Report on Geophysical Survey

McCart Township Property

Porcupine Mining Division, Ontario

January, 1991

Kimberly M. Cunnison
Geologist

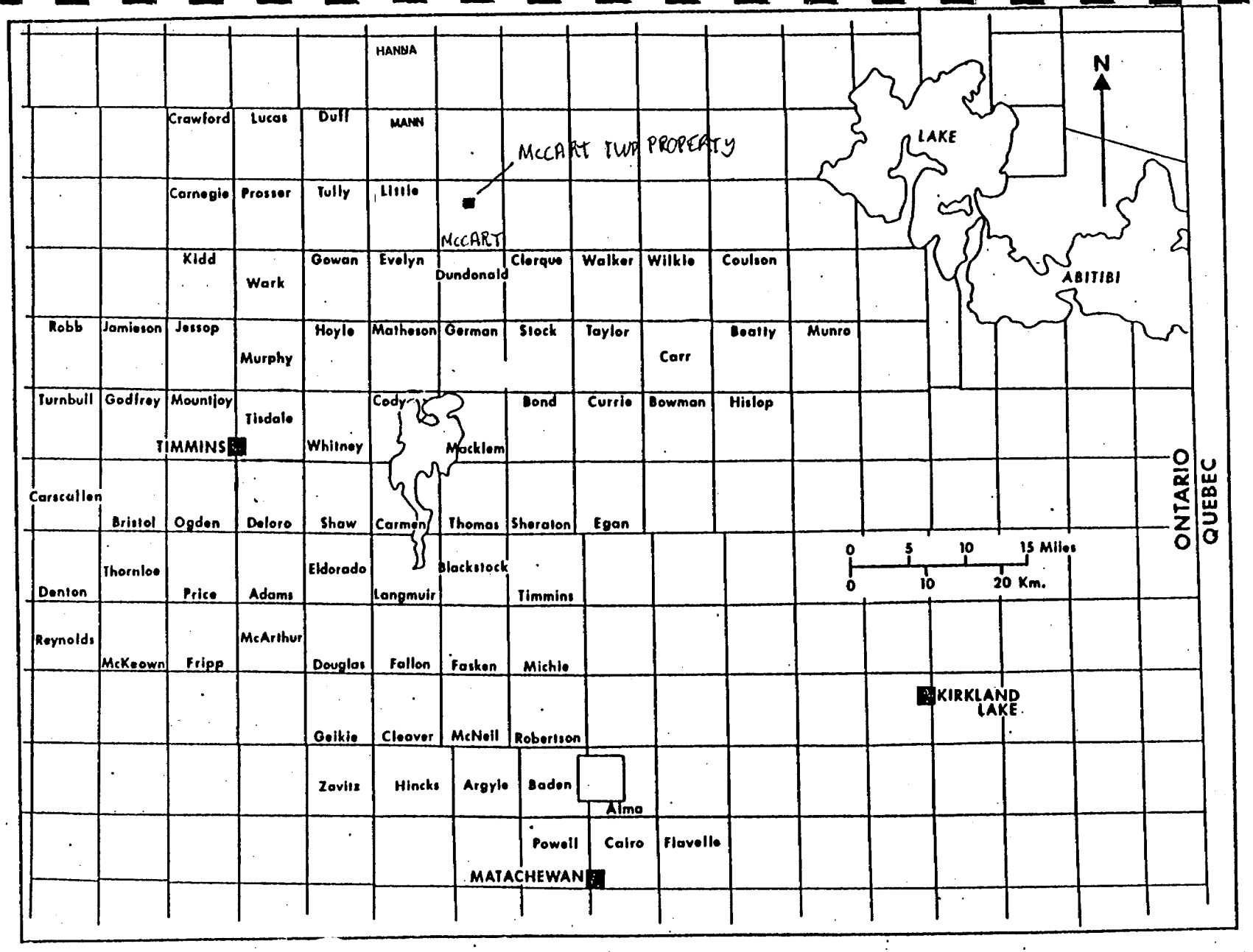
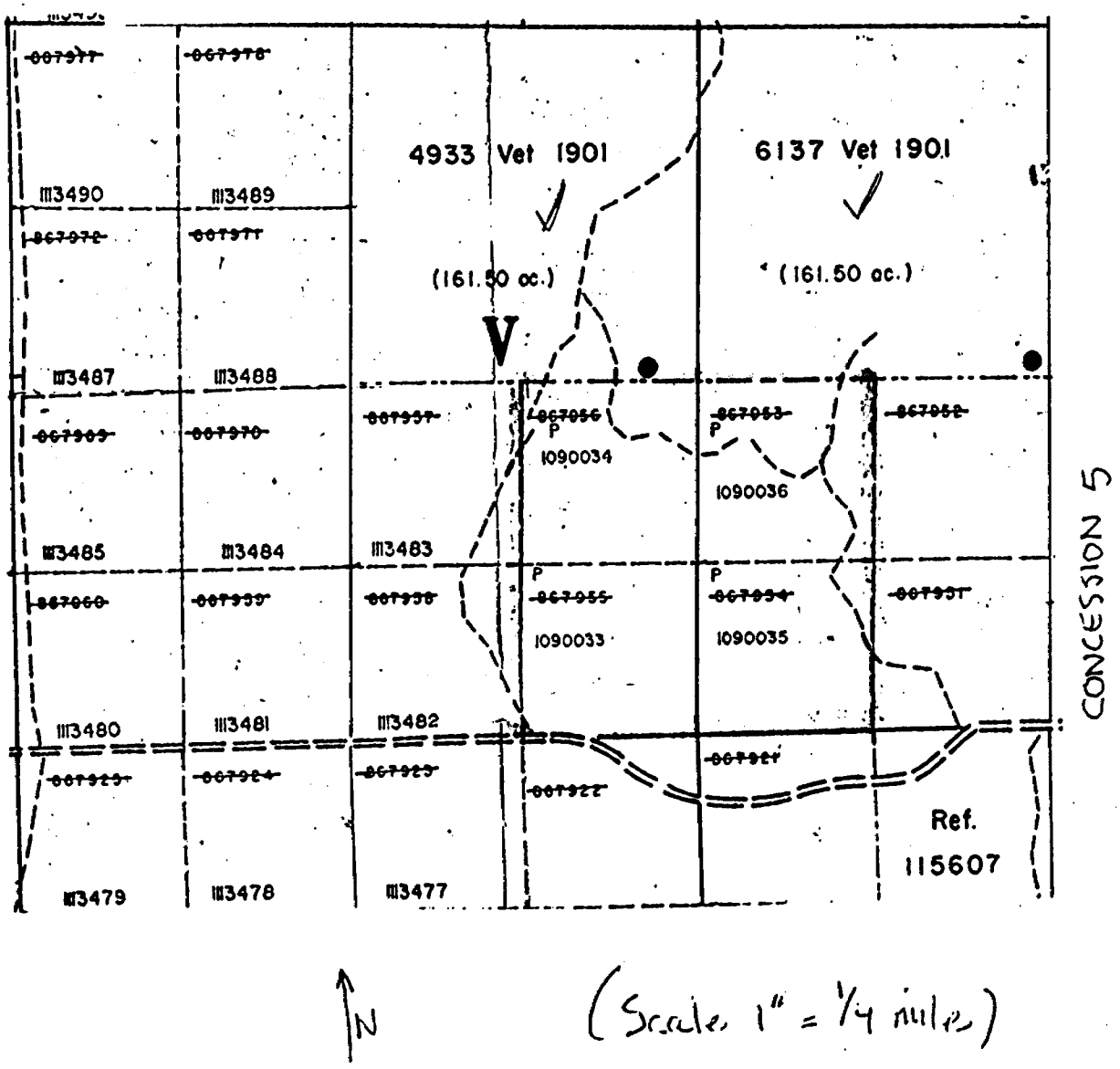


