81-#940.-9723.

A&M exploration ltd.
GEOLOGY · GEOPHYSICS
MINING ENGINEERING
4570 HOSKINS ROAD, NORTH VANCOUVER, B.C.
TELEPHONE (604) 985-7921 V7K 2R1

GEOLOGICAL, GEOPHYSICAL & GEOCHEMICAL REPORT

on the

SOUTH UNUK RIVER PROPERTY

SKEENA MINING DIVISION

Lat. 56° 27' Long. 130° 00'

NTS 104B/7,8

for

TSOLUM RESOURCES LTD.

9723

by

D. G. Allen P. Eng.

and

D. R. MacQuarrie

September, 1981 North Vancouver, B.C.

TABLE OF CONTENTS

TABLE

ILLUSTRATIONS

TABLE OF CONTENTS (cont.)

ILLUSTRATIONS (cont.)

APPENDIX

SUMMARY

Tsolum Resources Ltd. holds 2 claims, CHRIS I and ANNE (32 units) in the South Unuk River area of northwestern British Columbia. The claims cover skarn-type iron-copper showings in Coast Range Mountains 65 kilometres northwest of Stewart, B.C. The property lies about 3 kilometres east of Granduc's MAX deposit which is reported to contain 11 million tonnes of potentially mineable reserves of copper and iron.

The CHRIS-ANNE claims were staked by T. McQuillan and E. Huntley in 1980. Geological mapping, sampling and geophysical surveys were carried out by D.G. Allen and D.R. MacQuarrie in September 1981 and results of this work consititute the basis of this report.

The property area is underlain mainly by chloritized Takla Group volcaniclastic rocks - tuff, volcanic siltstone and sandstone. Limestone occurs in 1 to 3 beds up to 10 metres thick within the sequence. These beds locally contain magnetite-rich and pyrrhotite-rich layers containing minor amounts of garnet, diopside, chlorite and chalcopyrite. Beds of massive magnetite and pyrrhotite range in thickness from 0.5 to 7 metres and have been traced by geological mapping and geophysical surveys over a distance of 1000 metres. Grades range from 0.1 to 0.4% Cu.

The iron-copper showings were found to respond well to magnetic, VLF-EM and soil geochemical surveys.

CONCLUSION

Magnetite-pyrrhotite-chalcopyrite occurrences on the CHRIS and ANNE claims have been traced by geological mapping and geophysical surveys over a distance of more than 1000 metres. The occurrences have characteristics of both stratiform and skarn-type deposits. The great lateral continuity, association with limy beds in tuffaceous volcanic rocks, local presence of underlying siliceous tuff beds, and absence of intrusive rocks suggest comparison with stratiform deposits. The mineralogy (garnet, magnetite, lack of zinc sulfides and precious metals) and known nearby skarn deposits (the MAX deposit is a contact metasomatic deposit along a limestone-granodiorite contact) indicate a metsomatic origin i.e. they are skarn type deposits formed by selective replacement of limestone beds.

In spite of the low copper values obtained as a result of this examination, the prospect has two favorable features.

(1) Lateral continuity is extensive and widths are locally up to 7 metres - indicating that vertical continuity would also be good - it is possible that

  (a) more intense skarn development (and hence better grades) might occur at some depth, possibly closer to a source intrusion and

