7 - 0.49
14.0 - 0.39
14.3 - 0.45
14.6 - 0.49
14.9 - 0.54
15.2 - 0.88
15.5 - 0.62
15.8 - 0.58
16.1 - 0.36
16.4 - 0.29
16.7 - 0.29
17.0 - 0.22
17.3 - 0.27
17.5 - 0.20

#65

10.2 - 0.20
10.5 - 0.25
10.8 - 0.29
11.1 - 0.42
11.4 - 0.37
11.7 - 0.33
12.0 - 0.33
12.3 - 0.39
12.6 - 0.48
12.9 - 0.46
13.3 - 0.56
13.5 - 0.49
13.8 - 0.43
14.1 - 0.58
14.4 - 0.95
14.7 - 1.50
15.0 - 1.74
15.3 - 0.77
15.6 - 0.48
15.9 - 0.44
16.2 - 0.40
16.5 - 0.35
16.8 - 0.30
17.1 - 0.24
17.4 - 0.20

#66

@ 11.2 - 0.20
11.5 - 0.28
11.8 - 0.32
12.1 - 0.40
12.4 - 0.65
12.7 - 0.90
13.0 - 0.94
13.3 - 1.28
13.6 - 1.23
13.9 - 1.17
14.2 - 1.05
14.5 - 0.86
14.8 - 0.72
15.1 - 0.70
15.4 - 1.65
15.7 - 2.10
16.0 - 1.47
16.3 - 0.68
16.6 - 0.53
16.9 - 0.40
17.2 - 0.28
17.5 - 0.24
17.8 - 0.20

#67

11.1 to 14.1 -0.15
14.2 - 0.20
14.5 - 0.24
14.8 - 0.35
15.1 - 0.60
15.4 - 0.72
15.7 - 0.73
16.0 - 0.94
16.3 - 0.92
16.6 - 0.72
16.9 - 0.54
17.2 - 0.37
17.5 - 0.30
17.8 - 0.21
18.1 - 0.20

#32

23.7 - 0.20
24.0 - 0.48
24.3 - 0.70
24.6 - 0.60
24.9 - 0.40
25.2 - 0.20
27.0 - 0.16

#25

@ 23.8 - 0.20
24.1 - 0.53
24.4 - 1.65
24.7 - 2.88
25.0 - 2.43
25.3 - 2.04
25.6 - 1.56
25.9 - 1.41
26.2 - 1.20
26.5 - 0.39
26.7 - 0.22

#28

22.9 - 0.20
23.2 - 0.42
23.5 - 1.00
23.8 - 2.25
24.1 - 1.08
24.4 - 0.36
24.5 - 0.20

#4A

8.4 - 0.20
8.7 - 0.38
9.0 - 0.37
9.3 - 0.21
9.4 - 0.20

#44

5.5 - 0.20
5.8 - 0.40
6.1 - 0.62
6.4 - 0.61
6.7 - 0.67
7.0 - 0.58
7.3 - 0.47
7.6 - 0.38
7.9 - 0.31
8.2 - 0.25
8.5 - 0.22
8.6 - 0.20

#49

10.0 - 0.10 (Min.)

#26

21.0 - 0.05 (Min.)

#40

@ 4.1 - 0.14
4.4 - 0.20
4.5 - 0.24
4.8 - 0.34
5.1 - 0.68
5.4 - 0.94
5.7 - 1.62
6.0 - 2.31
6.3 - 2.52
6.6 - 1.92
6.9 - 1.62
7.2 - 1.74
7.5 - 1.20
7.8 - 1.55
8.1 - 0.34
8.4 - 0.22
8.7 - 0.16
9.0 - 0.14

#43

3.5 - 0.20
3.8 - 0.30
4.1 - 0.38
4.4 - 0.48
4.7 - 0.50
5.0 - 0.52
5.3 - 0.75
5.6 - 0.90
5.9 - 1.38
6.2 - 1.56
6.5 - 1.20
6.8 - 0.61
7.1 - 0.33
7.4 - 0.25
7.5 - 0.20

#12A

@ 6.7 - 0.20
7.0 - 0.28
7.3 - 0.35
7.6 - 0.50
7.9 - 0.78
8.2 - 0.84
8.5 - 0.54
8.8 - 0.30
9.1 - 0.20

#45

7.6 - 0.20
7.9 - 0.25
8.2 - 0.30
8.5 - 0.46
8.8 - 0.90
9.1 - 1.98
9.4 - 1.26
9.7 - 0.46
10.0 - 0.24
10.1 - 0.20

#46

7.9 - 0.20
8.2 - 0.20
8.5 - 0.20
8.8 - 0.22
9.1 - 0.26
9.4 - 0.37
9.7 - 0.48
10.0 - 0.64
10.3 - 0.56
10.6 - 0.34
10.9 - 0.21
11.0 - 0.20

#21

17.7 - 0.20
18.0 - 0.16
18.3 - 0.10
18.6 - 0.12
18.9 - 0.11
19.2 - 0.10
19.5 - 0.08
19.8 - 0.08
20.1 - 0.08
20.4 - 0.07
20.7 - 0.06
21.0 - 0.06
23.0 - 0.06
23.5 - 0.08
24.0 - 0.10
@ 25.9 - 1.44
26.2 - 0.54
26.5 - 0.20

#48

@ 9.2 - 0.20
9.5 - 0.20
9.8 - 0.25
10.1 - 0.40
10.4 - 0.75
10.7 - 0.90
11.0 - 0.48
11.3 - 0.25
11.4 - 0.20

#42

6 to 12 - Min.

#50

Nil

#41

6 to 12 - Min.

#51

6 to 10 - Min.

#3A

8 to 10 - Min.

#35

@ 22 - Min. (weak)

#34

@ 25.1 (bottom) - 0.05

#31

Nil

#30

Nil

#29

Nil

#33

Nil

#27

@ 22 (bottom) - 0.05

#22

23 to 25 - Min.

#23

16 to 19 - Min.

#21

24.7 - 0.16
25.0 - 0.21
25.3 - 0.30
25.6 - 0.60

#20

Nil

#19

nil

#24

@ 19.9 - 0.20
20.2 - 0.20
20.5 - 0.24
20.8 - 0.26
21.1 - 0.25
21.4 - 0.28
21.7 - 0.30
22.0 - 0.36
22.3 - 0.48
22.6 - 0.50
22.9 - 1.00
23.2 - 1.32
23.5 - 1.29
23.8 - 1.86
24.1 - 2.08
24.4 - 3.24
24.7 - 4.50
25.0 - 1.65
25.3 - 0.60
25.6 - 0.30
25.9 - 0.25
26.2 - 0.21
26.5 - 0.20

#25A

10.2 - 0.16
10.5 - 0.25
10.8 - 0.32
11.1 - 0.30
11.4 - 0.25
11.7 - 0.25
12.0 - 0.28
12.3 - 0.37
12.6 - 0.27
12.9 - 0.18
13.2 - 0.17
13.5 - 0.18
13.8 - 0.15
14.1 - 0.18
14.4 - 0.22
14.7 - 0.25
15.0 - 0.22
15.3 - 0.25
15.6 - 0.24
15.9 - 0.20
16.2 - 0.19

#24A

@ 4.0 to 9.5 - 0.10
9.8 - 0.17
10.1 - 0.19
10.4 - 0.20
10.7 - 0.24
11.0 - 0.28
11.3 - 0.30
11.6 - 0.28
11.9 - 0.30
12.2 - 0.30
12.5 - 0.30
12.8 - 0.27
13.1 - 0.27
13.4 - 0.25
13.7 - 0.27
14.0 - 0.27
14.3 - 0.25
14.6 - 0.22
14.9 - 0.22
15.2 - 0.15
15.5 - 0.13

#21A

7.6 - 0.15
7.9 - 0.26
8.2 - 0.70
8.5 - 1.25
8.8 - 0.72
9.1 - 0.66
9.4 - 0.58
9.7 - 0.40
10.0 - 0.28
10.3 - 0.32
10.6 - 0.35
10.9 - 0.35
11.2 - 0.37
11.5 - 0.44
11.8 - 0.78
12.1 - 1.04
12.4 - 0.50
12.7 - 0.27
13.0 - 0.17

#13A

7.6 - 0.11
7.9 - 0.12

#15A

@ 8.6 - 0.15
8.9 - 0.20
9.2 - 0.18
9.5 - 0.18
9.8 - 0.17
10.1 - 0.16
10.4 - 0.14
10.7 - 0.10

#17A

16 to 16 - Min.
Plugged @ 17

#16A

13 to 15 - Min.

#14A

6 to 16 - 0.08 to 0.10

#22A

Weak Min.

#76

Nil

#83

Nil
Plugged @ 21

#82

25 to 29 - Min.

#78

17 to 20 - Min

#81

23 to 25 - Min.

#69

Plugged

#36A

Plugged
@ 21.0 - 0.20) (Morgan)
21.5 - 0.30)

#18A
Nil

#19A
Nil

#32A
Nil

#71

@ 17.7 - 0.20
18.0 - 0.20
18.3 - 0.20
18.6 - 0.17
18.9 - 0.15
19.2 - 0.15
19.5 - 0.18
19.8 - 0.23
20.1 - 0.52
20.4 - 1.12
20.7 - 1.68
21.0 - 2.24
21.3 - 2.45
21.6 - 2.55
21.9 - 1.86
22.2 - 0.81
22.5 - 0.46
22.8 - 0.32
23.1 - 0.20

#80
22.1 - 0.19
22.4 - 0.36
22.7 - 0.57
23.0 - 0.50
23.3 - 0.21
23.6 - 0.15
23.9 - 0.19
24.2 - 0.15

#70
19.2 - 0.17
19.5 - 0.26
19.8 - 0.55
20.1 - 1.16
20.4 - 1.68

#13A
8.2 - 0.14
8.5 - 0.16
8.8 - 0.17
9.1 - 0.16
9.4 - 0.13
9.7 - 0.11
10.0 - 0.11
10.3 - -0.11

#72

@ 16.4 - 0.17
16.7 - 0.17
17.0 - 0.18
17.3 - 0.18
17.6 - 0.19
17.9 - 0.23
18.2 - 0.36
18.5 - 0.52
18.8 - 1.08
19.1 - 1.68
19.4 - 0.80
19.7 - 0.56
20.0 - 0.83
20.3 - 1.50
20.6 - 1.36
20.9 - 0.78
21.2 - 0.54
21.5 - 0.40
21.8 - 0.50
22.1 - 1.12
22.4 - 0.55
22.7 - 0.29
23.o - 0.17

#73
23.5 - 0.16
Plugged

#30A
Nil

#34A
21.0 - 0.18
21.3 - 0.25
21.6 - 0.46
21.9 - 0.96

#37A
25 to 26 - Min.

