

REPORT ON GEOLOGY AND RADIOMETRIC SURVEY

PTERD 1-10

Mayo Mining District
Claim Sheet 106C/14

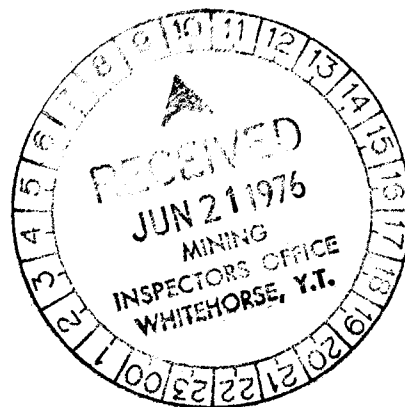
Lat. 64°57'N

Long. 133°18'W

22 March, 1976

[Alan R. Archer

Consulting Engineer]



090103



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

\$2450.00

~~Resident Geologist or
Resident Mining Engineer~~

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

B. R. BAXTER
Supervising Mining Recorder

~~Per~~ 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 GEOLOGY AND RADIOMETRIC SURVEY

PTERD 1-10

Mayo Mining District

Claim Sheet 106C/14

Latitude 64°57' North

Longitude 133°18' West

22 March, 1976

Alan R. Archer

Consulting Engineer

TABLE OF CONTENTS

<u>In Text</u>	<u>Page</u>
Introduction	1
Property, Location and Access	1
Previous Work	2
Geology and Mineralization	2
Radiometric Survey	5
Conclusions	5

In Pocket

Figure Pl - Geology and Radiometric Survey - Pterd Claims,
Scale 1"= 200 feet

INTRODUCTION

The Pterd 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 July, 1975 and explored by preliminary geological mapping and radiometric surveys. This work was performed on a part time basis during the period 13 August - September 2 by a field crew based at Kiwi Lake. The crew consisted of geologists U. Schmidt, A. Gregson and J. Slater and field men D. Eaton and J. Dickinson. The project was managed by Archer, Cathro & Associates Ltd. and supervision was provided by M.P. Phillips and the writer. Protection claims were added in late July and early September.

PROPERTY, LOCATION AND ACCESS

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

<u>CLAIM NAME</u>	<u>GRANT NUMBERS</u>	<u>EXPIRY DATES</u>
Pterd 1-10	Y98056-Y08065	28 July, 1976
Pnerd 1-4	Y98240-Y98243	8 August, 1976
Knit 1-8	YA1320-YA1327	18 September, 1976
Ptoes 1-8	YA1328-YA1335	18 September, 1976
Skin 1-4	YA1336-YA1339	18 September, 1976

The property is located at latitude 64°57' north, longitude 133°18' west on NTS claim sheet 106C/14, 120 airmiles northeast of Mayo. Access was by helicopter from the Wernecke Joint Venture (WJV) base camp at Kiwi Lake, forty-three miles to the northwest.

An emergency bush airstrip, suitable for single engine aircraft is located near the junction of Tetrahedrite Creek and Cobalt Creek, about two miles south of the property. It was constructed in 1968 with equipment brought in over a winter road from the Wind River Trail, a winter route situated fifty-six miles to the west. A bulldozer trail extends from the airstrip onto the property at the headwaters of Cobalt Creek.

PREVIOUS WORK

Three previous work targets, the Cirque, Mammoth and Porphyry occurrences, are located in the general area as illustrated on the location insert on Figure Pl. All are copper showings that were discovered in 1967 by game guide L. Brown and staked as the Mammoth 1-158 claims by Nordex Exploration Ltd. A new company, Bonnet Plume River Mines Ltd. was formed in 1968 to develop the claims. Work included geological mapping, grid soil sampling and magnetic surveys in 1967, tote trail and airstrip construction in 1968 and bulldozer trenching, plus 2,000 feet of diamond drilling on the Porphyry occurrence, in 1968 and 1969. The Mammoth occurrence was restaked as the Air claims in April, 1973 by Cypress Resources Ltd. and subsequently explored by minor hand trenching. The Cirque and Porphyry occurrences were restaked as the WA claims in April, 1974 by D. Waugh and were allowed to lapse one year later without any work being done.