Figure 1 : Location of the McCart Township Property

FIGURE 2. CLAIM SKETCH OF THE McCART TOWNSHIP CLAIM GROUP, WITH CLAIM NUMBERS



PROPERTY DESCRIPTION

The property is located approximately 30 miles northeast of the city of Timmins in the Porcupine Mining Division (Figure 1). It consists of four contiguous claims located in Lots 6 and 7, Concession 5, in McCart Township. The claim numbers and locations are as follows (see Figure 2):

P 1090033	Southeast ¼,	South ½,	Lot 7,	Conc. 5
P 1090034	Northeast ¼,	South ½,	Lot 7,	Conc. 5
P 1090035	Southwest ¼,	South ½,	Lot 6,	Conc. 5
P 1090036	Northwest ¼,	South ½,	Lot 6,	Conc. 5

Kimberly M. Cunnison is the sole recorded owner of the above - mentioned claims in McCart Township.

The claims are located near the southeast end of a large gabbroic - ultramafic complex that extends approximately 15 miles to the northwest. To date, exploration work within the region has largely been confined to the northwest portion of the complex where some interesting yet sub-economic nickel - copper values and anomalous platinum and palladium values are reported from diamond drilling (Shklanka, 1969). Here, at the Zevely Prospect in Mann Township, nickel-copper assays are reported from a 72' wide zone occurring at an intrusive peridotite - volcanic contact. Locally, up to 5' sections

contained 15% sulphides (pyrrhotite and chalcopyrite) that assayed as high as 6.6% copper and 5.5% nickel with locally anomalous platinum values (0.05 oz./ton).

Very little exploration work has been done on the present McCart Township claim group, located in the southwest portion of the complex. No detailed geological mapping has ever been carried out, even though there is extensive outcrop on the property. The only existing geological map for the area is a 1956 compilation map at a scale of one inch to one-quarter mile (Map P. 16, Ontario Dept. of Mines).

Assessment work recorded for the McCart Claim Group is minimal. In 1957, Geo-Technical Development Company Ltd. conducted magnetic and resistivity surveys. One diamond drill hole has been drilled on the property by Union Mining Corporation, in 1961, which intersected peridotite, mafic flows and graphitic argillite. A 1917 Ontario Bureau of Mines report (Baker, 1917) refers to a small nickel - copper showing on the boundary of Lots 6 and 7, in the southern portion of the claim group. The showing apparently occurs at or near an intrusive peridotite - volcanic contact, and consists of disseminated pyrrhotite containing nickel, and small stringers of massive sulphide, assaying as high as 3% nickel in grab samples. Baker (1917) and Naldrett (1967) have suggested that the stratigraphic setting and location of mineralization within the stratigraphy on the McCart Township property is very similar to that occurring at the

past producing Alexo Nickel Mine in Dundonald Township, located approximately ten miles to the south.

The recently released OGS airborne survey of the Timmins area (O.G.S, 1988) indicates that there are at least two untested airborne conductors within the claim group area.

Present Surveys, Results and Recommendations

North-south grid lines were cut at 100 meter intervals with an east-west baseline just north of the dirt access road. A tieline was also cut across the top of the claim group.

The VLF em. survey was conducted with a Phoenix VLF-2 receiver tuned to NAA transmitting at 24.0 Khz from Cutler, Maine. The VLF-2 receiver measures the in-phase component of the secondary vertical field to an accuracy of about 2% of the primary field. Readings were taken at 25 meter intervals on the north-south lines. The location of the axis of the conductors are as shown on the enclosed map.

E.M. Survey

V.L.F. Anomalies are attributed to distortions in the primary magnetic field generated by the transmitting stations. These distortions are caused by the conductive properties of subsurface and surface elements within the area being surveyed. In this fashil, anomalies are generally caused by conductive rocks, clays in the soil, or power lines.

The map submitted shows the V.L.F. in phase response and the resulting "Frazer Filter" plot of the same data.

A moderately strong E.M. anomaly appears to trend westerly accross the claim group. Prospecting of the pits occuring within the anomalous area shows that several feet of schistose graphitic material bearing nodular pyrite occur in this zone, thus explaining the anomaly. Offset of the main anomaly in the vicinity of Line 2E, 5N suggests that a cross fault structure

traverses the property. Further, a set of northwest trending much weaker anomalies occur, and appear to merge with the main conductor. In outcrop, several moderately mineralized trenches occur within the serpentinite in this area, perhaps suggesting that these anomalies are mineralized structures within the intrusive peridotite.

Magnetometer Survey

Proton procession magnetometers measure the intensity of the magnetic field at each individual station. The strength of this field is proportioned to the amount of the magnetic minerals in the underlying rock, these minerals being chiefly magnetite or pyrrhotite. Overburden tends to mask the intensity of the magnetic field.

Further discussions on earth magnetic fields and the operating principles of the proton procession magnetometer can be found in any geophysical text.

A proton procession magnetic survey was conducted on cut grid lines spaced at 100 meter intervals. Magnetic readings were taken at 12.5 meter intervals along the lines. Diurnal corrections were made to the data from a magnetic base station off the property in the standard fashion.

The enclosed magnetics map outlines two zones of magnetic high, corresponding to the contact between intrusive peridotite and komatiitic volcanics occuring across the western portion of the property, trending in a north, northwesterly direction, and a similar zone of of magnetic high trending easterly to northeasterly across the northern portion of the property.