#38A
19 to 21 - Weak Min.

#31A
Nil

#35A

@ 16.9 - 0.15
17.2 - 0.14
17.5 - 0.14
17.8 - 0.17
18.1 - 0.18
18.4 - 0.20
18.7 - 0.21
19.0 - 0.24
19.3 - -0.25
19.6 - 0.24
19.9 - 0.27
20.2 - 0.31
20.5 - 0.43
20.8 - 1.00
21.1 - 1.86
21.4 - 1.12
21.7 - 0.80
22.0 - 0.85
22.3 - 0.40
22.6 - 0.20

#68
12.0 - 0.20
12.3 - 0.45
12.6 - 1.04
12.9 - 2.70
13.2 - 5.40
13.5 - 3.20
13.8 - 1.40
14.1 - 1.30
14.4 - 1.00
14.7 - 0.56
15.0 - 0.74
15.3 - 0.90
15.6 - 1.00
15.9 - 0.78

#70
20.7 - 1.68
21.0 - 1.40
21.3 - 0.77
21.6 - 0.36
21.9 - 0.30
22.2 - 0.35
22.5 - 0.36
22.8 - 0.31
23.1 - 0.22
23.4 - 0.14

#74
Nil

#75
Nil

#2A
Nil

#61
Nil

#64
23 to 24.5
Min.

#62
9.9 - 0.20
10.2 - 0.28
10.5 - 0.38
10.8 - 0.46
11.1 - 0.50
11.4 - 0.60
11.7 - 0.86
12.0 - 1.20
12.3 - 0.94
12.6 - 1.08
12.9 - 1.43
13.2 - 1.94
13.5 - 1.18
13.8 - 0.56
14.1 - 0.34
14.4 - 0.20
14.7 - 0.14

#34A
22.2 - 0.65
22.5 - 0.23
22.6 - 0.18

#77
None

#8A
Plugged

#6A
Nil

#5A
Nil

#79
@ 12.4 - 0.20
12.7 - 0.22
13.0 - 0.26
13.3 - 0.30
13.6 - 0.48
13.9 - 0.69
14.2 - 1.32
14.5 - 2.70
14.8 - 6.80
15.1 - 9.00
15.4 - 8.50
15.7 - 8.50
16.0 - 8.50
16.3 - 8.50
16.6 - 2.80
16.9 - 1.83
17.2 - 1.51
17.5 - 1.45
17.8 - 1.32
18.1 - 1.35
18.4 - 1.36
18.7 - 1.30
19.0 - 1.24
19.3 - 1.16
19.6 - 1.20
19.9 - 1.14
20.2 - 1.10
20.5 - 0.96

#68
16.2 - 0.90
16.5 - 0.94
16.8 - 1.00
17.1 - 1.00
17.4 - 0.92
17.7 - 0.96
18.0 - 1.10
18.3 - 0.89
18.6 - 0.60
18.9 - 0.38
19.2 - 0.30
19.5 - 0.18

#9A
Nil

#1A
Nil

#27A
@ 27.0 - 0.19
27.3 - 0.20
27.6 - 0.15
27.9 - 0.13
28.2 - 0.10
28.5 - 0.10
28.8 - 0.10
29.1 - 0.22
29.4 - 0.28
29.7 - 0.18
30.0 - 0.20
30.3 - 0.19
30.6 - 0.17

#28A
19.0 - 0.10
20.0 - 0.14
21.0 - 0.20
21.3 - 0.28
21.6 - 0.37
21.9 - 0.52
22.2 - 0.70
22.5 - 1.20
22.8 - 1.84
23.1 - 3.00
23.4 - 3.40
23.7 - 3.90
24.0 - 3.20

#23A

9 to 10 - 0.12
10.3 - 0.15
10.6 - 0.16
10.9 - 0.16
11.2 - 0.26
11.5 - 0.43
11.8 - 0.49
12.1 - 0.36
12.4 - 0.24
12.7 - 0.15

#37

Nil

#38

Nil

#39

Nil

#26A

23 to 27 - Min.

#79

20.8 - 0.80
21.1 - 0.78
21.4 - 0.82
21.7 - 0.82
22.0 - 0.78
22.3 - 0.64
22.6 - 0.36
22.9 - 0.24
23.2 - 0.20
23.5 - 0.20
23.8 - 0.18
24.1 - 0.18
24.4 - 0.20
24.7 - 0.20

#28A

24.3 - 2.00
24.6 - 1.46
24.9 - 1.20
25.2 - 0.90
25.5 - 0.40
25.8 - 0.20
26.1 - 0.16

GEOLOGIC REPORT OF THE OKAN ATLAS CLAIMS, TENDERFOOT MESA, MESA COUNTY, COLORADO

16 March 1956

By: Robert L. Rock
Mining Engineer

The five Okan claims and fractions are located on Tenderfoot Mesa, T50 and 51N, R18 and 19W, NMPM, seventy miles south of Grand Junction, Colorado. The claims are in the Calamity-Gateway Mining District of Mesa County, Colorado.

The property is accessible by traveling 45 miles south of Grand Junction via the Unaweep Canyon road and thence 14 miles east of Gateway via the Calamity Hill road.

The claims are situated at the southern end of Tenderfoot Mesa, which is bounded on all but the northern side by steep canyons. Mesa-top topography is characterized by tilted ledges of resistant sandstone irregularly interrupting rolling hills of predominantly red and green mudstone. The elevation at the site of the claims is about 6,500 feet.

The productive formation on the claims is the Salt Wash Member of the Morrison Formation, which is in this locality appreximately 300 feet thick. Immediately below the Salt Wash Member is the Summerville Formation, which consists of nearly 80 feet of red sandy and silty shales. Overlying the Salt Wash Member is the Brushy Basin Shale member of the Morrison Formation. This member is about 300 feet thick and consists almost entirely of red and green variegated shales. Some included conglomeratic material is present in the upper part of the Brushy Basin member near the Dakota Sandstone contact and also in the lower gradational zone next to the Salt Wash Member. All the beds dip to the southwest about 6 degrees away from the Uncompahgre uplift.

The Salt Wash Member consists of fine to medium grained lenticular sands interbedded with varying amounts of clay and carbon. The sands were deposited in scours and channels in an aggrading environment. Fluvial features such as lineation, festooning, crossbedding and ripple marks are easily discernible on exposures.

The uranium and vanadium mineralization on the property is generally carnotite, although some black uraninite ores are also existent. The vanadium mineral vanoxite is present in widely varying amounts.

A chemical replacement of carbonaceous material by uranium has played an important role in localizing known ore bodies. The ore trends northwest in the same direction as sedimentation trends and is very high grade, especially where trees and carbonaceous material have been replaced.

At present, the property is leased from the Okan Company by L. E. Cox, who has five miners mining from two separate ore bodies, which were found on the property by approximately 4,000 ft. of wagon drilling.

The ore has a maximum known thickness of nine feet and an average thickness of about three feet. Approximately 300 tons of .40 U_3O_8 and 1.00% V_2O_5 have been shipped to date. It is estimated that another 300 tons of ore of a similar grade remains to be mined.

A favorable mineralized outcrop was examined on Claim X-3, which certainly deserves explorative attention. Also the present known ore-bodies are potentially extendable by more explorative drilling. The large area in the northern half of the claims warrants a pattern of holes to test for favorable localities there.

I recommend 15,000 feet of explorative drilling for these areas, as is tentatively layed out on the attached map.

Drill hole depths near the rim are estimated as averaging about 50 feet in depth, while the deeper pattern holes are estimated at between 200 and 300 feet. Since all the horizons are potentially ore bearing, it is desirable that a few holes be drilled through the total Salt Wash thickness to spot check the favorability of the various horizons.

Thirty-five hundred feet of drilling is recommended to offset favorable trends near the rim and about 9,500 feet to drill the pattern holes. The remaining 2,000 feet should be available for drilling additional holes in favorable localities.

Because of an abundance of perched water tables, air drilling might be prohibitive, especially in the deeper ground. A spring with abundant drill water is available 14 miles from the property. It is also possible that there is enough live water in the mine for drilling purposes.

Respectfully submitted,

Robert L. Rock

ROBERT L. ROCK
Mining Engineer

COPY

MINING LEASE

THIS LEASE, made at Grand Junction, Colorado, on this 17th day of January, 1956, by and between OKAN URANIUM CORPORATION, an Oklahoma Corporation, qualified to do business in the State of Colorado, referred to herein as "Okan", and T. R. GILLENWATERS and L. E. COX, who shall jointly be referred to herein as "Cox", WITNESSETH:

WHEREAS, Okan is the owner of the following described unpatented mining claims situated in the County of Mesa, State of Colorado, the location certificates of which are recorded in the books and on the pages set forth opposite the names of such claims in the records of Mesa County, Colorado, to wit:

Name of Claim	Recorded in Book	Page
X Claim No. 3 (Amended)	648	125
K Claim No. 6 (Amended)	648	129
K Claim No. 5 (Amended)	648	128
K Claim No. 4 (Amended)	648	127
Atlas Fraction	658	459

Except that part of said claims, or any of them, lying South and East of the line described as follows, to wit:

Beginning at a point which bears South 50° 40.5' East 2004 feet from the Southwest Corner of Section 31, Township 51 North, Range 18 West of the New Mexico Principal Meridian, thence East 842.5 feet, thence North to the South line of said Section 31.

Together with improvements and appurtenances situated thereon;

WHEREAS, Okan desires to lease the aforementioned claims to Cox, subject to the terms and conditions herein stated:

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the rental payments provided for herein and other valuable considerations, it is agreed as follows:

1. Whenever the party "Cox" is referred to in this agreement in the singular, such reference shall be deemed to mean and refer to L. E. Cox and T. R. Gillenwaters.

2. The term of this lease shall be for a period of five (5) years after date hereof and as long thereafter as ore may be produced and mined from the claims in commercial quantities.

