REPORT ON PROSPECTING, TRENCHING, AND RADIOMETRIC SURVEY

OTIS 1-64 CLAIMS

Mayo Mining Division, Y.T.
October 30, 1976

Lat. 65°02'N Long. 134°24'W

C.J. Riley
Geologist

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Claim Sheet 106~~5~~1

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Latitude 65°02'N Longitude 134°24'W

Colin J. Riley Geologist

TABLE OF CONTENTS

OTIS PROPERTY

INTRODUCTION

The Otis Claims were staked to cover a uranium occurrence found by Wernecke Joint Venture (Standard Oil Company of B.C., Limited, Acquitaine Company of Canada, Ltd., and Messrs. L. and H. Clay) in June 1975. Minor quantities of radioactive float were located along a strong north trending fault. Further prospecting located more mineralization along an intersecting west trending fault and both structures were staked in June of 1975. Reconnaissance prospecting over the claim group plus a grid soil sampling and radiometric survey were carried out along most of the west trending structure.

In 1976, this property was optioned to Eldorado Nuclear Limited and further prospecting plus a radiometric grid over the north trending structure were carried out. A trench was dug at the point indicating the highest surface radioactivity. Personnel involved with this program were geologist James Griffin on June 24 to 27, 30, and July 1 and 2; field man Jack Dennet on 23 June, and A. Ogilvy on 30 June; July 1 and 2. This work was carried out under the direct supervision of senior geologist Colin J. Riley who was on the property June 23, 24, 27 and 30. The project was managed by Archer, Cathro and Associates, Ltd.

This work was carried out under Atomic Energy Control Board Exploration Permit #MX18/76 issued to Eldorado Nuclear Limited covering exploration work in the Yukon Territory.

PROPERTY LOCATION AND ACCESS

The property consists of 64 contiguous mineral claims recorded in the Mayo Mining Division as follows:

CLAIM NAME	GRANT NUMBERS	EXPIRY DATE
Otis 1-4	Y97426-Y97429	17 March, 1977
Otis 5-20	Y97430-Y97445	17 March, 1978
Otis 21-64	Y97446-Y97489	17 March, 1977

The property is located at latitude 65°02' N and longitude 134°24' W on NTS Claim Sheet 106E/1. Access is by helicopter from Kiwi Lake, 14 miles to the northwest, which can be reached by float equipped aircraft from a charter base at Mayo, 120 miles to the southwest.

GEOLOGY AND MINERALIZATION

The property is mostly underlain by a green silicic to argillitic meta volcanic containing thin banded cherty tuffs. This unit is in fault contact with a younger grey to black pyritic phyllite and argillite. This sequence has been intruded by an explosive gas venting event which forms a polymict breccia containing fragments of chert, volcanic, argillite and carbonate set in a carbonitized matrix. This event has also served to alter the more limy portions of the country rock to a differentially weathering grey-green to reddish calc silicate by the addition of calcium carbonate.

The main structural features are a north striking vertical fault which is offset or terminated to the south by a west trending steeply south dipping fault. Both faults weather recessively and form strong surface linears. The fault zones are composed of brecciated country rocks cemented by quartz and chert with minor hematite and chlorite. Uranium is found as occasional coarse disseminations of brannerite that are usually surrounded by a brick red one to four inch halo of hematite alteration. The north slope and north striking fault were prospected and the only mineralization located was contained in or close to the fault. A grid was established along the most interesting portion of the north striking fault. A baseline with stations at 25 metre intervals marked by 1 metre high wooden pickets, was laid out. Radiometric readings were

taken using a Scintrex BGS 1S total count scintillometer at 15 metre intervals along cross lines separated by 25 metres to cover the area of the fault. In places, topography did not allow the full extension of these lines. The results are plotted on Figure 0-3 showing the grid and survey plus a few high spots located during this survey. The general background for the area is around 35 cps. and the highest point located ran 800 cps. A trench, 6 feet by 2 feet by 1 to 2 feet deep, was dug to bedrock at this point and a grab sample assayed 62 ppm U.

A fracture in the hanging wall of the main north south shear contains brannerite on the shear zone with surrounding red hematite alteration. A selected assay from this area ran 0.16 U_3O_8.

Specimens of brannerite from the east striking and north striking faults were dated by Teledyne Isotopes, Westwood, N.J., using the U/PB method of determination. The age of the specimen from the east striking fault is 623 million years and from the north striking fault, 929 million years. This would place mineralization in the mid to lower Hadrynian. It is possible that both mineralization and the explosive gas event are related to the boundary of the Helikian and Hadrynian.

