Office Of The Supervising Mining Recorder
MAY - 4 1976
WHITEHORSE
Yukon Territory

RECEIVED
27 APR 1976
MINING RECORDER
LAND AGENT
MAYO Y.T.

REPORT ON SOIL GEOCHEMISTRY, GEOLOGY AND RADIOMETRIC SURVEY

BOZO 1-16 CLAIMS

Mayo Mining District
Claim Sheet 106D/10
Lat. 64°40'N Long. 134°45'W
22 March, 1976

A.R. Archer Consulting Engineer

RECEIVED
MAY 07 1976
MINING
INSPECTORS OFFICE
WHITEHORSE, Y.T.

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 $3300.00

Resident Geologist ~~or~~
~~Resident Mining Engineer~~

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

B. R. BAXTER
Supervising Mining Recorder
Commissioner of Yukon Territory

ARCHER, CATHRO
AND ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS

BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 667-4415
STANDARD BUILDING, VANCOUVER, B.C. 688-2568

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

REPORT ON SOIL GEOCHEMISTRY, GEOLOGY AND RADIOMETRIC SURVEY

BOZO 1-16 CLAIMS

Mayo Mining District
Claim Sheet 106D/10

Latitude 64°40' North
Longitude 134°45' West

22 March, 1976

Alan R. Archer
Consulting Engineer

Table of Contents

In Text Page

Figures In Pocket

INTRODUCTION

The Bozo claims cover an uranium occurrence found by Wernecke Joint Venture (Standard Oil co. of B.C. Ltd., Aquitaine Co. of Canada Ltd., and Messrs. L & H Clay) in June, 1975 and explored by soil sampling, geological mapping, radiometric surveys, and chip channel sampling. This work was performed on a part time basis during the period 5 August - September 4 by a field crew based at Kiwi Lake. The crew consisted of geologists U. Schmidt, and T. Bremner, and field men D. Eaton, J. Dickinson and R. Dennett. The project was managed by Archer, Cathro & Associates Ltd. and supervision was provided by M.P. Phillips and the writer.

PROPERTY, LOCATION AND ACCESS

The property consists of sixteen contiguous mineral claims registered in the Mayo Mining District as follows:

CLAIM NAME	GRANT NUMBERS	EXPIRY DATE
Bozo 1-16	Y97530-Y97545	27 June, 1976

The claims are located at latitude 64°40' north and longitude 134°45' west within NTS claim sheet 106D/10, eighty miles northeast of Mayo. Access was by helicopter from the Wernecke Joint Venture (WJV) base camp at Kiwi Lake, forty miles to the north. The Wind River Trail, a winter road, passes less than five miles east of the claims but is separated by rugged topography.

GEOLOGY AND MINERALIZATION

A radioactive gossan is found in a window of Proterozoic rocks exposed through Ordovician and Silurian limestone and dolomite. The Proterozoic is mapped by the Geological Survey of Canada (Memoir 364, by L.H. Green) as undivided Unit 1 shales, argillites and quartzites. Regional mapping by WJV subdivided G.S.C. Unit 1 into six units, numbered Units 1 to 6 respectively.

Only two of the WJV units are present on the Bozo claims, these are (a) Unit 3, a fine grained metavolcanic with mudstone interbeds that is occasionally altered to green phyllite and (b) Unit 6, a fanglomerate or regolith. The Unit 3 metavolcanics are strongly foliated in an eastern direction and the sequence has been complexly folded. Radioactivity is found in a strongly gossaned pyritic zone in the bottom of a narrow, U-shaped valley at the eastern headwaters of Bond ~~B~~creek at an elevation of 5,000 feet above sea level. Only minor amounts of overburden and alpine grasses cover the showing.

The gossan is bisected by a shallow creek canyon following a north trending fault which is partially filled with barite (see Figure Bozo 1). Mineralization consists of up to fifty per cent disseminated pyrite and marcasite with minor magnetite and barite and a trace of chalcopyrite in brecciated Unit 3 volcanics over an area approximately 600 feet long and 400 feet wide. Weathering has produced a strong limonite gossan that only extends a few inches below surface except along fractures. Most of the gossan is weakly radioactive. Chip samples were taken at five foot intervals across a zone 140 feet wide in which radioactivity ranges from two to five times background (see Figure Bozo 2) and were analyzed geochemically for uranium, copper, molybdenum and silver. Assays ranged from 1.5 to 73.0 ppm uranium with an average of 15 ppm; 13 to 2,080 ppm copper with an average of 469 ppm; and less than 1 ppm to 196 ppm molybdenum with an average of 41 ppm; and less than 0.5 ppm to a high of 2.5 ppm silver. Two specimens of pyrite-rich material assayed trace gold and showed no unusual metal concentrations in spectrographic analysis. No specific radioactive mineral has been identified.