3. Cox agrees to pay Okan, as royalty, an amount equal to the sums determined by the following table:

Percent of U_3O_8 Content	Royalty Payable Thereon
.15 to and including .24	20%
.25 to .29	25%
.30 to .44	30%
.45 to .49	32 1/2%
.50 to .59	35%
.60 to .74	40%
.75 and up	45%

Such royalty shall be payable on the gross value of ore mined and produced from the leased claims. In addition to such royalties, Okan shall be entitled to all production bonus payments paid on production from the leased claims by the Atomic Energy Commission. From and after date of this agreement Cox shall be entitled to receive all development and/or transportation allowances paid in respect to such claims and ore produced therefrom and no royalty shall be payable on amounts received as development allowances and/or transportation allowances. All development allowances received by Cox shall be used on and in development of the leased claims.

4. Cox agrees to enter upon the leased premises and to explore and develop the same in a good and miner-like fashion and in a manner necessary for economical mining, with due regard to development and preservation of the mine and premises as a workable mining unit and economical operation. On or before July 30, 1956, Cox agrees to perform and complete not less than 15,000 linear feet of exploratory rotary or wagon drilling on the leased claims. Such drilling shall be accomplished to depths and at locations to be determined by Cox.

5. Okan shall be furnished with duplicate copies of all maps, plats, drilling lots and reports and other data prepared in connection with

the leased premises by Cox. Further, Cox shall, within 30 days after date hereof, prepare and submit to Okan a preliminary exploration and development plan pertaining to the exploration and extraction of ore from the leased claims. Cox shall submit additional and revised plans for development and exploration of the leased claims at least once during each 30day period after date of the preliminary plan.

6. Cox agrees to perform, or cause to be performed, on the leased premises not less than seventy-five 8-hour man shifts during each calendar month after date hereof, commencing February 1, 1956.

7. During each 30-day period, commencing February 15, 1956, Cox agrees to exert every effort to mine and produce from the determined and known ore reserves on the leased claims, not less than 900 tons of ore during each 90-day period, so long as ore can be mined and/or produced from the leased claims in commercial quantities.

8. Cox agrees to indemnify Okan from any and all lawful claims for damages arising from any injuries or damage to persons or property resulting from Cox's operation of the leased claims during the term of this lease. Further, Cox will not suffer or permit any mechanic's liens or other liens or encumbrances to be filed against the leased claims and improvements during the term of this lease or any extensions or renewals thereof for the nonpayment of any debt or debts incurred by Cox in connection with operation of the leased claims and does further agree to post not less than three notices in conspicuous places on the leased claims stating that such property is held under lease by Cox and that Okan's interest therein shall not be subject to liens or encumbrances without the consent of Okan.

9. Cox shall have the right to remove any and all machinery and equipment placed or used upon the leased claims by Cox at any time during the term of this lease. Provided, that Cox shall remove such machinery and equipment within 90 days after termination or expiration of the term hereof.

10. Okan agrees to pay its proportionate share of production and other taxes levied and assessed against ore mined and produced from the leased claims. Such proportion is to be determined by the amount of such tax or taxes payable on the ore equivalent of royalties paid to Okan.

11. Okan agrees that it will not sell, or contract to sell, the leased claims to any person, persons or corporations without providing Cox the opportunity to purchase, or contract to purchase, the leased claims on the same terms and conditions, and for the same consideration, that the leased claims would be sold or contracted to be sold to any other person, persons or corporations. Cox shall have a period of thirty days after receipt of Okan's notice of intent to sell, or contract to sell, the leased claims within which to elect to purchase the leased claims. Such notice of intent to sell, or contract to sell, shall be addressed to Cox at P. O. Box 1451, Grand Junction, Colorado, by United States Registered Mail, return receipt requested, and shall specify the terms, conditions and consideration of any proposed sale or contract of sale. In the event Cox shall not exercise his right of first refusal to purchase the leased claims as provided in this paragraph, any sale or contract of sale of the leased claims made by Okan will be made subject to this lease.

12. Okan does hereby appoint Ardis S. Kincade and K. M. Hensel, or either of them, as its authorized representative for any future negotiations or dealings with Cox regarding operation of the leased claims or any of the matters contained in this lease. Cox shall not be obligated to recognize any other person as the authorized representative of Okan, except upon written instructions and authority from said Kincade and Hensel, or either of them. Provided, that Okan may designate other persons as its authorized representative by appropriate action of its board of directors and Cox shall recognize such subsequently authorized person upon receipt of a

certified copy of the resolution of the board of directors of Okan naming such subsequently authorized person.

13. If Cox fails to perform any of the covenants on his part herein contained, this lease may be terminated at the election of Okan by giving Cox thirty days' written notice of termination, addressed to Cox at P. O. Box 1451, Grand Junction, Colorado by United States Registered Mail, return receipt requested. The failure of Cox to perform any covenants then in default, within such 30-day period, shall terminate this lease and Cox shall have no further right, title or interest in and to the leased claims. Such notice shall specify, in detail, the particular covenants which Cox has failed to perform and which constitute the basis of termination by Okan. With the exception of any claims or demands accruing to Okan prior to the effective date of termination of this lease, as provided above, the procedure for termination provided in this paragraph shall be Okan's sole and exclusive remedy for breach of this lease and Okan does hereby waive and forego any right it may have to enforce the provisions hereby by an action at law for damages or proceeding in equity to enforce specific performance of the terms of this lease.

14. Should the United States of America, or its duly authorized buyers, suspend the purchase of uranium, thorium or any other fissionable material produced from the leased premises for a period of time, and by reason thereof no other market shall be available where ore mined and produced from the leased claims can be sold at a reasonable profit, this lease shall not expire during such period of suspended buying and shall not be subject to cancellation by Okan during such period, except for failure or refusal of Cox to perform the required annual labor on the leased claims. Cox's breach or failure to perform any of the covenants or conditions of this agreement shall not be grounds for cancellation, termination or forfeiture of this lease, if such breach or failure to perform is occasioned or compliance is prevented by severe winter weather, explosion, unusual mining

casualty, fire, flood, civil or military authority, insurrection, riots, strikes, Acts of God, or any other circumstance or condition beyond the control of Cox, whether or not the same is herein specified, while any such condition shall continue to exist, and the time covered by the pendency of any of the above contingencies shall not be counted against Cox as affecting the term of this lease. Provided that nothing in this paragraph shall relieve Cox of the obligation to perform annual assessment work on the leased claims.

15. Cox shall, on or before the first day of April, 1956, and on or before the first day of April each year thereafter, perform all of the required annual assessment work on the leased claims. Cox further agrees, to record affidavits of annual labor relating to the assessment work performed on the leased claims on or before May 15, 1956. If such assessment work is not performed, as provided in this paragraph, this lease shall be terminated and cancelled without notice to Cox.

16. Cox may assign the whole or any part of the leased claims, or may sublet the whole or any part of the leased claims at any time during the term of this lease, or any renewal or extension thereof. In the event of such assignment, Cox shall remain primarily liable to Okan for the performance of all terms and conditions of this lease. In the event of any such assignment or sublease, Cox shall give notice thereof to Okan within fifteen days after date hereof.

The provisions hereof shall be binding on the heirs, personal representatives, assigns and successors of the parties.

IN WITNESS WHEREOF, the parties have set their hands and seals the day and year first above written.

OKAN URANIUM CORPORATION

ATTEST:
S/ John F. Miller

By S/ Ardis S. Kincade
President

S/ T. R. Gillenwaters
T. R. Gillenwaters

S/ L. E. Cox
L. E. Cox

COPY

AMENDMENT TO MINING LEASE

THIS AMENDMENT to that certain lease of January 17th, 1956, between OKAN URANIUM CORPORATION and T. R. GILLENWATERS and L. E. COX,

WITNESSETH:

In consideration of the mutual covenants herein contained and other valuable considerations, it is agreed as follows:

1. If any action at law or suit, or other claim is commenced by any persons or corporation to question or dispute Okan's title or claim to the leased claims, Okan agrees to pay the expense of defending any such action or litigation and to indemnify Cox and save him harmless from any expense incurred in defense of such actions.

2. Cox agrees to secure, and keep in force, Workmens' Compensation Insurance on all employees employed on the leased claims by him. He further agrees to maintain, and keep in force, Employer's Liability Insurance. Further, Cox agrees to secure, and keep in force, Public Liability Insurance with the following minimum coverage:

Personal Injury

Each Person	-	$25,000.00
Each Accident	-	50,000.00

Property Damage

Aggregate Limit	-	5,000.00

3. Except as specifically supplemented and amended, herein, the provisions of the mining lease of January 17th, 1956, between the parties hereto shall remain unchanged.

IN WITNESS WHEREOF, the parties have set their hands and seals this _____ day of January, 1956.

OKAN URANIUM CORPORATION

By: S/ Ardis S. Kincade
President

ATTEST:
S/ John F. Miller
Secretary

S/ T. R. Gillenwaters
T. R. Gillenwaters

S/ L. E. Cox
L. E. Cox

Hmo

L. E. COX
P. O. Box 1451
Grand Junction, Colo.

DMEA
Date Rec'd.
MAR 30 1956
BUREAU OF MINES
Denver, Colorado

29 March 1956

Bureau of Mines
224 New Customhouse Bldg.
Denver 2, Colorado

Gentlemen:

Enclosed you will find three bids for the proposed drilling on Tenderfoot Mesa.

Very truly yours,

L. E. Cox

dj
encl: (3)

COPY

QUEEN MARY MINES
Mining - Drilling - Contracting
1930 North 15th St. - Phone 0633J2
Grand Junction, Colorado
March 22, 1956

Wilshire Capital Co.
P.O. Box 1451
Grand Junction, Colorado

Attention: Mr. Bob Rock

Dear Sir:

I submit the following bid as requested on 15,000 feet of percussion drilling on the Okan property in the Gateway Mining District, Mesa County, Colorado.

I was told that the drilling would be to 100 feet. I will furnish my own drilling roads and conduct the drilling program continuously and to the best of my ability with logs, etc., for seventy cents a foot.

We also have our own probing equipment.

Very truly yours,

S/ Richard E. Cowger
Richard E. Cowger

P.S. Holes over 100 feet deep will be eighty cents from 100-150 feet. From 150 ft. to 200 feet will be ninety cents. From 200 feet to 250 feet will be $1.00.

