ARCHER, CATHRO
& ASSOCIATES LIMITED
CONSULTING GEOLOGICAL ENGINEERS

VANCOUVER, B.C. (604) 688-2568

BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 (403) 667-4415

1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

WERNECKE JOINT VENTURE

GEOLOGICAL AND GEOCHEMICAL REPORT

TOW 1-16 CLAIMS

NTS 106C/13

Latitude 64°50'N Longitude 133°49'W

Work done July 12, 13 & 23, 1980

W.D. Eaton, B.Sc.

A.R. Archer, B.A.Sc.,P.Eng.

January 1981

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $ 2,800.00

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

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INTRODUCTION

The Tow 1-16 claims were staked in 1978 to cover a pitchblende float occurrence found but not staked by Wernecke Joint Venture (WJV) in 1976. The property was offered to Eldorado Nuclear Ltd. at staking cost as required by the 1976 WJV-Eldorado option agreement. Eldorado accepted the offer and conducted a one day program of prospecting and airborne radiometrics (which failed to locate the occurrence) before returning the property to WJV in January, 1980.

The 1980 Tow exploration program included a total of 9 mandays of prospecting, geological mapping, grid radiometrics, and soil and rock geochemical sampling on July 12, 13, and 23 by geologist T. Stokes, senior assistant J. Cockell, and junior assistants C. Bishop and J. Staniforth.

PROPERTY, LOCATION AND ACCESS

The Tow property consists of 16 contiguous mineral claims recorded in the Mayo Mining District as follows:

Claim Name	Grant Numbers	Expiry Date
Tow 1-16	YA30553-YA30568	8 June/81

The property is located at latitude 64°50'N and longitude 133°49'W within NTS claim sheet 106C/13, 180 km northeast of Mayo. The closest lake suitable for float-equipped fixed wing aircraft is Fairchild Lake 14 km to the north while the nearest bush airstrip is at Bear River, 20 km to the west. Access in 1980 was by Hughes 500D helicopter leased from Trans North Turbo Air, Whitehorse, and based in the WJV camp on the Igor property 45 km to the northwest. A total of 3.2 hours of helicopter time was required for the program.

GEOLOGY

Most of the property lies above tree line with vegetation limited to scrub brush and grasses on the lower slopes. Local elevations range from 900 m in the creek bottoms to a maximum of 1800 m. Outcrop is most abundant along ridges while the steep, actively eroding hillsides are generally obscured by locally derived talus.

Figure WJV 80-T1 following page 3 illustrates the property geology which consists of Helikian or older Gillespie Lake Group, orange weathering, stromatalitic dolomites (Hc), conformably underlain by Quartet Group thin bedded, bleached argillites (Hsa), and cut by a Helikian breccia body. The bleached argillites are exposed in the crest of a gently eastward plunging anticline and contain numerous small breccia zones east of the main breccia body.

MINERALIZATION

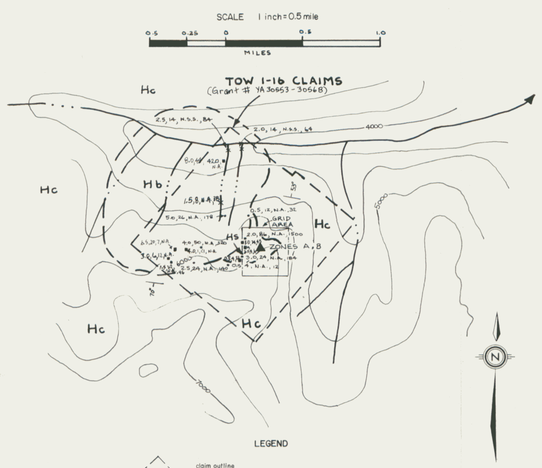
In 1976 a 5 metre wide zone of pitchblende-bearing, bleached argillite talus was discovered along the southeastern margin of the breccia body. Exploration by Eldorado in 1978 failed to relocate the 1976 WJV zone but did locate several minor pitchblende and brannerite occurrences in and adjacent to the breccia. Minor pyrite, hematite, chalcopyrite and malachite are found on the property but not usually associated with the uranium mineralization. Details of the 1980 WJV examination of the zone of pitchblende float are included in the following section.

PROSPECTING, MAPPING, RADIOMETRICS AND GEOCHEMISTRY

Two mandays of prospecting indicated that the best uranium mineralization lies along the southeast margin of the breccia, and outlined two zones (A and B) of anomalous radioactivity. In order to better explore these zones an additional seven mandays were spent mapping the geology, sampling the zones, and conducting a compass- and topofil-controlled, radiometric and soil geochemical grid survey over a surrounding 600 m x 700 m area. The baselines and soil sample locations were marked with one metre high wood laths and radiometric readings were taken at waist height using Scintrex BGS-ISL scintillometers. All samples were analyzed geochemically for U, Cu, Co and Au at Chemex Labs Ltd., North Vancouver. Uranium was analyzed using neutron activation, copper and cobalt were done by perchloric nitric digestion with atomic absorption finish and gold was done by fire assay followed by neutron activation.