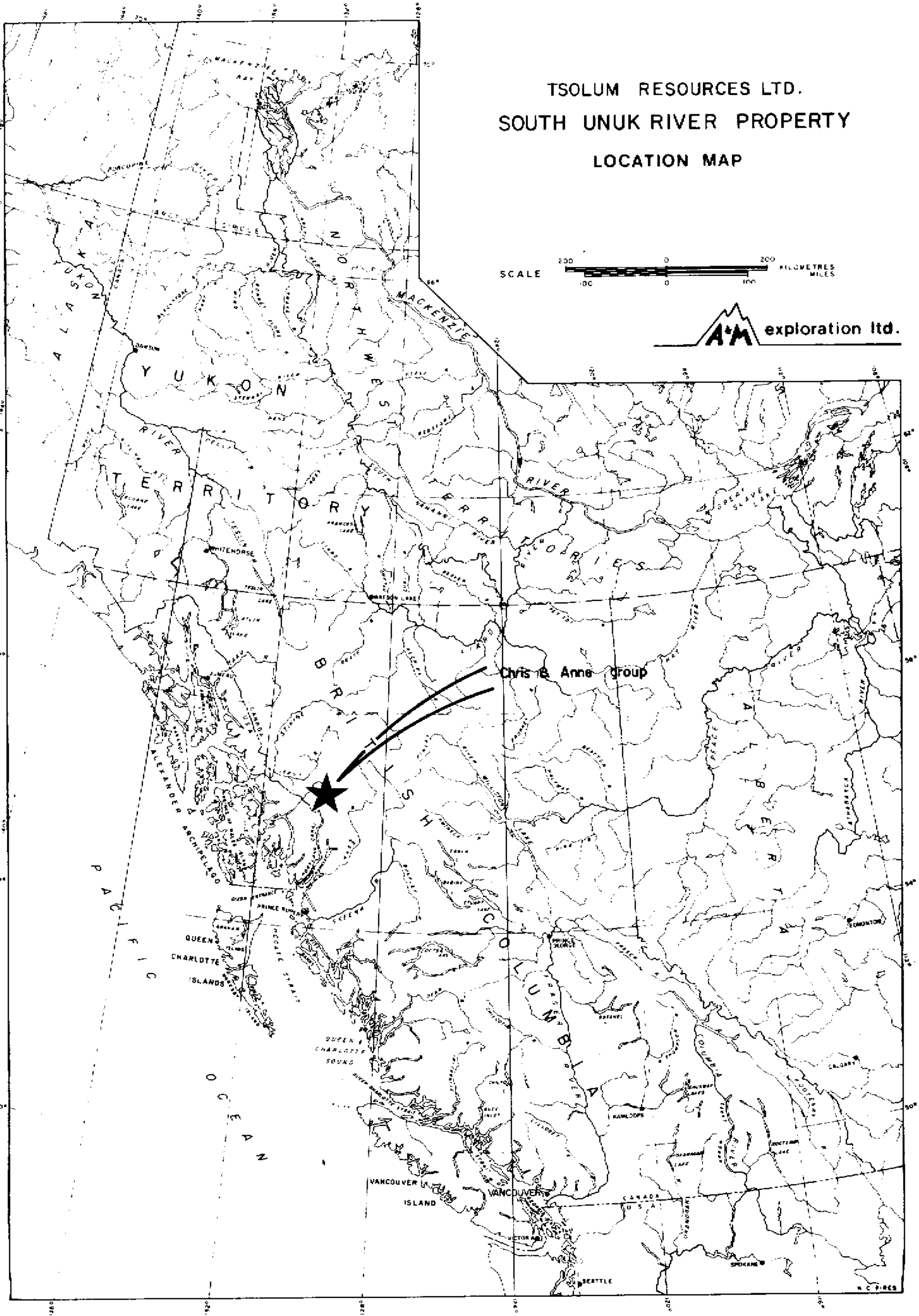
  (b) folding might locally thicken the limestone unit (as reported on the MAX property) and have created a structural environment for more complete skarn development.

(2) Some of the magnetite-rich units are weathered and oxidized, indicating that some of the copper may have been leached out - it is possible that copper values could approach those reported on the MAX property (± 1% Cu) in fresh rock.

Diamond drilling is warranted to test such possibilities.

RECOMMENDATION

Diamond drilling should be carried out in the vicinity of the thickest showings to test for possible more intensive or more complete skarn development at depth. Further mapping and geophysical surveys should be carried out along strike of the skarn horizons to the north and south.



TSOLUM RESOURCES LTD.