S/ R. E. Cowger

COPY

COPY

220 Whiteside Bldg.
Phone PO 3-5131
Lubbock, Texas

SCOTT BROS.
Drilling Company

Branch
641 Glenwood Ave.
Phone: 45
Grand Junction, Colorado

March 23, 1956

Wilshire Capital Company
P.O. Box 1451
Grand Junction, Colorado

Mr. Bob Rock:

We would like to quote the following prices for drilling 15,000 ft. on Tenderfoot Mesa:

Air Drilling

0-200 ft.	$1.25 per ft.
200-400 ft.	$1.50 per ft.

Water Drilling

— 1,3

0-200 ft.	$1.35 per ft.
200-400 ft.	$1.65 per ft.

Thank you.

Sincerely,

S/ L. W. Scott, Partner

SCOTT BROS. DRILLING CO.

LWS:lan

COPY

COPY

DRILLING BID

This Bid made and entered into in duplicate as of March 24, 1956, by and between the COLORADO WATER WELL COMPANY and existing under the laws of the State of Colorado, with its principal place of business at Grand Junction, Colorado (herein after called the Co.) and Wilshire Capital Company, Box 1451 of the city of Grand Junction, Colorado, hereinafter called the operator.

Witnessed that, the parties hereto do mutually agree as follows:

RECITALS

The Company is the owner of drilling equipment to carry on what is known as exploratory drilling for Vanadium and Uranium ore. Operator owns or has legal possession to those certain mining claims in Tenderfoot Mesa, Montrose County, State of Colorado generally described as follows:

In consideration of the payments to be made by the Operator to the Company, the Co. agrees to the following:

1. To drill by air blast method to a maximum depth of 300 feet, for each hole at a rate of $1.40 per foot;

2. To drill in excess of 300 feet for each hole at the rate of $--1.70-- per foot; the maximum drilling depth of each hole in excess of - feet dependent upon the local formation.

3. In the event water is incountered and water drilling is required, rate per foot will be $--1.70-- to a maximum of 300 to drill in excess of - feet for each hole at the rate of $ _____ per foot;

9. To move to the site of drilling for $ --500.00-- . This charge will be rebated to the Operator if drilling exceeds 3,000 feet.

10. Standby time: Probing, waiting for drill sites, etc., --$17.50-- per hour, after 1 hour.

To pay the Company as determined by its drilling records in the following manner: At 2-week intervals.

References:

_____

_____

COLORADO WATER WELL CO.

By S/ H. L. Morgan
Operator

By _____

By _____

COPY

August 6, 1956

Memorandum

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

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

Subject: Review of field examination report, DMEA 4235 (uranium), Lee Cox and T. R. Gillenwaters, Okan Mine, Tenderfoot Mesa, Mesa County, Colorado.

The examining team reports that the subject property has produced over 1100 tons of ore of relatively high grade. The ore was mined from relatively shallow depths. The possibility that other roll-type ore bodies are present on the property is considered by the examiners as good.

As a result the examiners recommend approval of a two stage drilling project consisting of a total of 11,890 feet of rotary, non-core drilling. Total estimated cost of the project is $20,024.00.

I agree with the examiners' and Field Team's recommendations.

WPWilliams:iml
G-8/6/56

W. P. Williams

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

4235

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

July 25, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
JUL 30 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4235 (Uranium) Lee Cox and T. M. Gillenwaters, (Chan Mine) Mesa County, Colorado

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

The field examiners recommend a two-stage exploration program consisting of 142 rotary drilled non-core holes totaling 11,890 feet at a total estimated cost of $20,024.00, Government participation $15,018.00. We concur in this recommendation.

Enclosed are nine extra copies of Figure 3 for possible use in the contract. We believe that Figure 2 might also be of value in a contract and have ordered nine extra copies which we will forward you when received by this office.

Owner's Consent to Lien have been forwarded the Applicant to be signed by the authorized officials of the Chan Uranium Corporation.

DMEA Field Team, Region III

Enclosures

By W. M. Traver
Executive Officer

RECEIVED BY
DMEA OPERATING COMMITTEE

(date)

TRANSMITTED

JUL 25 1956

MINERAL DEPOSITS
IN REPLY REFER TO:
DMEA
RECEIVED
JUL 12 1956
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 850
Grand Junction, Colorado

RECEIVED
JUL 30 1956
DMEA
Date Rec'd
JUL 23 1956

July 10, 1956

Memorandum

BUREAU OF MINES
Denver, Colorado

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

From: J. William Hasler

Through: E. N. Harshman
John Shaw

Subject: Letter of transmittal of report of examination on DMEA docket 4235, Lee Cox and T. R. Gillenwaters, Okan Mine (Uranium), Gateway mining district, Mesa County, Colorado.

Transmitted herewith is a joint engineering and geologic report of examination on DMEA docket 4235, Lee Cox and T. R. Gillenwaters, Okan mine property on Tenderfoot Mesa, Mesa County, Colorado.

The applicant made application for assistance to explore for uranium on the X-3, K-4, K-5, and K-6 claims in the Okan mine area. The application was referred to the field and an examination was made June 13, 1956, by H. F. Robertson, U. S. Bureau of Mines and H. F. Albee, U. S. Geological Survey.

The uranium ore deposits on Tenderfoot Mesa occur in the upper part of the Salt Wash sandstone member of the Morrison formation, part of which has been eroded. The one is found in typical northwest trending rolls and pods that are rather sporadically distributed and discontinuous, however, the Okan mine and other mines in the immediate area have produced a total of 1,146 tons of ore that averaged 0.46 percent U_3O_8 and 0.79 percent V_2O_5.

It is the opinion of the examining team that the revised exploration program herein recommended may discover other ore bodies in the 800 ton class similar to that mined in the Okan mine.

I concur with the conclusions and recommendations of the examining team that the program thus far recommended be approved. The Atomic Energy Commission was consulted relative to the appraisal of the property.

Enclosed is the material for inclusion in a joint engineering and geological report as well as 10 copies of figure 2. Twenty-two copies of figure 3 for inclusion in a contract are also enclosed as well as the applicant's brochure.

J. William Hasler
J. William Hasler,
Geologist

Enclosures
JWH/dm

RECEIVED
JUL 30 1956

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

TRANSMITTED
JUL 25 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

DMEA 4235

OKAN MINE

Okan Uranium Corporation

Mesa County, Colorado

Uranium

Joint Engineering and Geologic Report

By

H. F. Albee, Geologist
Geological Survey

H. F. Robertson, Mining Engineer
Bureau of Mines

July 20, 1956

DMEA 4235

OKAN MINE
OKAN URANIUM CORPORATION
MESA COUNTY, COLORADO

CONTENTS

Joint engineering and geologic report — Page

Introduction and summary....1
Acknowledgments....2
Location, topography, and physical features....3
History and production....4
Ownership and extent....4
Present status....5
Exploration and development....5
Mining equipment and other facilities....6
Geology....6
Ore deposits....7
Applicants proposed exploration and costs....9
Revised and recommended exploration program and costs..10
Breakdown of costs....17
Summary of costs for contract use....17
Conclusions and recommendations....19

ILLUSTRATIONS

Figure — Follows page

1. Location map, Okan Claim Area, L. E. Cox and T. R. Gillenwaters, Tenderfoot Mesa, Mesa County, Colorado, DMEA 4235....3

2. Geologic map showing the K et al. Group of Claims, L. E. Cox and T. R. Gillenwaters, Mesa County, Colorado....7

3. Geologic and Claim map showing location of proposed drill holes, Lee E. Cox and T. R. Gillenwaters, Okan Properties, Tenderfoot Mesa, Mesa County, Colorado....19

DMEA 4235

RECEIVED
JUL 30 1958

LEE COX AND T. R. GILLENWATERS
OKAN PROPERTIES
MESA COUNTY, COLORADO

INTRODUCTION AND SUMMARY

Lee Cox and T. R. Gillenwaters applied to the Defense Minerals Exploration Administration for aid in exploration of property leased to them by the Okan Uranium Corporation. The property is on the southern end of Tenderfoot Mesa in sec. 6, T. 50 N., R. 18 W., New Mexico principal meridian, Mesa County, Colorado.

The property was examined on June 13, 1956, by a DMEA examining team consisting of H. F. Albee, Geological Survey and H. F. Robertson, U. S. Bureau of Mines. The Okan mine which is on the property has ore deposits typical of the area and was inspected during the course of the field examination.

Salt Wash sandstone member of the Jurassic Morrison formation comprises the only rock exposed on the property. The upper part of the Salt Wash has been eroded and the thickness of the remaining Salt Wash sandstone ranges from 270 to 350 feet; the mineralized section lies about 220 feet above the base.

Ore bodies on Tenderfoot Mesa occur as rolls and lenses. Both types are characteristically small and discontinuous. The rolls are commonly 3 to 4 feet in diameter and of variable lengths and are usually high grade, thus comprising an important source of ore. The lense shaped ore bodies are from a few inches to 3 feet thick and

rarely exceed 100 feet in length. Both types of ore bodies have been mined from the property with the greater production being from the roll type deposit.

Production from the property has been mostly from one ore body containing about 800 tons. Other production was from a log that extended about 60 feet beyond the southeast end of the Okan Mine. An unnamed adit about 200 feet southeast of the mine has produced a small amount of ore from several thin lenses. The total production has been 1,146 tons.

The possibility of finding other bodies of uranium ore similar to that of the Okan Mine is good.

The applicant's proposal consists of non-core drilling 15,000 feet at $1.50 per foot. The overall cost of the project was estimated as $30,045.00. A conference with the applicant's representative resulted in a revised program which is agreeable to both the examining team and the applicant.

A two stage exploration program consisting of 142 rotary drilled non-core holes totaling 11,890 feet is recommended at an overall cost of $20,024.00.

Government participation at 75 percent would be $15,018.00.

ACKNOWLEDGEMENTS

The examining team was accompanied on the property by J. Morgan Harris, representative of the applicant.

The Atomic Energy Commission was consulted for information concerning the results of exploration drilling performed during 1951 and 1952 and for production and reserve data of operating mines in the area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property leased by Okan Uranium Corporation to Lee Cox and T. R. Gillenwaters is on Tenderfoot Mesa, mostly in sec. 6, T. 50 N., R. 18 W., New Mexico principal meridian, Gateway mining district, Mesa County, Colorado (fig. 1). The property may be reached by traveling 10 miles southeast from Grand Junction, Colorado, on U. S. Highway 50 to Whitewater, Colorado; thence 44 miles southwest on Colorado Highway 141 to the Calamity Hill road; thence 6 miles south to the top of Calamity Hill; and thence 8 miles over an improved access road to the Okan Mine. Traveling time from Grand Junction is about three hours by automobile.