GEOCHEMISTRY AND RADIOMETRIC SURVEY

A 1,600 foot baseline was established by tape and compass in a northwest direction along the Bozo claim line closest to the pyrite gossan. Stations were marked along the baseline at 100 foot intervals with three foot high lath pickets. Soil samples and radiometric readings were taken on pace and compass crosslines extending 600 feet southwest and 400 feet northeast of the baseline stations as illustrated on Figures Bozo 1 and Bozo 2.

The soil samples, which were normally taken at 200 foot intervals on lines 200 feet apart, were obtained by digging a shallow pit with a grubhoe to a C horizon that was mainly composed of fine talus. Samples were collected in individual prenumbered kraft paper bags and shipped by air freight to Chemex Labs Ltd., North Vancouver, B.C., where they were dried, screened to a minus 80 mesh fraction and split into two portions. One portion was ashed for 15 minutes at 550°C, dried twice in four molar nitric acid, picked up in acidified water, fused with a standard sodium fluoride-based flux and assayed for uranium in parts per million)ppm) with a G.K. Turner fluorometer. The remaining portion was digested in nitric-perchloric acid and analyzed in ppm for copper, lead, zinc, molybdenum and vanadium by atomic absorption spectrometry. All geochemical values are illustrated on Figure Bozo 1. Lead, zinc and vanadium are mainly background except a few weakly anomalous lead and zinc values in the southern portion of the grid area where younger dolomite float is more abundant. Soil samples from the gossan and Unit 3a metavolcanic breccia are strongly anomalous in copper (up to 587 ppm in contrast to background of 75 ppm)and molybdenum (up to 126 ppm in contrast to background of less than 1 ppm). Erratic, above-threshold uranium assays of up to 8 ppm in contrast to background of less than 1 ppm are associated with the copper-molybdenum anomaly.

Radioactivity was measured at fifty foot intervals on lines 100 feet apart using a Scintrex BGS-1S broadband scintillometer which is equipped with a 1 inch by 1 inch crystal sensor. The readings, as illustrated on Figure Bozo 2, are in counts-per-second (cps) at waist level, about three feet above ground. Background ranges from 45 to 64 cps. The gossan is weakly radioactive with background in excess of 75 cps. The highest response, in excess of 100 cps, is from an area approximately 150 feet long and 75 feet wide on the eastern side of the gossan.

CONCLUSIONS

There is insufficient radioactivity on the Bozo claims to justify further work. However, the anomalous geochemical response in copper and molybdenum from the intraformational breccia, which has been mapped as a sub-unit of Unit 3 metavolcanics, is characteristic of the base of Unit 6 fanglomerate from other WJV properties where uranium mineralization was found beneath Unit 6. If the area mapped as Unit 3a at Bozo is, in fact, Unit 6, the best radioactivity would not be exposed and would be expected to occupy structural traps (possibly the north trending fault) lying at shallow depth immediately below the fanglomerate. The claims should not be allowed to expire until the geology is more accurately identified.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.

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

GEOLOGY

MESOZOIC

20a	GSC UNIT 20a (on Nash Creek map 1282A) Apple green weathering, serpentinized and chloritized gabbro dikes.

PRECAMBRIAN

7	UNIT 7 DOLOMITE (GSC UNIT 2 on Nash Creek map 1282A) Orange weathering dolomite
7a	Grey and light brown thin bedded limy argillite
3	UNIT 3 METAVOLCANICS Green phyllitic tuffaceous metavolcanics with minor horizons of argillite and intraformational breccia
3a	Brown weathering, sheared, intraformational breccia, matrix and fragments of green tuffaceous volcanics
3d	Black slate and argillite

LEGEND

▤	Barite veins
●	Massive pyrite
▩	Gossan
■	Rock assay
//	Geological boundary: defined, approximate
◌	Outcrop boundary
≈	Fault: defined, approximate
↗	Foliation: inclined
⟋	Bedding: inclined
•	Soil sample Cu, Pb, Zn, U, V, Mo in ppm Analyzed by Chemex Labs. Ltd., N. Van.

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
27 March/76
ENGINEER

FIG. BOZO I
ARCHER, CATHRO & ASSOCIATES LTD.

GEOLOGY & GEOCHEMISTRY OF MINERALIZED SHOWING

BOZO 1-16 CLAIMS
WERNECKE JOINT VENTURE

SCALE IN FEET
100 0 100 200

To accompany report dated March, 1976

RADIOMETRIC PROFILE & GRAB/CHIP SAMPLING

A — A'