GEOLOGY AND MINERALIZATION

Topography in the claim area is characterized by steep, rugged, knife edge ridges, reaching 6,000 to 7,000 feet in elevation, which have been deeply incised by cirquing. Geological mapping and prospecting is difficult due to thick accumulations of local debris in the valleys combined with steep, inaccessible valley walls. The north facing valleys are not snow free until mid-July and fresh snowfall can be expected by late August.

The area is mapped by the Geological Survey of Canada (open file 205, 1974, Nadaleen River) as Helikian Units HCS argillite, limestone and calc-silicate and HSC argillite and quartzite. Regional mapping by WJV subdivides Units HCS and HSC into six units numbered 1 to 7 respectively. Four of the WJV units are found on the Pterd claims. These are (1) Unit 3, a fine grained sometimes phyllitic metavolcanic with mudstone interbeds (2) Unit 4, a differentially

resistant weathering calc-silicate (3) Unit 6, a fanglomerate or regolith called breccia and (4) Unit 7, an orange weathering argillaceous dolomite.

The Pterd claims were staked to cover a train of radioactive float lying on a stagnating alpine glacier in a north facing steep walled valley. Mineralized boulders make up between 0.1 per cent and three per cent of the float in the train, which is 200 feet wide, more than 3,000 feet long and centred on the medial line of the underlying ice. The source is probably at the base of the cirque headwall, which is now buried under unmineralized talus from the ridge top. Radioactive boulders range from a few inches to two feet in diameter, have angular shapes and are composed of dark green to black, brecciated Unit 3 metavolcanics. The breccia is tightly cemented and is similar to intraformational breccia seen elsewhere in Unit 3. Individual breccia fragments are angular, up to two inches across and often only partially rotated. Radioactive mineralization occurs as sooty black, amorphous material with minor associated pyrite and chalcopyrite surrounding and filling microfractures in individual breccia fragments. Yellow and green secondary uranium oxide is occasionally seen.

The general geology illustrated on Figure P1 has been compiled on the basis of a few observations along the sides of the valley and is probably overgeneralized. The setting consists of Unit 7 dolomite overlying Unit 6 breccia which is discontinuously capping Unit 3 metavolcanics. The source of the uranium float appears to be very near the Unit 6 contact.

Mineralized boulders assay more than three times higher in uranium than material with comparable total count radioactivity at other WJV occurrences. Three specimens of more or less average material assayed 2.04 per cent (#738), 1.36 per cent (#739), and 1.61 per cent (#312) U_3O_8 respectively. Sample #312 also assayed 75 ppm thorium, 0.07 per cent rare earths, 0.02 per cent copper, 0.23 oz/ton silver and trace gold. A specimen (#309) of similar but better grade float from the base of the cirque headwall assayed 7.67 per cent U_3O_8 , 10 ppm thorium, 0.09 per cent rare earths, 0.09 per cent copper, 0.22 oz/ton silver and trace gold. Spectrographic analysis of these specimens are attached on the following pages.

Several other radioactive areas have been found although prospecting elsewhere on the Pterd Property has been light. For example, red stained Unit 3 metavolcanics on the top of the ridge facing Cobalt Creek on the Pterd claims contain minor zones of radioactivity from which a specimen assayed 0.325 per cent U_3O_8 ; weakly radioactive (up to 300 cps) Unit 4 calc-silicates occur on the north side of Cobalt Creek on the Pterd claims; narrow radioactive shear zones (up to 3000 cps) were found north of the Pterd claims; sparse but good grade float of the brannerite type mineralization has been found in several locations along both sides of the headwaters of Discovery Creek on the Skin and Ptoes claims, of which a specimen assayed 1.59 per cent U_3O_8 , 110 ppm thorium, 0.07 per cent rare earths, 0.02 per cent copper, 0.07 oz/ton silver and trace gold; and, minor radioactive float was found in both Tetrahedrite and North Fork Creeks.