The claims are at the southwestern end of Tenderfoot Mesa, which is bounded on all but the northern side by steep cliffs and deep canyons. Mesa-top topography is characterized by tilted ledges of sandstone which irregularly interrupt rolling hills of predominantly red and green mudstone. The mean altitude of the claims is about 6500 feet above sea-level.

The climate is semiarid with most of the precipitation ocurring during the winter and early spring months. The area is subject to

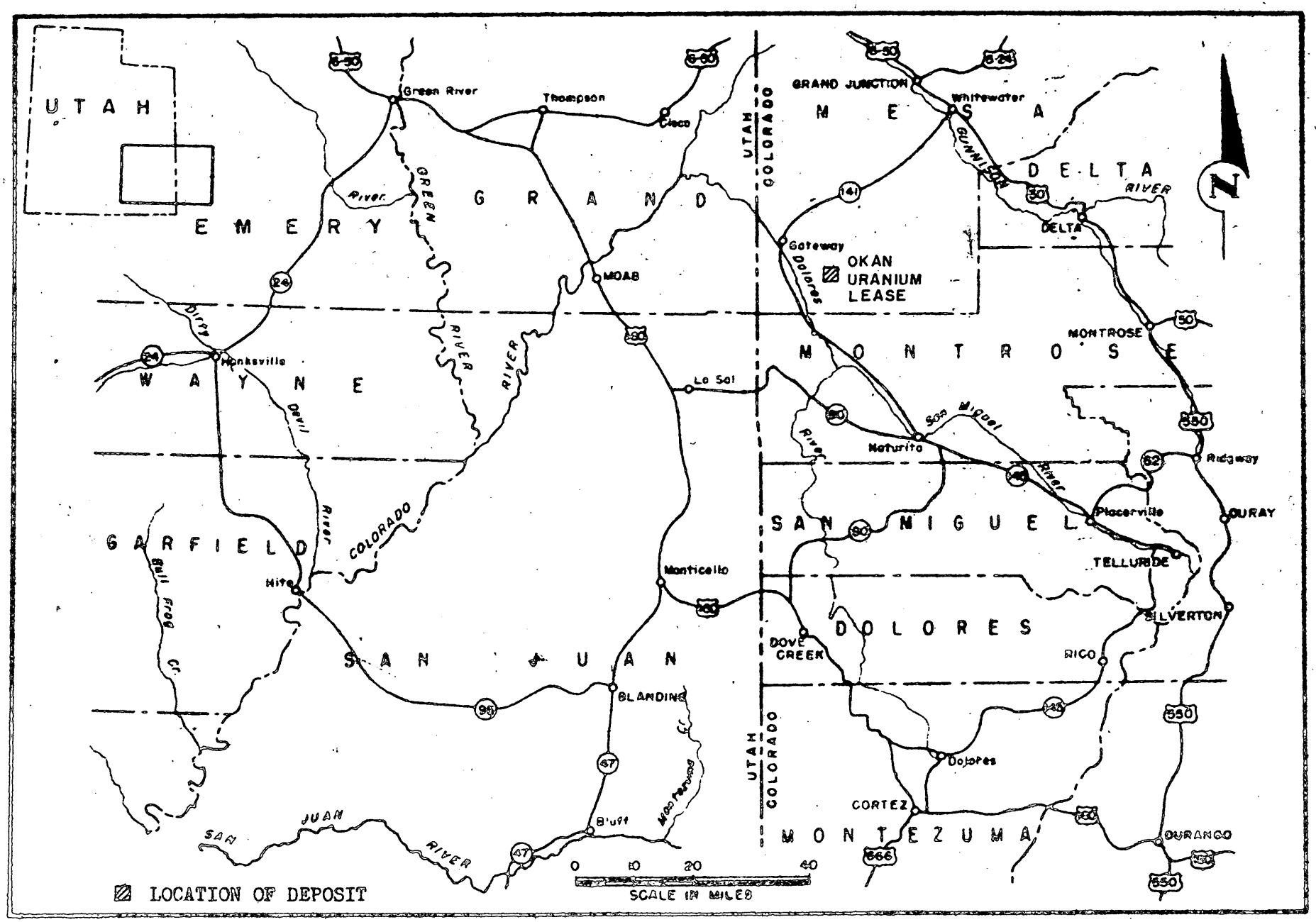


FIGURE 1 - LOCATION MAP, OKAN CLAIM AREA, L. E. COX AND T. R. GILLENWATERS, TENDERFOOT MESA, MESA COUNTY, COLO.
DMEA 4235

infrequent flash floods from cloudbursts. Vegetation consists of pinon, cedar, and sagebrush.

Power requirements are furnished by gasoline- or diesel-powered generators. Housing for personnel is usually constructed from rough lumber obtained from sawmills in the vicinity. Access to the area is too difficult for use of house trailers longer than 25 feet.

Supplies, equipment, and mine labor are available at Grand Junction, Colorado. Domestic water is available from a spring, 14 miles distant, and drilling water may be available from the mine.

Uranium ore produced in the area is usually hauled to a custom mill in Grand Junction, Colorado.

HISTORY AND PRODUCTION

Shipments of ore from the area were not recorded until June, 1948, but production from January 1939 to January 1952 is estimated at about 10,000 tons.

According to AEC records, the Okan Mine has produced about 800 tons of ore averaging 0.46 percent U_3O_8 and 0.79 percent V_2O_5. No ore has been mined since April 1956, but the mine has been maintained in operating condition pending further exploration.

OWNERSHIP AND EXTENT

The subject property consists of three standard lode mining claims and two fractions comprising a total of 74 acres. An area

that is in conflict with the Lone Mesa No. 1 claim is not included.

The property is owned by the Okan Uranium Corporation and location certificates are recorded at the Mesa County Courthouse in Grand Junction, Colorado as follows:

Name of Claim	Recorded					
	Original location			Amended location		
	Date	Book	Page	Date	Book	Page
X No. 3 (Amended)	5/2/55	642	233	6/4/55	648	125
K No. 6 (Amended)	5/2/55	642	229	6/4/55	648	129
K No. 5 (Amended)	5/2/55	642	228	6/4/55	648	128
K No. 4 (Amended	5/2/55	642	227	6/4/55	648	127
Atlas Fraction	8/25/55	658	459	—	—	—

A mining lease dated January 17, 1956, gives L. E. Cox and T. R. Gillenwaters the right to mine and remove ore from the leased claims.

The records at the Mesa County Courthouse, Grand Junction, Colo., were checked by the inspecting engineer and the recording data verified.

PRESENT STATUS

Exploration and Development

Company exploration on the subject claims has been limited to shallow wagon-drill holes behind two ore exposures along a rim in the Salt Wash on the K5 claim. No records of chemical assays or geologic logs from the holes were submitted by the applicant. Logs of radiometric probing of the holes were submitted as evidence of uranium

mineralization. Some impressive radiometric values are shown for several of the ore holes.

The Okan mine consists of an incline sunk to the larger ore body and an adit driven to the smaller ore body. After the ore was mined no further development work was performed. By April 30, 1956, total ore production from the subject property amounted to 1,146 tons.

Mining Equipment and Other Facilities

Mining equipment consists of a 125 c.f.m. Gardner-Denver compressor, three Gardner-Denver jack-leg drills, and most of the required supplies and accessories. Wooden platform bins for stockpiling ore have been constructed and a Ford front end loader is available for loading ore into trucks. Equipment for exploration drilling would be furnished by a contractor.

Three or four cabins are on the property and could be used for housing project personnel. Electricity is supplied by gasoline or diesel light plants. Domestic water is available at a spring about 14 miles distant from the Okan mine.

GEOLOGY

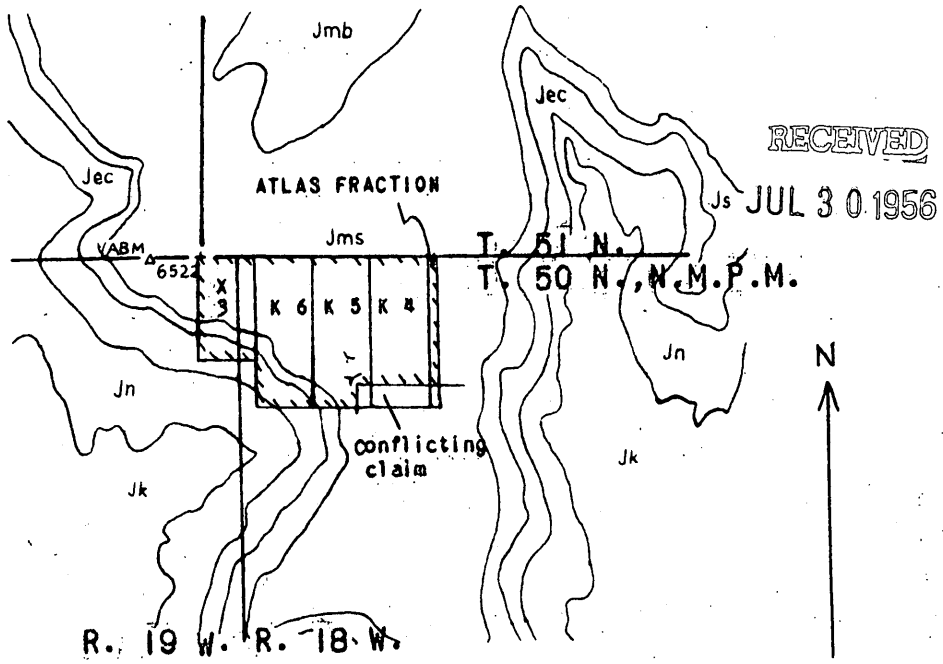
Tenderfoot Mesa is in the Gateway mining district and lies on the southwest flank of the Uncompahgre uplift. The regional dip is southwest at a low angle toward the axis of the Dolores syncline. In the northern part of Tenderfoot Mesa the rocks dip between 3° and 4°, and in the southern part of the mesa the dip is between 1° and 2°. There are no known faults in the mesa.

Deep canyons bound the southern part of Tenderfoot Mesa and the rocks exposed in the vicinity of the property range from those of the Kayenta formation upward through the Morrison formation both of Jurassic age (fig. 2).