The two zones of magnetic high correspond to intrusive peridotite -volcanic contacts, with the komatiitic volcanics being effectively enclosed the the peridotite to the north and south.
Observed displacements along these magnetic trends are interpreted here as northwesterly trending cross-faults. The possible ecominic significance of these faults has not yet been determined.
A vague, broad zone of low magnetics trending northeasterly and occurring below the northerly magnetic high corresponds well to the moderately carbonatized and albitized, and locally sheared nature of the graphitic contact ocurring in this area with the peridotite. Extensive carbonate alteration of the peridotite in this area would likely lead to breakdown of magnetite and substatial loss of magnetics along this zone.

Recommendations

Further prospecting and trenching along the altered sheared volcanic-intrusive contact, in particular where possible cross faults traverse this zone, appears to be warranted.

REFERENCES

Baker, 1917, in Ontario Bureau of Mines, vol. XXVI, No, 4, page 271

Naldrett, A.J., 1966. The Role of Sulfurization in the Genesis of Iron-Nickel Sulfide Deposits of the Porcupine District, Ontario. CIMM Bull. V. 59, No 648, p 45-63.

Ontario Geological Survey, 1988. Airborne Electromagnetic and Total Intensity Survey. Map 81058 Scale 1:20,000

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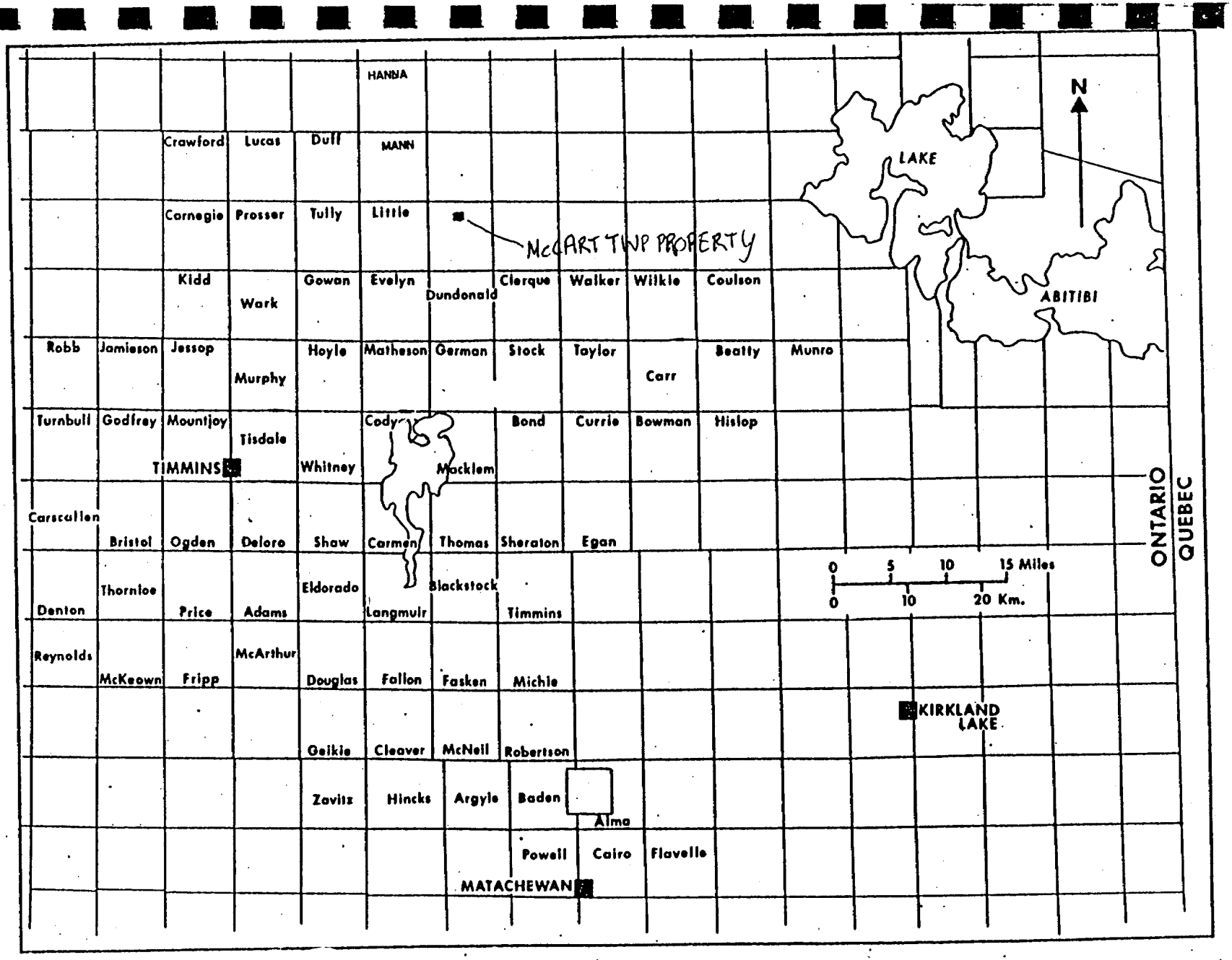