The Pnerd claims cover the Cirque occurrence which is exposed on the steep, almost inaccessible, cirque face at the headwaters of Cobalt Creek. The showing consists of chalcopyrite with minor cobaltite occurring as disseminations and stringers in siderite-quartz filled fractures cutting Unit 3 metavolcanics with dolomitic interbeds. The best area of mineralization is about 400 feet by 130 feet in size and is developed in fracturing at the crest of an anticline. The grade has been visually estimated by previous workers at 1 per cent copper and 0.2 per cent cobalt. A traverse along the base of the cirque failed to locate any associated radioactivity.

RADIOMETRIC SURVEY

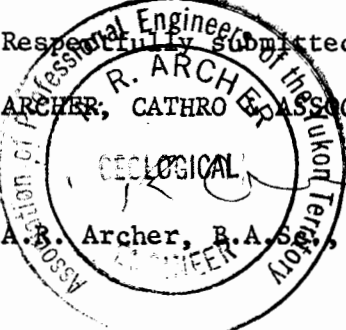
A 2,200 foot chain and compass baseline was established parallel to the train of float on the Pterd claims, as illustrated on Figure Pl. Stations were marked at 200 foot intervals with three foot high lath pickets and radiometric readings were taken at fifty foot intervals along pace and compass lines at right angles to each picket station. Readings were made at waist level (about three feet above the ground) using a Scintrex BGS-1S broadband scintillometer equipped with a 1 inch by 1 inch crystal sensor. Radiometric background is about 50 cps and the area of radioactive float is outlined by contouring 100 cps or greater. The count registered by individual radioactive boulders along the lines is shown at the south end of the baseline where the overall background drops below 100 cps.

CONCLUSIONS

The most important feature of the mineralized float train on the Pterd claims is the consistency of grades in excess of 1 per cent U_3O_8 . This, combined with the occurrence of continuous mineralized float for a length of more than 3,000 feet and width of at least 200 feet suggests that the source has sufficient size and grade to warrant the high cost of searching for it. The next stage of work should consist of continued prospecting

and mapping of the claim group and surrounding unstaked area. The headwall of the cirque on the Pterd claims should be explored for the float source during the short period of the summer when weather conditions allow safe access.

Respectfully submitted,
R. ARCHER
ARCHER, CATHRO ASSOCIATES LTD.
GEOLOGICAL
A. B. Archer, B.A.Sc., P.Eng.

A circular professional seal for the Association of Professional Engineers of the Yukon Territory. The seal contains the text "R. ARCHER" and "GEOLOGICAL" in the center, and "ARCHER, CATHRO ASSOCIATES LTD." around the inner edge. The outer edge of the seal reads "ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE YUKON TERRITORY".



CHEMEX LABS LTD.

NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.,
Box 4127
Whitehorse, Y.T.

CERTIFICATE NO. SP236

INVOICE NO. 14276

RECEIVED July 9, 1975

ANALYSED July 15, 1975

ATTN:

WJV - PTERD

SAMPLE NO. 1	Lower Concentration Limit (PPM)	Sample A00738	Sample A00739
Antimony	50	bcl	bcl
Arsenic	50	bcl	bcl
Barium	5	200	200
Beryllium	5	bcl	bcl
Bismuth	5	5	5
Boron	20	20	50
Cadmium	20	bcl	bcl
Calcium	0.05%	2%	0.05%
Chromium	10	100	200
Cobalt	10	200	100
Copper	1	50	2000
Gallium	2	10	10
Germanium	20	bcl	bcl
Iron	0.05%	2%	2%
Lead	5	1000	500
Magnesium	0.02%	2%	1%
Manganese	5	5000	200
Molybdenum	10	bcl	50
Nickel	5	200	200
Niobium	50	bcl	bcl
Silver	1	2	2
Strontium	20	bcl	bcl
Tantalum	200	bcl	bcl
Tellurium	200	bcl	bcl
Thorium	100	bcl	bcl
Tin	10	bcl	10
Titanium	5	2000	2000
Vanadium	10	20	20
Zinc	50	50	100
Zirconium	20	100	200