CONCLUSIONS AND RECOMMENDATIONS

Prospecting of the area located only very minor mineralization in widely scattered localities. Mineralization in all cases was controlled in fractures associated with the faults and consists of small discrete pieces of brannerite on fracture planes. In all cases, the typical red hematite alteration halo was present. Prospecting to the west of the north striking fault located only calc silicate rocks with no mineralization. The radiometric survey, which extended for 1400 metres along the north striking fault, failed to locate any substantial areas of mineralization. A few areas of double background with the odd spot high, directly related to brannerite in fractures, were located. The highest reading was obtained at 825 metres north and was hand trenched.

Mineralization was determined to be spotty brannerite in fractures. All mineralization located to date has been located in small fractures associated with the fault. It is postulated that the explosive breccia formed a dilation zone to allow introduction of uranium mineralization which was then deposited in these fractures. It would thus appear that this property has no tonnage potential.

It is recommended that no further work be carried out.

Colin D. Riley.

APPENDIX "A"

Specimen Description

Specimen A - Brannerite in weakly fractured light coloured Unit 3 metavolcanics from the Main Showing at the north end of Quartet Mountain on the Wernecke claims. A K-Ar date of 1.03 billion years was obtained from a specimen of Unit 3 in the same area but slightly higher (100' $\pm$) in the section.

Specimen B - Brannerite crystal in weakly quartz veined Unit 5 argillite from the locality now staked as the Gnuckles claims.

Specimen C - Brannerite crystal from the east striking vein on the Otis claims.

Specimen D - Brannerite crystal from the north striking vein on the Otis claims.

Specimen E - Small pocket of pitchblende from a barite vein cutting hematite on the Igor claims.

Specimen F - Pitchblende in carbonate-Unit 3 breccia from headwall of Pterd cirque. The original specimen assayed 7.67% U_3O_8 and is described on page 52 of the 1975 WJV report.

DONALD F. SCHUTZ, President

TELEDYNE ISOTOPES
50 VAN BUREN AVENUE
WESTWOOD, NEW JERSEY 07675
(201) 664-7070 TELEX: 13-4474

28 July 1976

Mr. A. R. Archer
Archer, Cathro and Assoc. Ltd.
1016 Standard Building
510 West Hastings Street
Vancouver, B.C. V6B 1LB

Dear Mr. Archer: Re: W. O. 3-4589-142

We have analyzed the six uranium bearing minerals submitted to us for U/Pb age determinations with the following results:

			Isotopic Abundance (Atom %)				Isotopic Ratios		
Sample	% U	% Pb	Pb^{204}	Pb^{206}	Pb^{207}	Pb^{208}	$\frac{Pb^{206}}{U^{238}}$	$\frac{Pb^{207}}{U^{235}}$	$\frac{Pb^{207}}{Pb^{206}}$
A	34.69	1.286	.012	90.634	5.764	3.590	.03930	.3374	.0636
B	34.84	0.442	.020	88.495	5.619	5.866	.01317	.1112	.0635
C	22.24	0.438	.010	87.899	5.286	6.805	.02022	.1645	.0601
D	25.97	0.641	.052	88.388	6.132	5.428	.02593	.2275	.0694
E	4.986	0.886	.0090	91.937	7.469	.585	.1908	2.113	.0812
F	14.86	0.675	.035	92.590	5.840	1.535	.04965	.4068	.0631

The ages of the minerals were calculated as follows:

Sample	Pb^{208}/U^{238} (m.y.)	Pb^{207}/U^{235} (m.y.)	Pb^{207}/Pb^{206}
A	249	295	745
B	84	107	742
C	129	155	623
D	165	208	929
E	1126	1153	1249
F	312	346	728

The pattern of these ages is in all cases typical of that which develops when lead is lost or uranium is gained in the system. Detailed interpretation of discordant ages is beyond the scope of our routine analytical services inasmuch as a knowledge

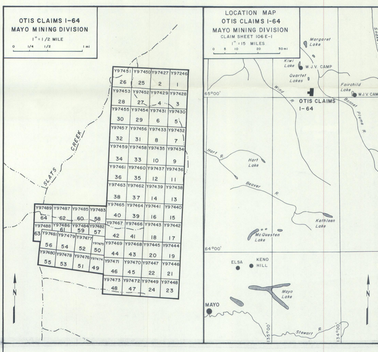
of the geological relationships of the minerals is required. I have, however, enclosed a discussion of discordant ages from Lead Isotopes in Geology (Russell-Farquhar, 1960) to provide you with some basic information on interpretation of the data.