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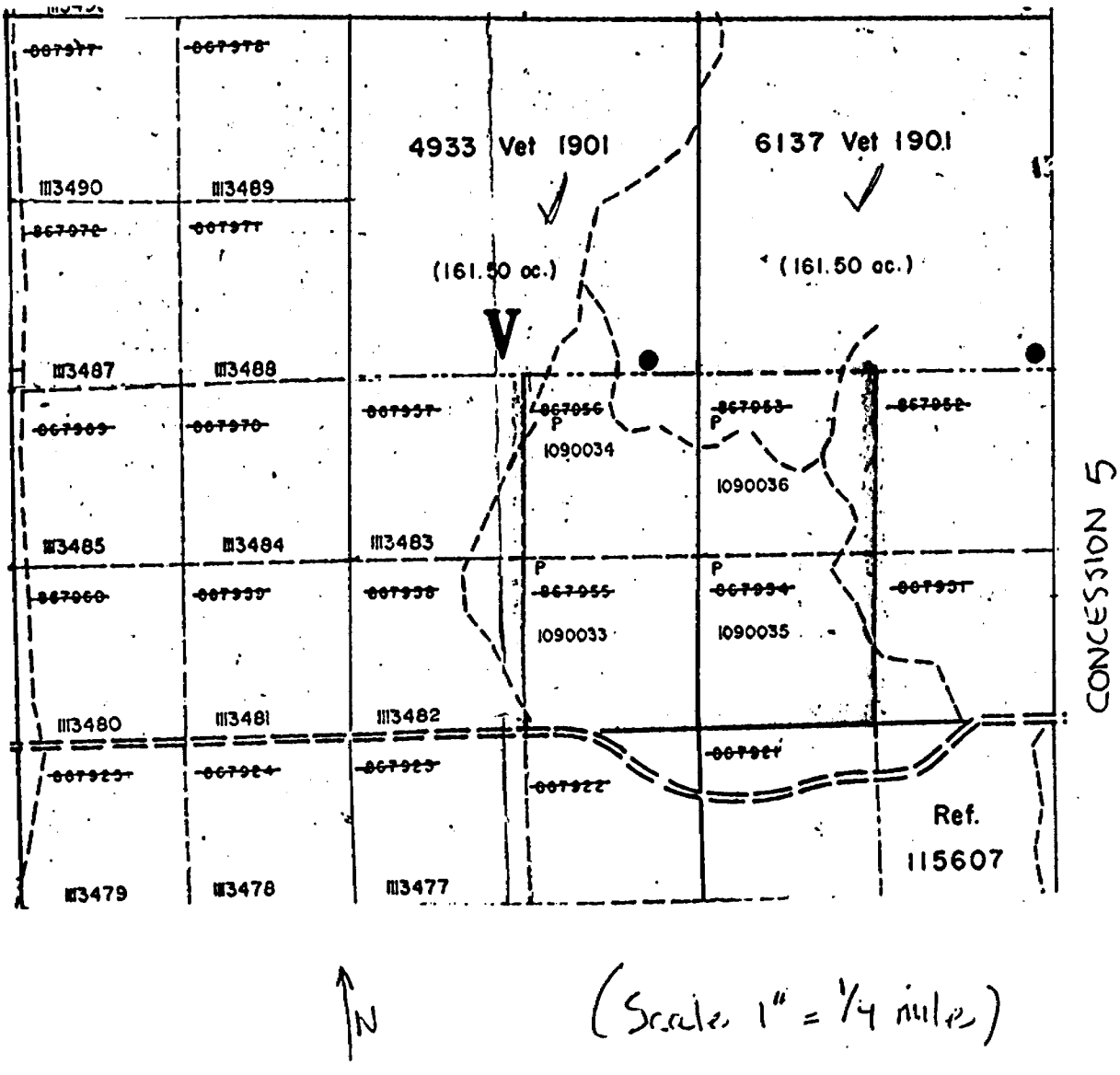

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past producing Alexo Nickel Mine in Dundonald Township, located approximately ten miles to the south.

The recently released OGS airborne survey of the Timmins area (O.G.S, 1988) indicates that there are at least two untested airborne conductors within the claim group area.

Present Survey

Geological mapping was carried out on cut grid lines spaced at 100 meters. The survey was conducted intermittently during the fall of 1990.

The property is underlain to the north and south by intrusive peridotite. A sequence of pillowed to massive basaltic komatiites trend northeasterly accross the property. The northern contact of the basaltic komatiites and the peridotite has been heavily trenched in the past. Mapping and sampling of the trenched areas in and around the sheared contact zone indicates the the pyroxenitic southerly phase of the intrusion has undergone quite intense alteration - carbonatizatiion and albitization, as indicated by the very substantial amounts of sodium present in a clearly komatiitic rock.

A zone of intensely sheared, graphitic metasediment occurs immediately south of the altered peridotite contact. Weakly anomalous gold values were obtained from the graphitic argillite and the surrounding altered intrusive.

Nickel mineralization on the property appears largely to occur within weak sheared zones in the peridotite north of the intrusive-volcanic contact.

It is recommended that detailed mapping be undertaken in the spring of 1991, particularly to investigate the gold potential of the altered, sheared contact area.

REFERENCES

Baker, 1917, in Ontario Bureau of Mines, vol. XXVI, No, 4, page 271

Naldrett, A.J., 1966. The Role of Sulfurization in the Genesis of Iron-Nickel Sulfide Deposits of the Porcupine District, Ontario. CIMM Bull. V. 59, No 648, p 45-63.

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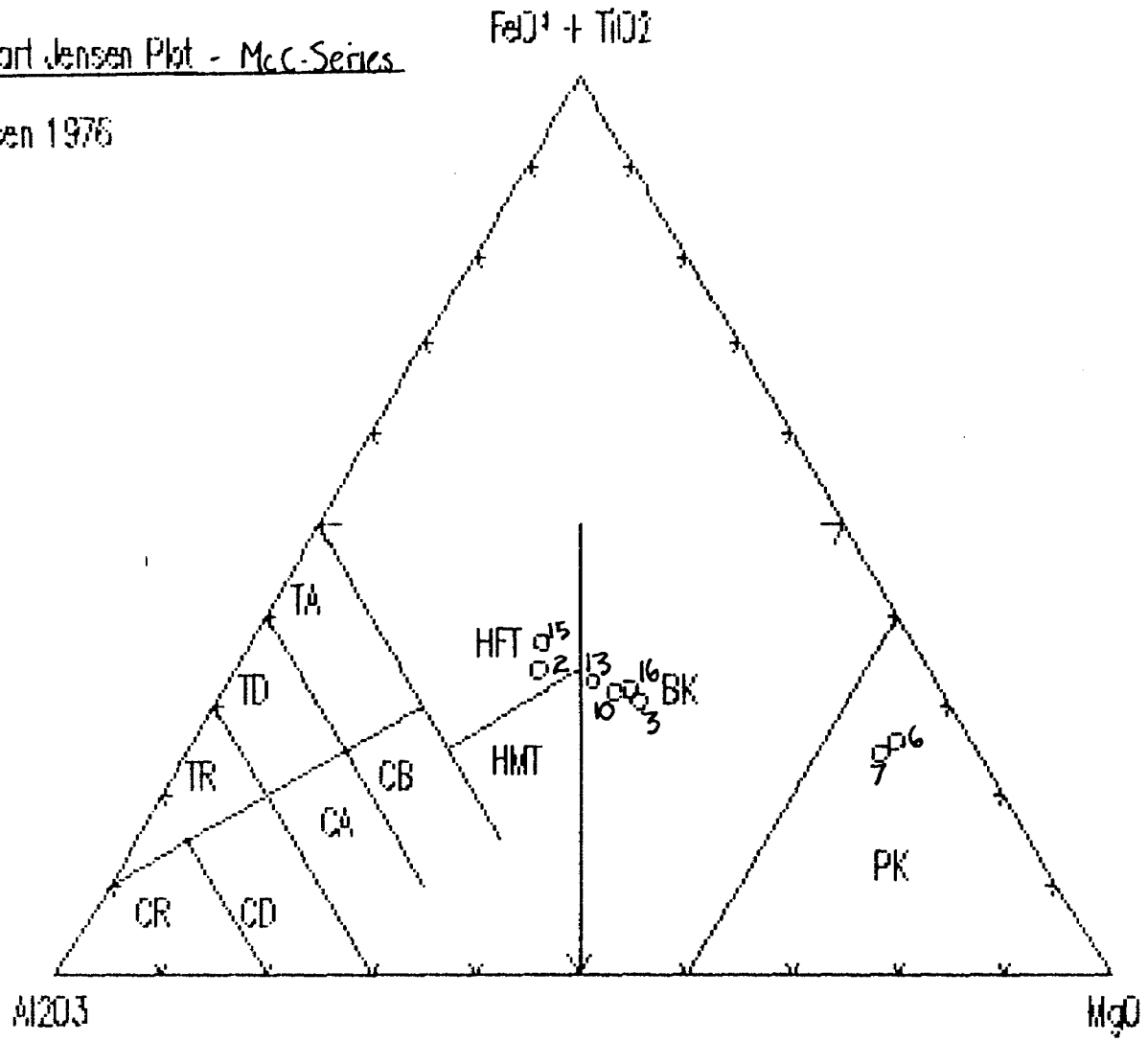
Shklank, R. (editor). 1969. Copper, Nickel, Lead and Zinc Deposits of Ontario. Mineral Resources Circ. # 12, ODM, p. 124