SAMPLE 738
assayed
2.04% U₃O₈

SAMPLE 739
assayed
1.36% U₃O₈

Concentration Range

>5000 ppm = >5000 ppm	50 ppm = 25-100 ppm
5000 ppm = 2500-10000 ppm	20 ppm = 10-50 ppm
2000 ppm = 1000-4000 ppm	10 ppm = 5-20 ppm
1000 ppm = 500-2000 ppm	5 ppm = 2-10 ppm
500 ppm = 250-1000 ppm	2 ppm = 1-4 ppm
200 ppm = 100-400 ppm	1 ppm = 0.5-2 ppm
100 ppm = 50-200 ppm	bcl = below concentration limit

Ranges for Iron, Calcium & Magnesium are reported in %



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *AP/Shep*



CHEMEX LABS LTD.

NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 986-0648
AREA CODE: 604
TELEX: 043-62697

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.
Box 4127
Whitehorse, Y.T.

CERTIFICATE NO. SP 260

INVOICE NO. 14944

RECEIVED Aug. 21/75

ANALYSED Sept. 1/75

ATTN:

WJV - PTERO.

SAMPLE NO. 1	Lower Concentration Limit (PPM)		No. 309	No. 312
Antimony	50		200	100
Arsenic	50		500	2000
Barium	5		500	200
Beryllium	5		10	5
Bismuth	5		50	50
Boron	20	SAMPLE 309 assayed 7.67% U ₃ O ₈	50	200
Cadmium	20		bcl	bcl
Calcium	0.05%		1%	0.05%
Chromium	10		100	100
Cobalt	10		100	1000
Copper	1		1000	200
Gallium	2		70	20
Germanium	20		bcl	bcl
Iron	0.05%		5%	1%
Lead	5		>5000	2000
Magnesium	0.02%	SAMPLE 312 assayed 1.61% U ₃ O ₈	2%	0.2%
Manganese	5		5000	50
Molybdenum	10		500	500
Nickel	5		500	500
Niobium	50		bcl	bcl
Silver	1		5	5
Strontium	20		20	bcl
Tantalum	200		bcl	bcl
Tellurium	200		bcl	bcl
Thorium	100		bcl	bcl
Tin	10		bcl	bcl
Titanium	5		5000	5000
Vanadium	10		100	50
Zinc	50		bcl	bcl
Zirconium	20		200	500