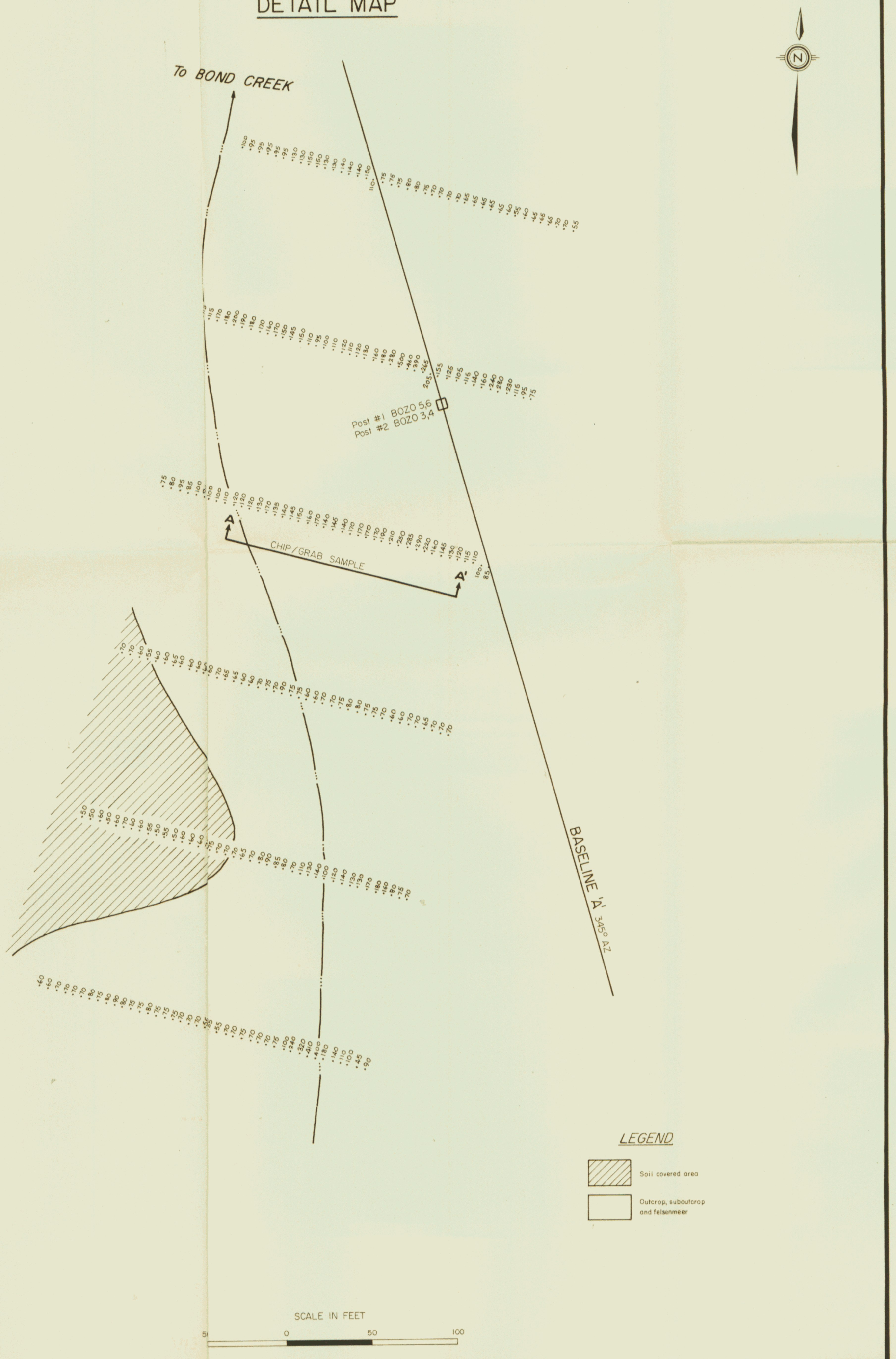
120 120 120 130 170 135 140 145 150 160 170 140 145 140 170 170 170 170 190 210 250 285 290 220 160 145 130 120 115 Ground level scintillometer readings at 5ft intervals

20.0	14.5	37.0	17.0	18.0	9.0	5.5	14.5	12.5	14.0	10.5	7.5	7.0	9.5	Uranium in ppm
270	270	270	2080	960	405	562	587	521	700	1000	405	262	450	Copper in ppm
10	8	6	17	28	36	62	40	44	58	60	48	27	43	Molybdenum in ppm
<0.5	<0.5	<0.5	0.5	2.0	0.5	2.5	1.0	1.0	2.0	2.0	<0.5	<0.5	0.5	Silver in ppm

16.0	13.5	11.0	7.5	15.0	13.5	14.0	73.0	40.0	5.5	12.5	3.5	2.5	1.5	Uranium in ppm
640	525	355	286	175	263	379	800	587	228	56	44	34	13	Copper in ppm
64	68	33	31	27	38	50	150	196	3	3	<1	<1	<1	Molybdenum in ppm
1.5	1.5	<0.5	0.5	<0.5	0.5	1.0	1.0	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Silver in ppm

1" = 20'

DETAIL MAP



LEGEND

• 52	Radiometric survey grid point with reading counts per second taken with a Scintrex BGS-1S broadband Scintillometer (thallium activated sodium iodide crystal)
⬭	Readings >75 counts per second
☐	Claim post

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL ENGINEER
22 March/76

FIG. BOZO 2
ARCHER, CATHRO & ASSOCIATES LTD.

RADIOMETRIC SURVEY & ROCK SAMPLING

BOZO 1-16 CLAIMS
WERNECKE JOINT VENTURE

SCALE IN FEET
200 0 200 400

To accompany report dated March, 1976