The Morrison formation in this area comprises two members, the Salt Wash sandstone or lower member and the Brushy Basin Shale or upper member. The Salt Wash sandstone crops out above the Summerville formation as a series of resistant ledges and steep, rubble covered slopes. Sandstone is predominant but interbedded with the sandstone is red and locally green mudstone. Any relatively continuous sandstone stratum usually consists of interfingering lenses with superposed lenses, in many places, filling channels that have been carved in the underlying beds. Lenses are frequently separated by mudstone and contain mudstone seams. The sandstone is mostly fine- to medium-grained and consists largely of subangular to subrounded grains of quartz. The Salt Wash sandstone comprises the only rocks exposed on the property; part of the upper Salt Wash has been eroded. The thickness of the Salt Wash on the property ranges from about 270 feet near the rim to 350 feet in the northeast part of the claims.

ORE DEPOSITS

Five mineralized zones have been recognized on Tenderfoot Mesa; most of the uranium ore has been produced from the upper four. The



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EXPLANATION

Jmb	BRUSHY BASIN MEMBER OF JURASSIC MORRISON FORMATION
Jms	SALT WASH SANDSTONE MEMBER OF JURASSIC MORRISON FORMATION
Js	JURASSIC SUMMERVILLE FORMATION
Jec	JURASSIC ENTRADA SANDSTONE AND CARMEL FORMATION UNDIVIDED
Jn	JURASSIC AND JURASSIC(?) NAVAJO SANDSTONE
Jk	JURASSIC(?) KAYENTA FORMATION
	BOUNDARY OF AREA INCLUDED IN APPLICATION

2000 0 8000 FEET

Note: BASE MODIFIED FROM U.S.G.S. MAP CQ 55, GEOLOGY OF THE GATEWAY QUADRANGLE. CLAIM BOUNDARIES FROM APPLICANTS MAP.

FIGURE 2. GEOLOGIC MAP SHOWING THE K ET AL. GROUP OF CLAIMS, L.E. COX AND T.R. GILLENWATERS, MESA COUNTY, COLORADO

ore-bearing sandstone, which is about 50 feet thick on the property and correlates with the 4th mineralized zone above the base of the Salt Wash, is exposed at the surface along the rim and for a short distance back of the rim. This ore-bearing zone is from 220 to 230 feet above the base of the Salt Wash. The topography rises to the northeast to about 80 feet above the top of the ore-bearing sandstone.

Production from the property has been mostly from one ore body containing about 800 tons. Other production was from a leg that extended about 40 feet beyond the northeast end of the ore body. A small amount of ore has been produced from several thin lenses in an adit about 200 feet southeast of the ore body. The total production has been 1,146 tons.

Ore bodies on Tenderfoot Mesa occur as rolls and as lenses. Both types are characteristically small and discontinuous. The rolls are commonly 3 to 4 feet in diameter and are of different lengths. Some have proved extensive but they are usually high grade and thus comprise an important source of ore. The lense shaped ore bodies are from a few inches to 3 feet thick and rarely exceed 100 feet in diameter.

Both types of ore bodies have been mined on the property with the greater part of the production being from the roll type. The relatively shallow ore roll was mined from the outcrop without the need of development prospecting.

Some ore grade material remains along the ribs of the drift from which the roll was mined and thin exposures of ore-grade material remain in the adit from which the lenses were mined. The removal of this material would not be economical. No further reserves are known on the property.

The main uranium-vanadium mineral is carnotite. Vanadium minerals are present but were not identified. The uranium-vanadium ratio as indicated by Atomic Energy Commission payment records is about 1:2.

Wide spaced drilling on the property was completed by the Atomic Energy Commission in 1951 and 1952. Wagon drills were used and because water was encountered in several holes they were not completed. Drilling depths were considerably less than those estimated by the applicant. Of the twelve holes drilled, only two, 501 on the K6 claim and 503 on the K4 claim are shown on figure 3. The drill logs of these two holes showed them to be completed holes and they can be used as part of the recommended pattern of holes. The logs of the remaining holes either were not available or indicated that the holes were abandoned because of water.

APPLICANTS PROPOSED EXPLORATION AND COSTS

The applicant proposes an exploration program consisting of a total of 15,000 feet of wagon and rotary-drilling in an undetermined number of holes. Thirty-five hundred feet of drilling is proposed for drilling favorable trends near the rim and 9,500 feet would be

used to drill the deeper holes in the northeast section of the property. The remaining 2,000 feet would be available for drilling additional holes in favorable locations discovered by the previous drilling.

The estimated cost of the applicant's proposed program is shown as follows:

Road building tractor work - 20 days at $100.00 per day	$2,000.00
Drilling, 15,000 feet at $1.50 per foot	22,500.00
Supervision (geologist)	2,000.00
Surveyor	500.00
Instruments (counter, reel, probe, recorder)	1,295.00
Transportation (pickup)	1,200.00
Gasoline	50.00
Contingencies (maps, blueprints, food, etc.)	500.00
Total	$30,045.00

REVISED AND RECOMMENDED EXPLORATION PROGRAM AND COSTS

The examining team did not consider the applicant's program adequate for exploration of the subject property and a revised drilling plan agreeable to the applicant is hereby recommended. The revised program should more thoroughly test the potential ore-bearing sandstones underlying the claim area.

Under the present conditions neither the applicant nor the examining team consider core-drilling necessary or economically

advisable on this property. Sufficient information is available from rim exposures and from previous drilling to ascertain the general character of the ore deposits. Radiometric logging and chemical assay of drill cuttings will establish grade and thickness of any ore penetrated; samples should be taken at 2-feet intervals.

All holes should bottom in the mudstone directly underlying the potential ore-bearing sandstone indicated by previous exploration and development. Mudstone splits may interfinger with the sandstones at higher elevations in some of the holes. For this reason, any questionable hole should be drilled at least to the estimated depth as computed from the surface contour lines and the indicated elevation of the ore-bearing sandstone.

The recommended exploration program would be in two stages and is illustrated on figure 2. The holes in both stages would be located in a series of northeast-southwest fences perpendicular to the apparent trend of known ore exposures. The fences would be spaced at 75-foot intervals. The holes comprising each fence would be on 150-foot centers and located such that a diamond shaped pattern is formed with adjacent holes.

The estimated cost of the project is based on the bid by Scott Bros. Drilling Company. An average price of $1.30 per foot for dry and wet, rotary, non-core drilling is used due to the fact that water drilling will be necessary in an estimated fifty percent of the

holes. Cheaper wagon-drilling is not recommended due to the frequent occurrence of perched water tables in the area. Previous results have shown that wagon-drilling cannot be used after water is encountered in a hole.

Stage I of the proposed program will consist of 66 holes which will average 65 feet in depth and will explore the southwestern portion of the claim area as shown on figure 3. The estimated total footage for Stage I is 4,290 feet. The overall cost of Stage I, including bulldozer work and sample analyses is $7,364.00.

Stage II would be undertaken only if results in Stage I indicated that the size and frequency of ore occurrences were good enough to justify additional exploration, and would require written authorization by the Field Team, Region III. If authorized, the entire drill program in Stage II would be completed. This will consist of drilling 76 holes which will average 100 feet in depth and will explore the northeastern portion of the claim area. The total footage for Stage II is 7,600 feet and the overall cost is estimated at $12,660.00.

The costs for Stage I and Stage II may differ slightly from the above figures depending on the type of contract used.

Provision should be made to transfer funds and footage from Stage II to Stage I if necessary for completion of Stage I. The transfer must be approved and authorized by the DMEA Field Team.

Revised costs of the project are estimated as follows:

Stage I

Estimated time for completion - 1/2 month

Basis - 1 drill-rig - 1 shift per day

25 days per month - 300 feet per day

1. Independent Contracts

Bulldozing for roads and drillsites		
80 hours at $10.00 per hour	$800.00	
Rotary drilling 66 holes 4,290 feet (at $1.30 per foot)	5,577.00	
Total Independent Contracts		$6,377.00

2. Labor, supervision, and technical services

1 geologist-supervisor, full-time (1/2 month at $600.00 per month)	300.00	
1 surveying crew, 3 days at $100 per day	300.00	
Total labor, supervision, and technical services		$600.00

3. Operating materials and supplies

Gasoline, oil, and repairs on pickup for supervisor-geologist (1/2 month at $50.00 per month)	25.00	
Sample bags, drill log forms, surveying and office supplies (1/2 month at $50.00 per month)	25.00	
Total operating supplies		$50.00

4. Operating Equipment

Rental	None	
Purchase	None	
Depreciation		
1 pickup valued at	$1,800.00	
1 counter & probe valued at	800.00	
	$26,000.00	
Depreciation on 60 month basis		
$\frac{2600}{60}$ = $43.33 per month		
Depreciation for 1/2 month	$21.67	
Total operating equipment		$21.67

5. and 6. No initial rehabilitation, repairs, new buildings or equipment.