Concentration Range

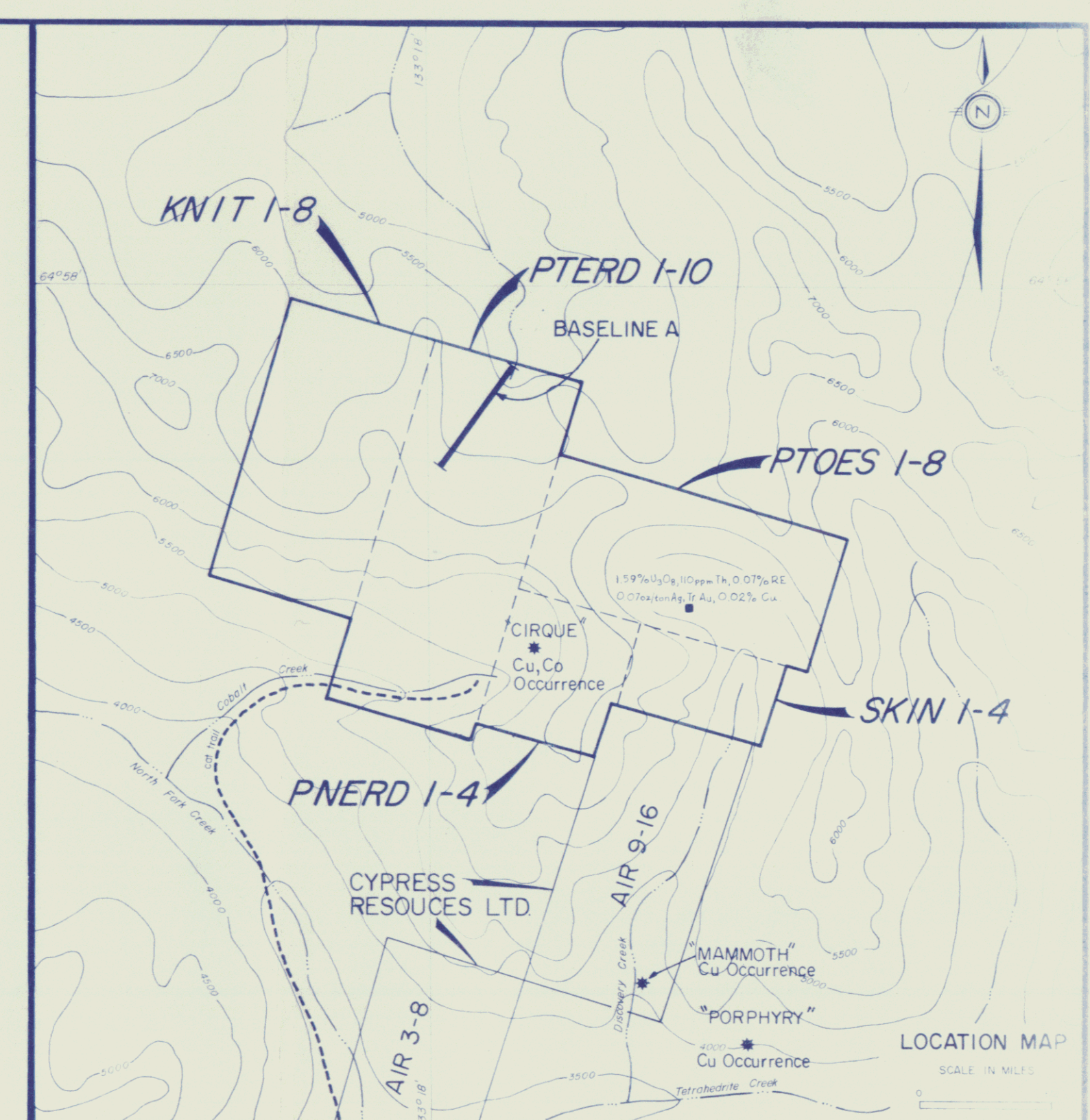
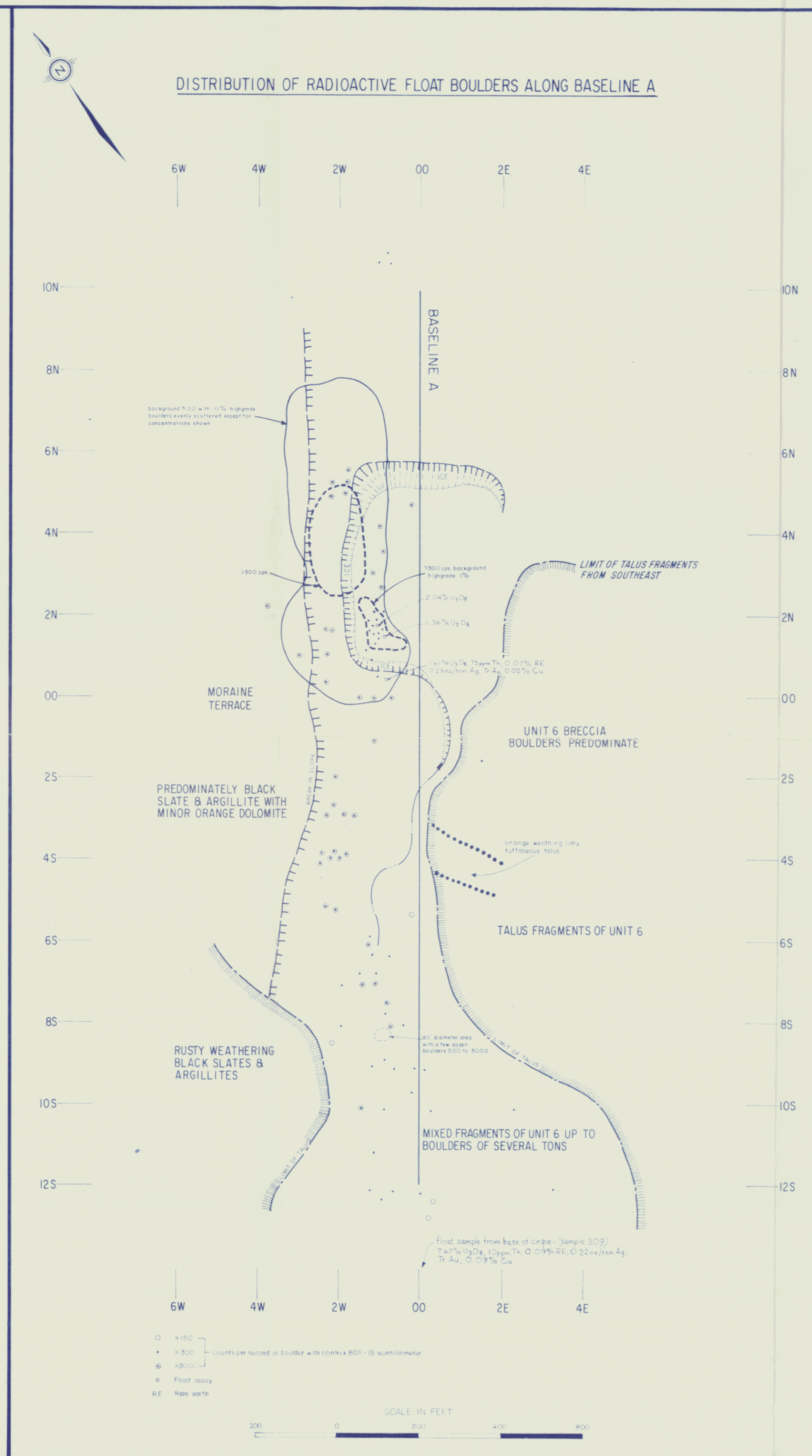
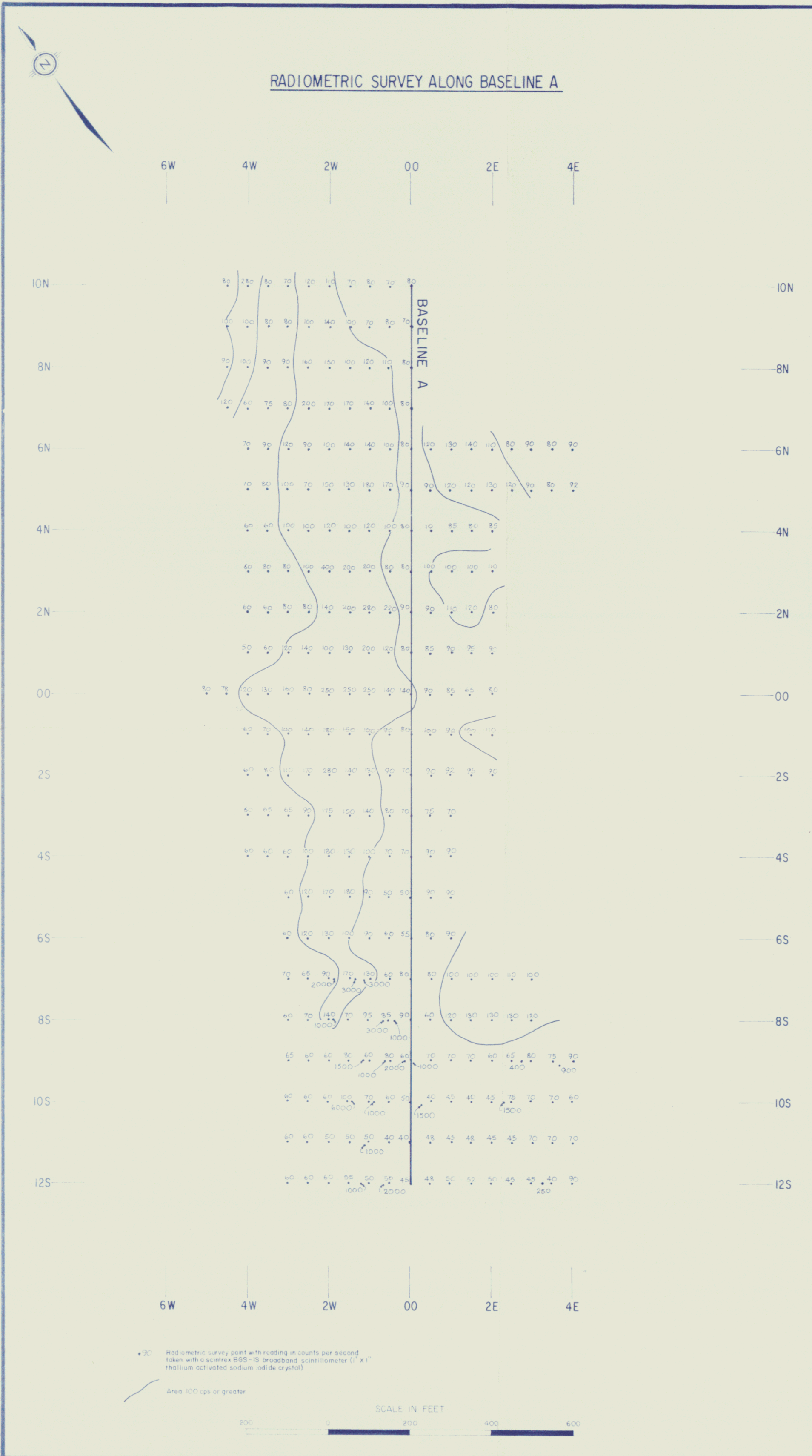
>5000 ppm => 5000 ppm	50 ppm = 25-100 ppm
5000 ppm = 2500-10000 ppm	20 ppm = 10-50 ppm
2000 ppm = 1000-4000 ppm	10 ppm = 5-20 ppm
1000 ppm = 500-2000 ppm	5 ppm = 2-10 ppm
500 ppm = 250-1000 ppm	2 ppm = 1-4 ppm
200 ppm = 100-400 ppm	1 ppm = 0.5-2 ppm
100 ppm = 50-200 ppm	bcl = below concentration limit

Ranges for Iron, Calcium & Magnesium are reported in %



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *[Signature]*



GEOLOGY		LEGEND	
7	PRECAMBRIAN UNIT 7 DOLOMITE Orange weathering dolomite and argillite	○	Limit of outcrop
7a	Grey to brown multibedded argillaceous dolomite and argillite	●	Limit of debris covered gopher
7b	Black slate and argillite	⊙	Approximate boundary of radioactive float occurrence
6	UNIT 6 BRECCIA Grey to tan resistant weathering coarse breccia fragments are predominantly turbiditic metabasites with silty matrix	—	Moraine terrace
3	UNIT 3 METAVOLCANICS Tan weathering turbiditic metabasite interbedded with silty matrix	- - -	Geological boundary - approximate
3d	Grey to black fine siltstone and argillite	⋈	Fault - defined, assumed
3e?	Orange weathering very tuftaceous breccia	~	Bedding - approximate, moderate dip

FIG P1
ARCHER, CATHRO & ASSOCIATES LTD.
GEOLOGY & RADIOMETRIC SURVEY
PTERD OCCURRENCE
PTERD 1-10, PNERD 1-4, PTOES 1-8, KNIT 1-8, SKIN 1-4
WERNECKE JOINT VENTURE