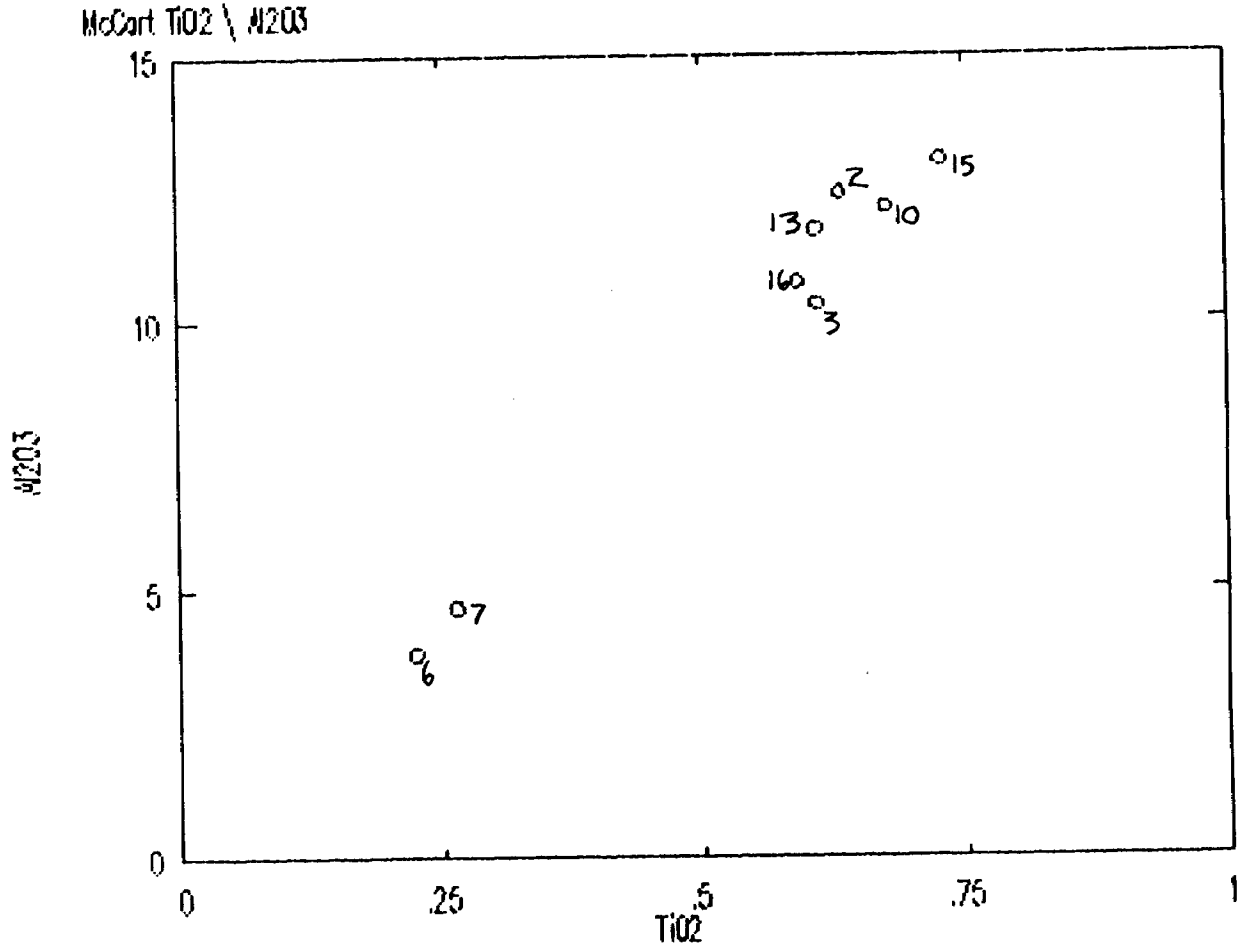
McCart Jensen Plot - Mcc-Series

Jensen 1976



McCART TOWNSHIP PROPERTY - McC SERIES

Al_2O_3 vs. TiO_2 Plot



SAMPLE \ %	SIO2	AL203	CAO	MGO	NA2O	K2O	FE203	MNO	TIO2	P2O5	CR203	LOI	SUM
MCC-2	51.0	11.9	7.79	9.34	3.43	0.42	11.5	0.20	0.61	0.05	0.07	4.00	100.3
MCC-3	48.7	9.75	8.93	13.4	1.66	0.83	10.7	0.19	0.58	0.05	0.16	3.93	98.9
MCC-6	37.8	3.38	3.10	30.7	0.11	0.05	13.1	0.18	0.20	0.02	0.31	10.3	99.3
MCC-7	38.9	4.05	3.22	28.4	0.07	0.05	11.6	0.18	0.23	0.03	0.24	10.0	97.0
MCC-10	39.5	10.0	7.13	12.1	1.87	0.54	10.7	0.16	0.56	0.05	0.17	9.93	92.8
MCC-13	48.0	11.1	10.2	11.9	0.84	0.27	11.8	0.20	0.58	0.05	0.14	4.16	99.3
MCC-15	46.3	12.3	9.82	9.79	1.27	0.34	13.7	0.23	0.69	0.06	0.07	4.39	99.0
MCC-16	48.8	10.1	7.99	13.3	1.11	0.76	11.6	0.21	0.56	0.05	0.15	4.16	98.8
28004	77.3	8.79	0.80	1.01	1.97	1.24	5.67	0.10	0.22	0.04	---	2.77	100.0