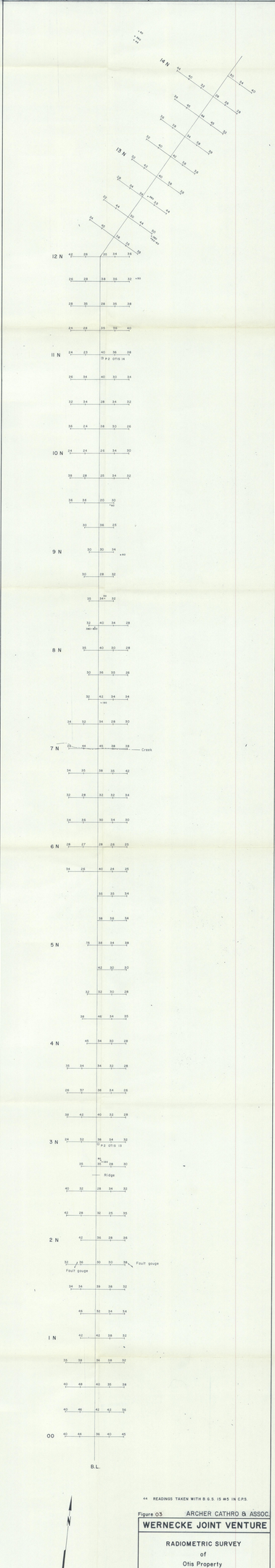
If I can be of help to you in pursuing further study of the data presented, please let me know.

Yours truly,

Donald F. Schutz
President

DFS:mm
enclosure: Pages 104-107, Lead Isotopes in Geology,
Russell-Farquhar, 1960





44 READINGS TAKEN WITH B.G.S. 15 m.S IN C.P.S.

Figure 03 ARCHER CATHRO & ASSOC.

WERNECKE JOINT VENTURE

RADIOMETRIC SURVEY
of
Otis Property

1 cm = 10 metres

TO ACCOMPANY REPORT DATED 30/10/76

DATE July 1976 | C.J. RILEY

OTIS CLAIMS I-64
MAYO MINING DIVISION
1" = 1/2 MILE
0 1/4 1/2 1 mi

Y97451 26	Y97450 25	Y97427 2	Y97246 1
Y97453 28	Y97452 27	Y97429 4	Y97428 3
Y97455 30	Y97454 29	Y97431 6	Y97430 5
Y97457 32	Y97456 31	Y97433 8	Y97432 7
Y97459 34	Y97458 33	Y97435 10	Y97434 9
Y97461 36	Y97460 35	Y97437 12	Y97436 11
Y97463 38	Y97462 37	Y97439 14	Y97438 13
Y97465 40	Y97464 39	Y97441 16	Y97440 15
Y97467 42	Y97466 41	Y97443 18	Y97442 17
Y97469 44	Y97468 43	Y97445 20	Y97444 19
Y97471 46	Y97470 45	Y97447 22	Y97446 21
Y97473 48	Y97472 47	Y97449 24	Y97448 23
Y97475 50	Y97474 49		
Y97477 52	Y97476 51		
Y97479 54	Y97478 53		
Y97481 56	Y97480 55		
Y97483 58	Y97482 57		
Y97485 60	Y97484 59		
Y97487 62	Y97486 61		
Y97489 64	Y97488 63		

SLATS CREEK

N

LOCATION MAP
OTIS CLAIMS I-64
MAYO MINING DIVISION
CLAIM SHEET 106 E-1
1" = 15 MILES
0 5 10 20 30 mi

Margaret Lake
Snake R
Kiwi Lake
W.J.V. CAMP
Quartet Lakes
Fairchild Lake
W.J.V. CAMP
65°00'
Wind R
OTIS CLAIMS I-64
Bonnet plume R
Hart R
Hart Lake
Beaver R
Kathleen Lake
Mc Questen Lake
64°00'
ELSA
KENO HILL
Mayo Lake
MAYO
N
135°00'
Stewart R
134°00'

SLATS CREEK

R76-69
75
Cherty tuff
R76-70
60
R76-68
55 Laminated carbonate
R76-66
Calc silicates
R76-67
0.16% U_3O_8

Ridge
Argillite
Calc silicate talus and scattered outcrop
Trench 10' x 3' x 2'
Creek
Fault
Ridge
Ridge
Ridge

N
0 870 1740 feet
■ R76-66 SAMPLE NUMBERS
●-----● TRAVERSE LINES

Figure 04 ARCHER, CATHRO & ASSOC.

WERNECKE JOINT VENTURE

PROSPECTING MAP of Otis Claims

1" = 870'

TO ACCOMPANY REPORT DATED 30/10/76

DATE: June 27-28, 1976 | C.J. Riley and J. Griffin