Figure WJV 80-T1 on the following page illustrates the claim boundary, geology, radiometrics, uranium, cobalt, gold and copper geochemistry, and the location of Zones A and B. The radiometric and geochemical surveys indicate that areas underlain by bleached argillites exhibit radiometric backgrounds 2 to 3 times higher than the carbonates, and that although soil uranium values are low over both units (2 ppm U on average), cobalt and gold values are much higher over the bleached argillites averaging 42 ppm Co and 28 ppb Au compared to 11 ppm Co and 3.5 ppb Au over the carbonates. The highest soil values are 198 ppm Co and 66 ppb Au. A line of soil samples collected over the breccia pipe averaged 2 ppm U, 49 ppm Co, and 261 ppm Cu, which are normal values for breccias. One sample assayed 1500 ppm Cu from soil below outcropping copper mineralization. Eleven grab samples representing the three rock units were analyzed for gold. Ten of the samples

PROPERTY GEOLOGY & GEOCHEMISTRY



LEGEND

- claim outline
- soil sample location & geochemical results in ppm U, ppm Co, ppb Au, ppm Cu
- silt sample location & geochemical results in ppm U, ppm Co, ppb Au, ppm Cu
- rock sample location & geochemical results in ppm U, ppm Co, ppb Au
- N.A. not analyzed

GEOLOGY

HELIKIAN
- Hb heterolithic breccia

Probably APHEBIAN
- Hc orange-brown weathering, massive dolomite
- Hs black slates & argillites, bleached & altered near breccia
- approximate contacts
- bedding attitudes

DETAIL GEOLOGY

LEGEND

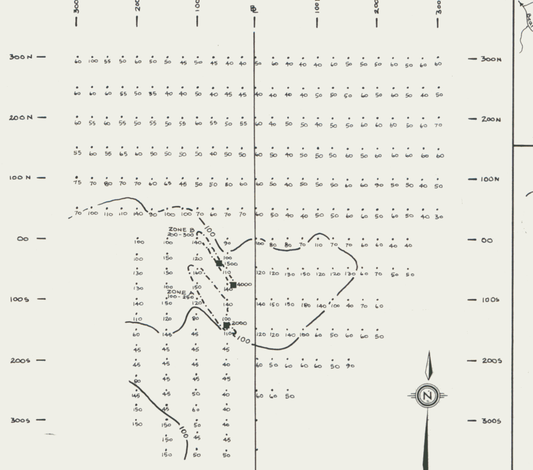
- Hc: orange-brown weathering, massive dolomites
- Hs: thin-bedded, bleached & hematized argillites cut by narrow breccia bodies
- geological contact, observed, approximate, inferred
- fracture & attitude

GRID GEOCHEMISTRY

LEGEND

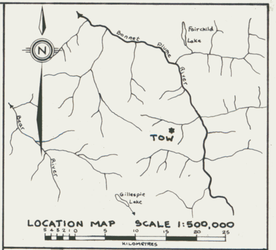
- 1.5, 10, 1 soil sample location & geochemical results in ppm U, ppm Co, & ppb Au
- 2.8 rock sample location & geochemical result in ppb Au
- 50 Au contour line
- N.S.S. not sufficient sample for analysis

GRID RADIOMETRICS



LEGEND

- 60 radiometric station & waist height reading in counts/second with Scintrex RGS-1SL scintillometer
- 4000 location of strongly radioactive float & counts/second of hand specimen
- 100 radiometric contour line



LEGEND

- zones of anomalous radioactivity

FIGURE WJV 80-TI

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GEOLOGY, RADIOMETRICS, U, Co, Au, Cu GEOCHEMISTRY

TOW PROPERTY

WERNECKE JOINT VENTURE

SCALE 1:5000

75 50 25 0 50 100 150 200 250

metres

returned values in the 1 to 45 ppb Au range and one sample, consisting of chalcopyrite bearing, quartz vein float derived from the orange weathering carbonate, returned a strongly anomalous value of 420 ppb Au.

The two zones of anomalous radioactivity occur in mixed bleached argillite and breccia talus near the top of a north-south trending ridge southeast of the breccia pipe. Neither zone outcrops and both appear to have exaggerated strike lengths due to gravity migration of the talus. Zone A is a 30 m by 130 m area containing occasional specimens with up to 6 times background radioactivity. A random chip sample collected over the entire zone assayed 12 ppm U_3O_8 while a grab sample representative of the radioactive material assayed 87 ppm U_3O_8. Zone B is a 5 m by 100 m area in which one rock in ten exhibits 2 to 25 times background radioactivity. A random chip sample assayed 161 ppm U_3O_8 whereas a grab sample exhibiting 8 times background radioactivity assayed 480 ppm U_3O_8. Cobalt values are low in both zones, averaging 21 ppm Co, and gold is weakly anomalous, ranging from 11 to 50 ppb and averaging 20.5 ppb Au.

CONCLUSIONS AND RECOMMENDATIONS

A 200 m by 500 m area of bleached argillites exposed in the crest of an anticline on the southeast margin of the breccia contains two zones of uranium mineralization and is geochemically anomalous in gold. The zones are too small and low grade to be of direct economic interest. Future work should include exploration along poorly exposed portions of the breccia margin and possibly a drill program to explore downdip extensions of the altered argillites. The gold anomalies are encouraging and additional sampling should be done on a low priority basis.

Respectfully submitted,

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Association of Professional Engineers of the Yukon Territory
R. ARCHER
GEOLOGICAL
ENGINEER