7. Miscellaneous

Accounting, 1/2 month at $50 per month	$25.00
Sampling and analyses, 100 samples analysed for U_3O_8 and V_2O_5 at $5.00 each	500.00
Compensation insurance, payroll taxes, etc. on geologist-supervisor's salary at 6 percent of $300.00	18.00
Total Miscellaneous	$543.00
Total cost of Stage I	$7,591.67

Stage II

Estimated time for completion - 1 month

Basis - 1 drill rig - 1 shift per day

25 days per month - 300 feet per day

1. Independent Contracts

Bulldozing for roads and drillsites		
80 hours at $10.00 per hour	$800.00	
Rotary drilling 76 holes, 7,600 feet		
at $1.30 per foot	9,880.00	
Total independent contracts		$10,680.00

2. Labor, Supervision, and Technical Services

1 geologist-supervisor, full-time		
one month at $600.00 per month	$600.00	
1 surveying crew, 3 days at $100 per day	300.00	
Total labor, supervision, and technical services		$900.00

3. Operating Materials and Supplies

Gasoline, oil, and repairs on		
pickup for supervisor-geologist		
1 month at $50.00 per month	$50.00	
Sample bags, drill-log forms,		
surveying and office supplies		
1 month at $50.00 per month	50.00	
Total operating materials and supplies		$100.00

4. Operating Equipment

Rental	None
Purchase	None

Depreciation

1 pickup valued at $1,800.00

1 counter and probe valued at $800.00

$2,600.00

Depreciation on 60 month basis

$\frac{2600}{60}$ = $43.33 per month

Depreciation for 1 month $43.33

Total Operating Equipment $43.33

5. and 6. None

7. Miscellaneous

Accounting, 1 month at $50 per month	$50.00	
Sampling and analyses, 100 samples analyzed for U_3O_8 and V_2O_5 at $5.00 each	500.00	
Compensation insurance, payroll taxes, etc. on geologist-supervisor's salary at 6 percent of $600.00	36.00	
Total Miscellaneous		$586.00
Total Cost of Stage II		$12,309.33

Breakdown of Costs

Item	Stage I	Stage II
Independent Contracts		
Bulldozing access roads and	$800.00	$800.00
drill sites. Drilling, 11,890	(4,290 feet)	(7,600 feet)
feet of plug-bit at $1.30 per feet	$5,577.00	$9,880.00
Labor and Supervision	$600.00	$900.00
Operating Material and Supplies	50.00	100.00
Operating Equipment	21.67	43.33
Misc. (less assaying)	43.00	86.00
Total (less assaying)	$7,091.67	$11,809.33
Cost per feet	$1.65	$1.55
Average cost per feet (for contract use)	$1.60	
Chemical assays at $5.00 each	500.00	500.00
Cost (incidental allowance)	714.67	1,129.33
(less independent contracts and chemical analyses)		
Cost per feet (incidental allowance)	0.17	0.15
Average cost per feet (incidental allowance)	$0.16	
(for contract use)		

Summary of Costs for Contract Use

It is suggested that the unit cost type of contract be used for this project. The computed unit cost to cover all categories, with the exception of chemical analyses, is $1.60 per feet of drilling

performed. The overall cost of the project would be $19,024.00 plus $1,000 for 200 chemical assays, or $20,024.00. Government participation would be 75 percent or $15,018.00

A tabulation of this type is shown below:

Item	Unit Units	Unit Cost	Stage I Units	Stage I Cost	Stage II Units	Stage II Cost	Total Units	Total Cost
Chemical analyses	each	$5.00	100	$500.00	100	$500.00	200	$1,000.00
All other costs	feet	$1.60	4,290	$6,864.00	7,600	$12,160.00	11,890	$19,024.00
Contract total				$7,364.00		$12,660.00		$20,024.00

As an alternate, the independent contract costs can be listed at actual bid price and the remaining estimated costs can be computed on a unit cost basis as shown in Table III. The total project cost would then be $19,901.00 and Government participation at 75 percent would amount to $14,925.75. These costs are summarized as follows:

Item	Unit Units	Unit Cost	Stage I Units	Stage I Cost	Stage II Units	Stage II Cost	Total Units	Total Cost
Bulldozer work	hour	$10.00	80	$800.00	80	$800.00	160	$1,600.00
Rotary drilling	foot	1.30	4,290	5,577.00	7600	9880.00	11890	15,457.00
Chemical analyses	each	5.00	100	500.00	100	500.00	200	1,000.00
Incidental allowance	foot	0.16	4,290	714.67	7600	1129.33	11890	1,844.00
Contract total				$7,591.67		$12,309.33		$19,901.00

CONCLUSIONS AND RECOMMENDATIONS

The property has produced over 1100 tons of ore, about 800 of which was from a roll type ore body. The ore was mined from relatively shallow depths. The ground rises to the northeast to a maximum of about 80 feet above the ore-bearing sandstone but the average drilling depths over a large part of the area would be less than 100 feet. The possibility of other rolls occurring on the property appears good.

Exploration by drilling in two stages consisting of 4,290 feet of rotary, non-core drilling in the first stage and 7,600 feet of rotary, non-core drilling in the second stage at an estimated overall cost of $20,024.00 is recommended for approval. Government participation at 75 percent would be $15,018.00

An allowance under depreciation is made for use of a Babbel counter and deep-hole probe. It is assumed that this service will be done by the geologist-supervisor as part of his duties. This would be in addition to any gamma ray logging by a DMEA logging unit.

The usual provisions governing minimum spacing of holes, probing, collection and analyses of cutting samples should be incorporated in the recommended contract.

4290
7600
11,890

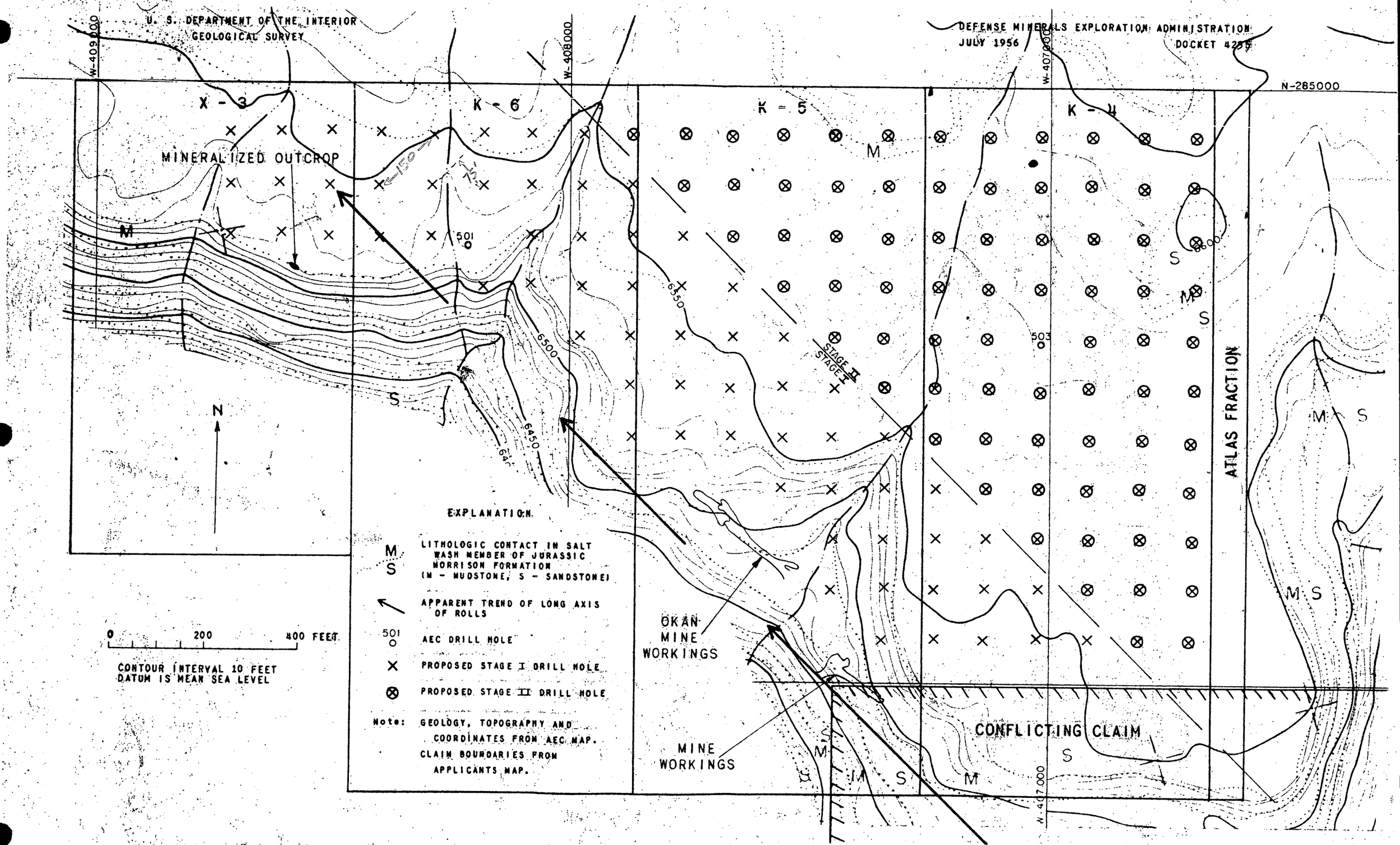

FIGURE 3.--GEOLOGIC AND CLAIM MAP SHOWING LOCATION OF PROPOSED DRILL HOLES, LEE E. COX AND T. R. GILLENWATERS, OKAN PROPERTIES, TENDERFOOT MESA, MESA COUNTY, COLORADO.

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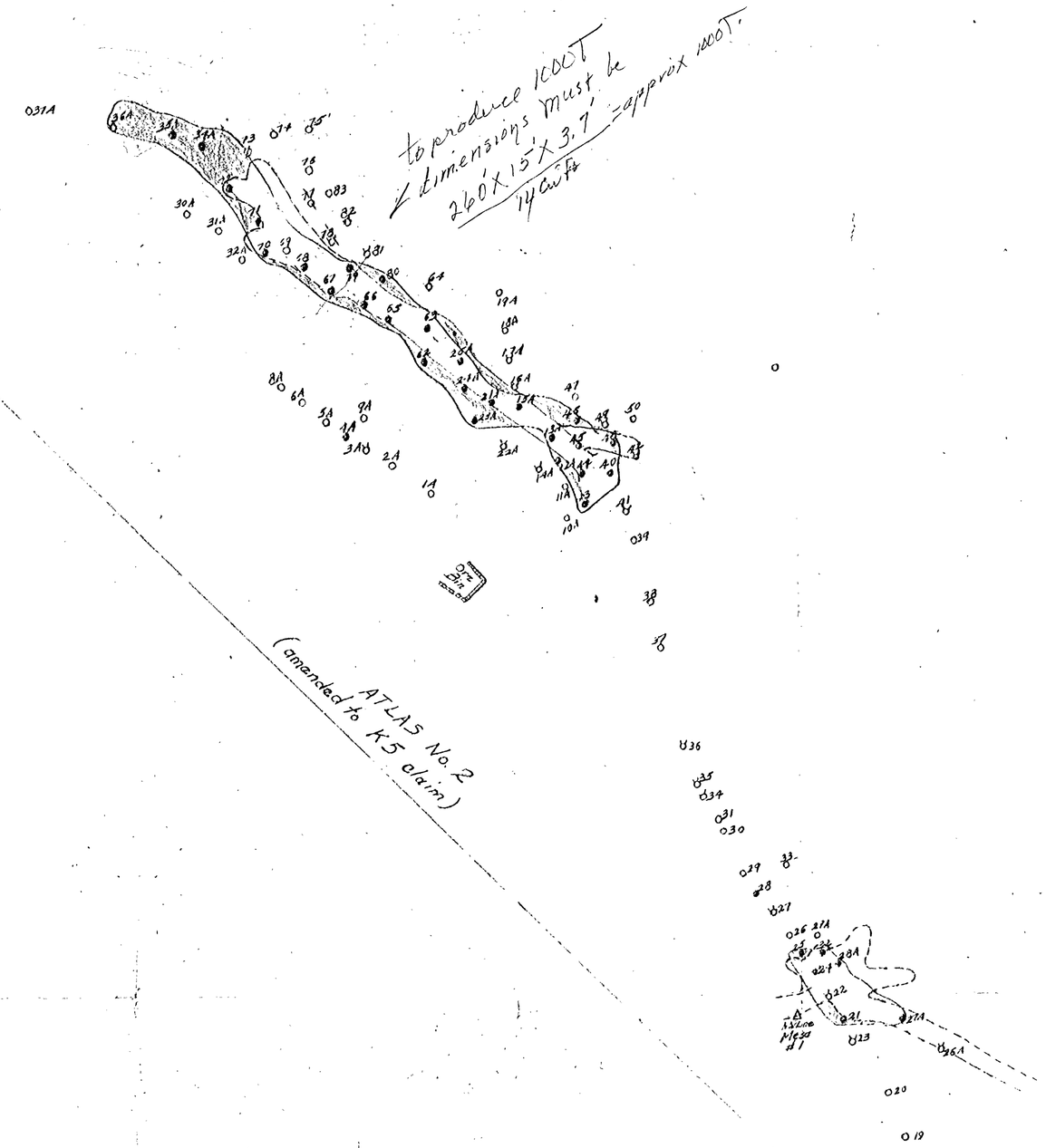
170
976
1,146