XRF W.R.A. SUMS INCLUDE ALL ELEMENTS DETERMINED. FOR SUMMATION, ELEMENTS ARE CALCULATED AS OXIDES

SAMPLE \ PPM	RB	SR	Y	ZR	NB	BA
MCC-2	17	38	<10	55	10	120
MCC-3	25	78	<10	31	23	363
MCC-6	12	<10	<10	31	16	28
MCC-7	<10	11	17	<10	<10	49
MCC-10	37	310	<10	16	13	172
MCC-13	12	108	<10	35	<10	168
MCC-15	<10	87	24	34	10	123
MCC-16	45	15	<10	28	22	344
28004	49	37	65	297	20	312

SAMPLE	HF PPM	TA PPM	W PPM	PB PPM	TH PPM	U PPM	PT-1AT PPB	PD-1AT PPB
MCC-1	..	..	..	..	..	..	<10	<1
MCC-2	..	..	..	..	..	..	..	..
MCC-3	..	..	..	..	..	..	..	..
MCC-4	..	..	..	..	..	..	<10	1
MCC-5	..	..	..	..	..	..	10	20
MCC-6	..	..	..	..	..	..	10	18
MCC-7	..	..	..	..	..	..	<10	13
MCC-8	..	..	..	..	..	..	<10	13
MCC-9	..	..	..	..	..	..	<10	2
MCC-10	..	..	..	..	..	..	10	12

PT-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT
PD-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	HF PPM	TA PPM	W PPM	PB PPM	TH PPM	U PPM	PT-1AT PPB	PD-1AT PPB
MCC-11	--	--	--	--	--	--	10	14
MCC-12	--	--	--	--	--	--	<10	8
MCC-13	--	--	--	--	--	--	--	--
MCC-15	--	--	--	--	--	--	--	--
MCC-16	--	--	--	--	--	--	--	--
MCC-18	--	--	--	--	--	--	10	31
MCC-19	--	--	--	--	--	--	10	26
MCC-20	--	--	--	--	--	--	10	38
MCC-21	--	--	--	--	--	--	<10	14
MCC-22	--	--	--	--	--	--	10	21
MCC-23	--	--	--	--	--	--	<10	12
MCC-24	--	--	--	--	--	--	<10	20
MCC-25	--	--	--	--	--	--	<10	14

PT-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT
PD-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU PPB	AU-1AT PPB	BE PPM	B PPM	SC PPM	TI PPM	V PPM	CR PPM	CO PPM
MCC-1	--	<1	--	--	--	--	--	--	--
MCC-2	--	--	--	--	--	--	--	--	--
MCC-3	--	--	--	--	--	--	--	--	--
MCC-4	--	<1	--	--	--	--	--	--	--
MCC-5	--	<1	--	--	--	--	--	--	--
MCC-6	--	<1	--	--	--	--	--	--	--
MCC-7	--	<1	--	--	--	--	--	--	--
MCC-8	--	<1	--	--	--	--	--	--	--
MCC-9	--	21	--	--	--	--	--	--	--
MCC-10	--	<1	--	--	--	--	--	--	--

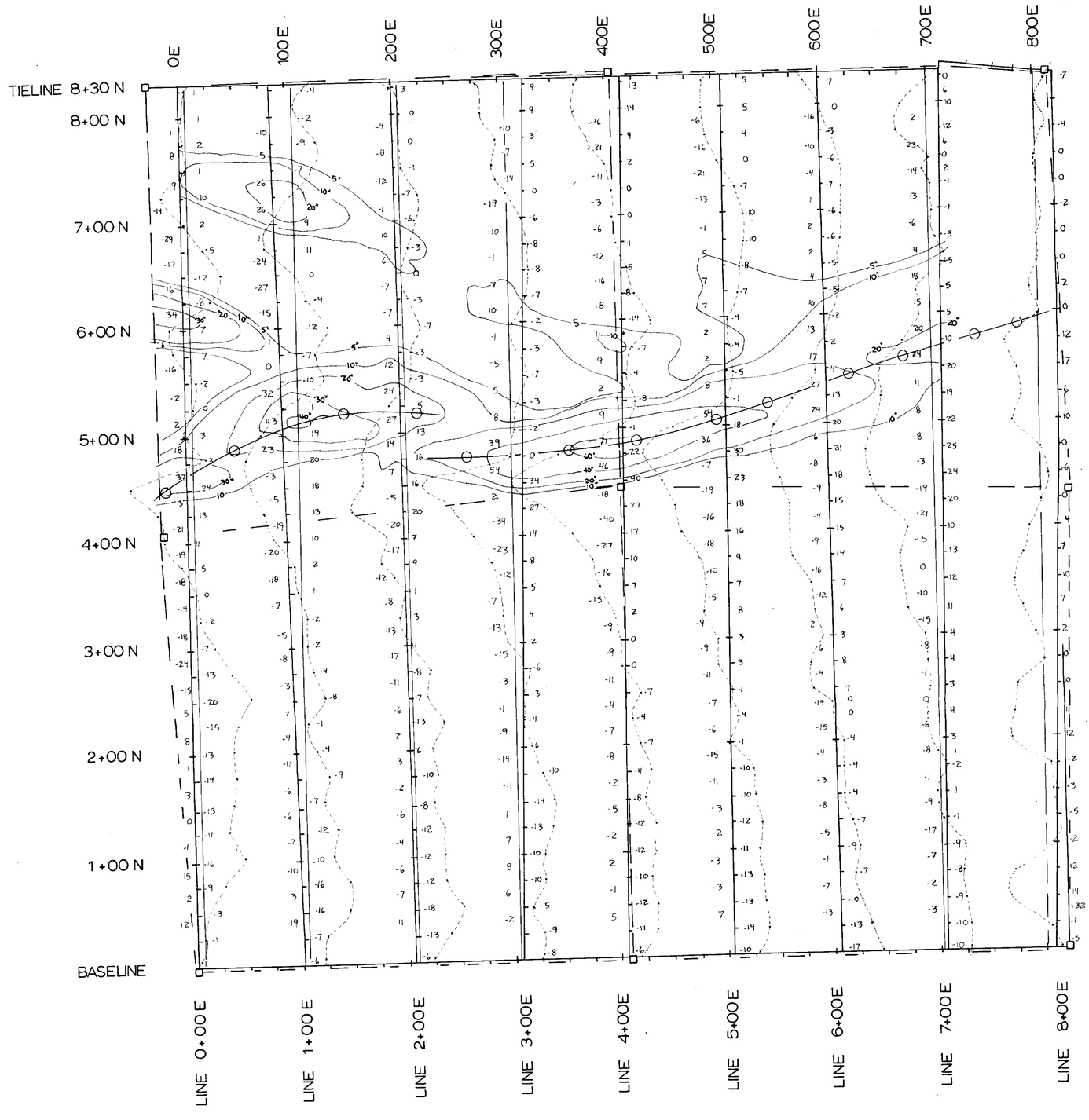
AU-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU PPB	AU-1AT PPB	BE PPM	B PPM	SC PPM	TI PPM	V PPM	CR PPM	CO PPM
MCC-11	--	2	--	--	--	--	--	--	--
MCC-12	--	<1	--	--	--	--	--	--	--
MCC-13	--	--	--	--	--	--	--	--	--
MCC-15	--	--	--	--	--	--	--	--	--
MCC-16	--	--	--	--	--	--	--	--	--
MCC-18	--	8	--	--	--	--	--	--	--
MCC-19	--	5	--	--	--	--	--	--	--
MCC-20	--	<1	--	--	--	--	--	--	--
MCC-21	--	4	--	--	--	--	--	--	--
MCC-22	--	<1	--	--	--	--	--	--	--
MCC-23	--	23	--	--	--	--	--	--	--
MCC-24	--	8	--	--	--	--	--	--	--
MCC-25	--	12	--	--	--	--	--	--	--

AU-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	NI PPM	NI PPM	NI PPM	CU PPM	CU PPM	CU PPM	ZN PPM	ZN PPM	GE PPM
MCC-1	--	--	--	--	--	--	--	--	--
MCC-2	--	--	113	--	--	82	--	--	--
MCC-3	--	--	319	--	--	113	--	--	--
MCC-4	2480	--	--	5.3	--	--	--	--	--
MCC-5	1320	--	--	124.	--	--	--	--	--
MCC-6	--	--	960	--	--	109	--	--	--
MCC-7	--	--	882	--	--	28	--	--	--
MCC-8	853	--	--	31.8	--	--	--	--	--
MCC-9	84	--	--	105.	--	--	--	--	--
MCC-10	--	--	319	--	--	70	--	--	--

SAMPLE	NI PPM	NI PPM	NI PPM	CU PPM	CU PPM	CU PPM	ZN PPM	ZN PPM	GE PPM
MCC-11	345	--	--	85.4	--	--	--	--	--
MCC-12	629	--	--	28.6	--	--	--	--	--
MCC-13	--	--	318	--	--	67	--	--	--
MCC-15	--	--	300	--	--	81	--	--	--
MCC-16	--	--	119	--	--	61	--	--	--
MCC-18	3260	--	--	310.	--	--	--	--	--
MCC-19	3200	--	--	223.	--	--	--	--	--
MCC-20	4130	--	--	306.	--	--	--	--	--
MCC-21	2570	--	--	235.	--	--	--	--	--
MCC-22	1430	--	--	88.1	--	--	--	--	--
MCC-23	3100	--	--	605.	--	--	--	--	--
MCC-24	2600	--	--	359.	--	--	--	--	--
MCC-25	2360	--	--	415.	--	--	--	--	--