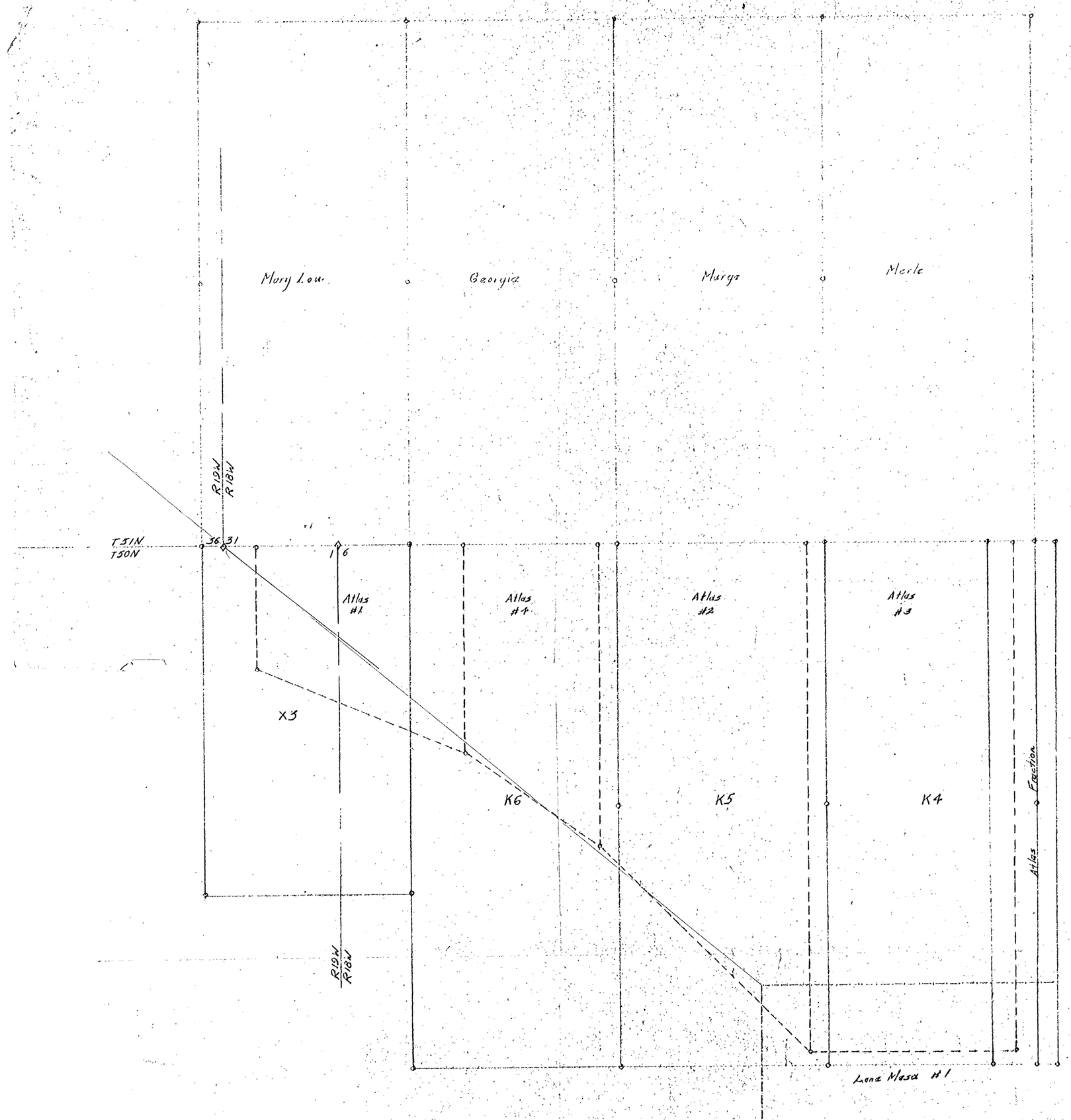
N

Scale
1 inch = 40 feet

Okan Lease Map Showing Ore Holes
and Mine Workings on The K5 (Atlas #2) Claim
Mine Workings by Brunton Survey Feb. 1956

LEGEND

- ore remaining to be mined
- --- underground workings
- —— inclined opening
- • ore hole
- ø mineralized hole



N

Scale: 1" = 200'

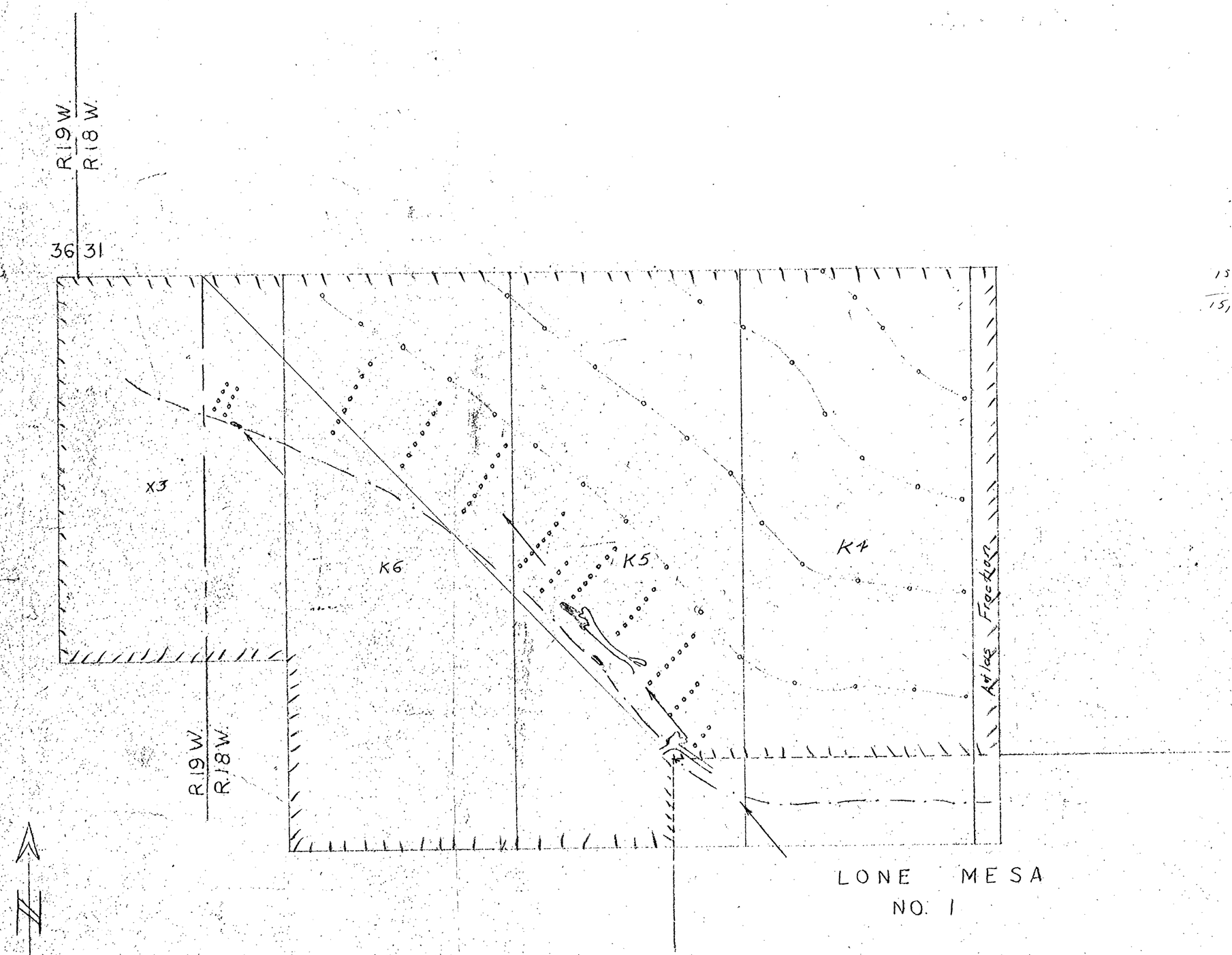
Okan Corporation Claims

Tenderfoot Mesa
Mesa County, Colo.
March 1956 RLR

Legend

--- Original claims prior to relocation and amendment

—·— Conflicting claim



154
100
15,400

79
100
7,900

Scale 1" = 200'

OKAN URANIUM LEASE

Gateway Mining District
Mesa County, Colorado

LEGEND
- Conflicting claim boundary
- Salt Wash rim
- Expected trend of mineralization
- Proposed drill roads and holes
- Ore exposures and blocked out ore remaining to be mined

Note: Dotted lines represent boundaries between property belonging to Okan Uranium Corp. and Marvin R. Beckwith as agreed upon by both parties in writing August 26, 1955

SEPTEMBER 1955
Survey by Mac Dye