ANOMALY

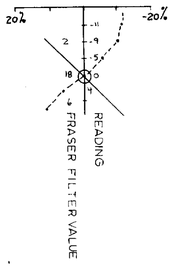
20 FRASER FILTER CONTOUR

INSTRUMENT : PHOENIX VLF-2

TRANSMITTER STATION : CUTLER MAINE

FREQUENCY : 24.0 kHZ

PROFILE SCALE : 1 cm = 10 degrees

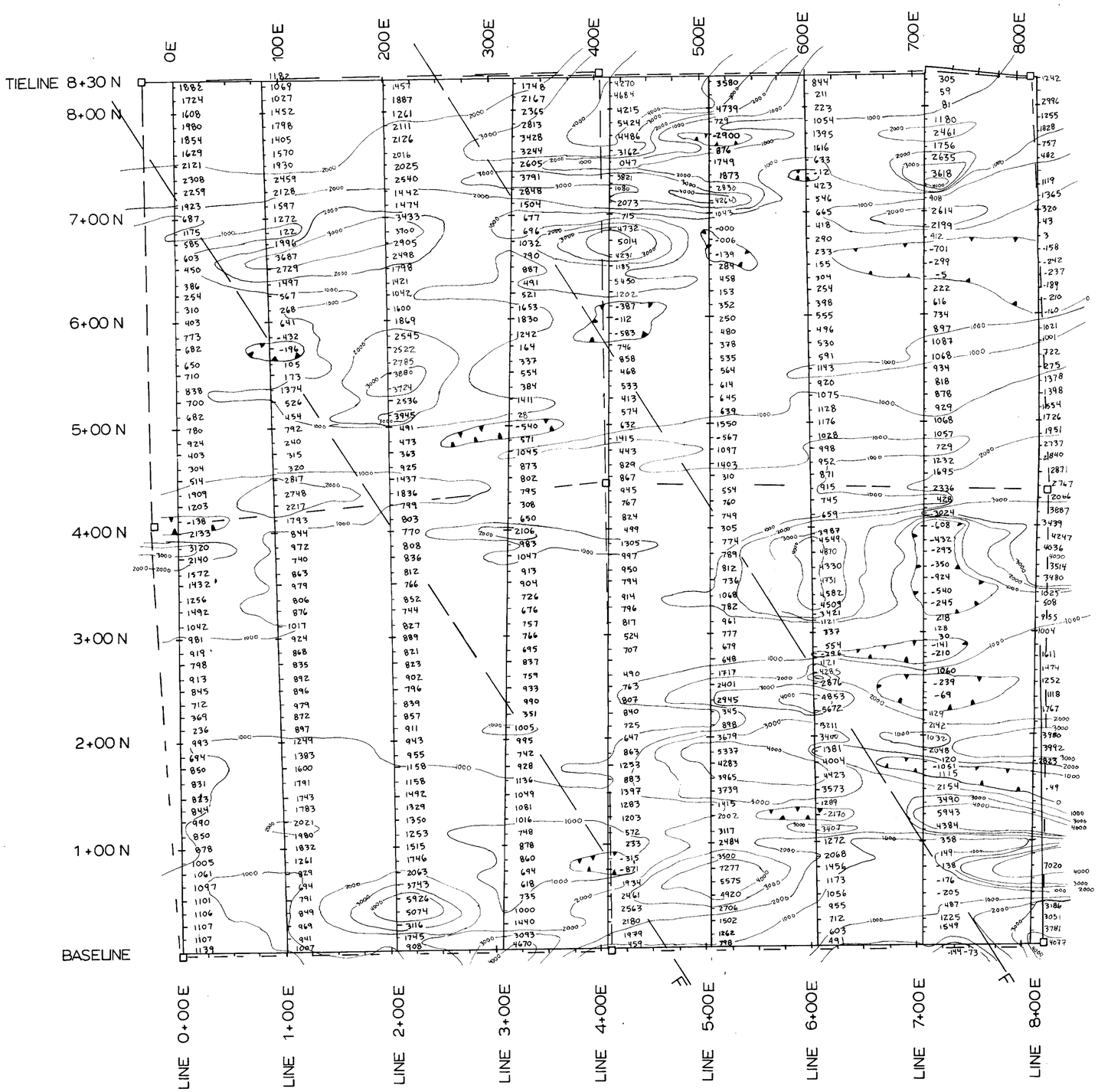


N

VLF SURVEY

McCART TOWNSHIP PROPERTY

SCALE : 1:2500	DATE : DECEMBER, 1990
SURVEY BY: K. M. CUNNISON	



TYPE: TOTAL FIELD PROTON PRECESSION

CONTOUR INTERVAL : 1000 gammas

DATUM LEVEL : 57000 gammas

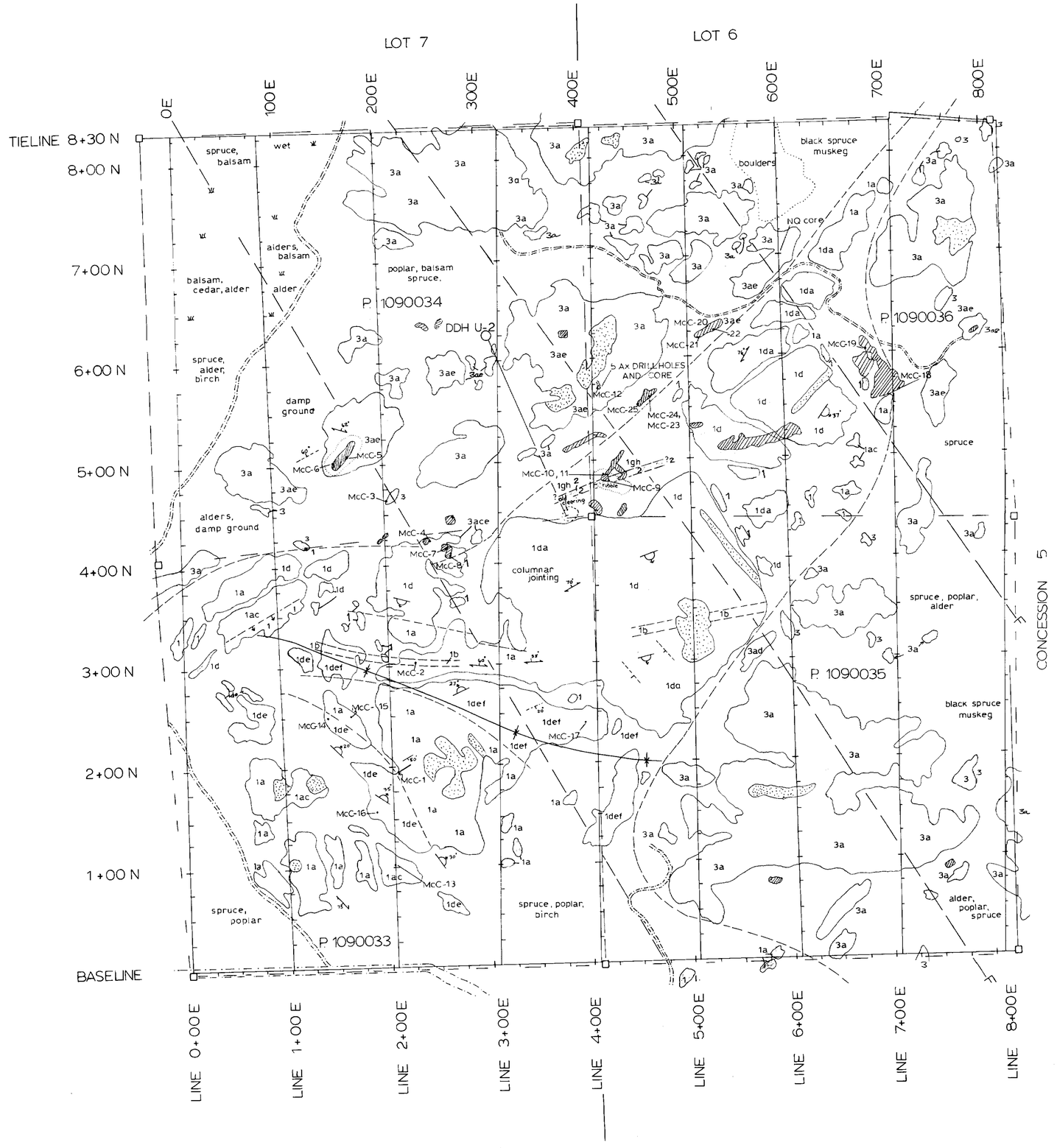
K. Cunnison

MAGNETIC SURVEY

McCART TOWNSHIP PROPERTY

SCALE : 1:2500	DATE : DECEMBER, 1990
SURVEY BY: K. M. CUNNISON	

63 5888



LEGEND

LITHOLOGIC UNITS ARCHEAN

1 Komatiitic Metavolcanics
- a massive, fine-medium grained
- b pyroxene, spinifex bearing
- c polysutured
- d pillowed
- e variolitic
- f bearing dark green actinolite ball structures
- g bleached, ankeritized
- h pyritized
- i strongly foliated

2 Graphitic metasediments with nodules of pyrite

3 Ultramafic Intrusive Rocks
- a olivine peridotite (serpentinized)
- b pyroxenitic phase
- c bleached, ankeritized
- d pyritized
- e pyrrhotite-bearing

SYMBOLS

- Area of outcrop
- Geologic contact
- Strike & Dip of foliation
- Strike & Dip of fracture cleavage
- Strike & Dip of joints
- Elongation & top direction of pillows
- Quartz vein
- Trench, pit
- Area of dence spruce
- .McC Sample location
- Diamond drill hole
- F Fault (from magnetics)
- Fold Axis
- Claim Post
- Old dirt bush road
- Wet, swampy ground

N

K. Cunnison

GEOLOGICAL SURVEY

McCART TOWNSHIP PROPERTY

SCALE: 1:2500	DATE: DECEMBER, 1990
SURVEY BY: K. M. CUNNISON	