SOUTH UNUK RIVER PROPERTY

LOCATION MAP

FIGURE — I

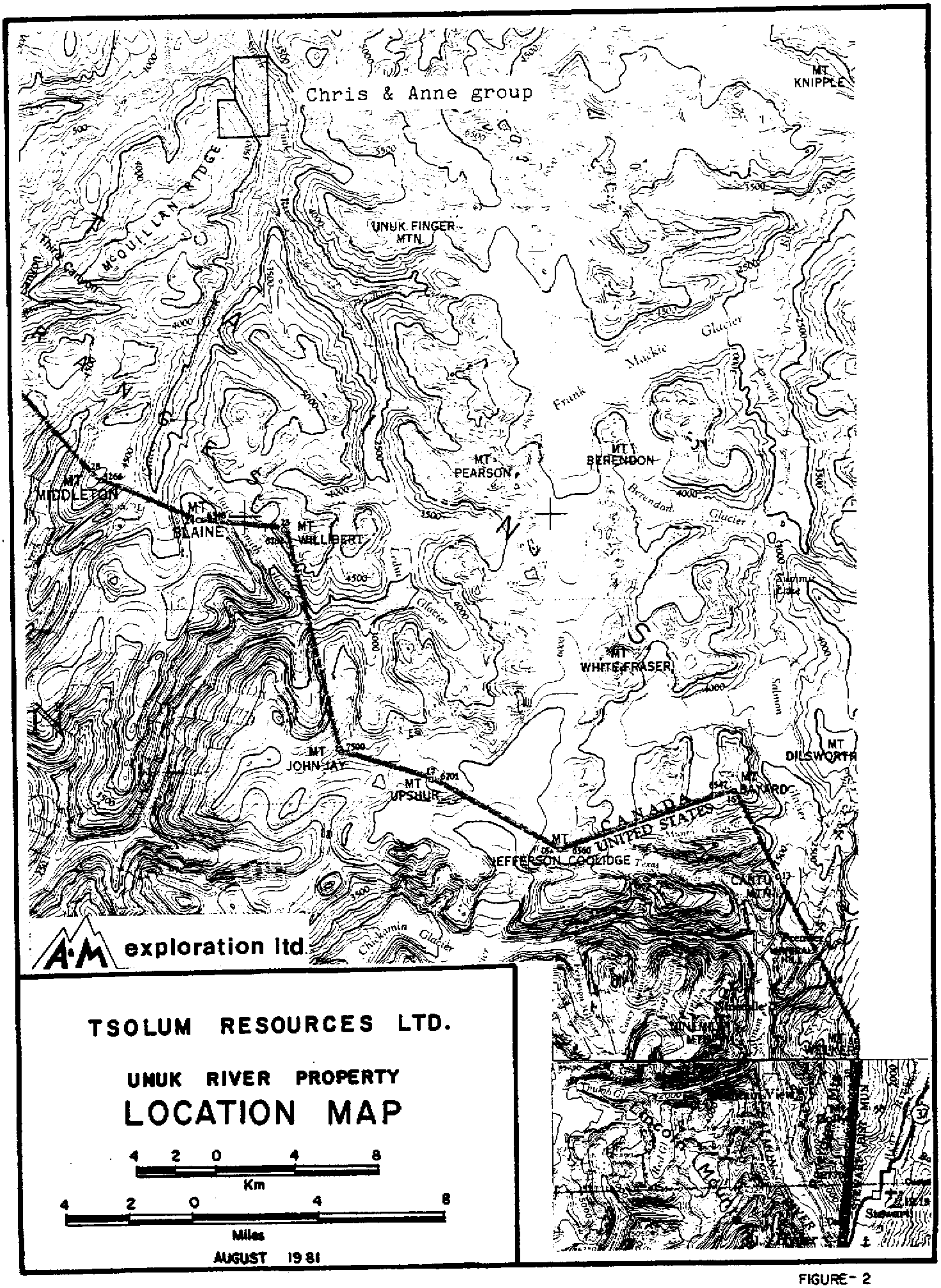
INTRODUCTION

Tsolum Resources Ltd. owns the CHRIS I and ANNE claims which cover skarn-type magnetite-pyrrhotite-chalcopyrite occurrences in the Unuk River area of northwestern British Columbia. The showings were discovered in the 1960's and staked in 1980 by T. McQuillan. The property lies 3 kilometres east of the MAX iron-copper deposit which was explored by Granduc Mines (now owned by Canada Wide Mines Ltd.) in 1960-1962 and 1975-1977. This work indicated 11 million tonnes of potentially mineable rock reported to contain 45% iron and about 1% copper.

This report summarizes results of geological mapping, sampling and geophysical surveys carried out by D.G. Allen and D.R. MacQuarrie during the period September 1 to 7, 1981.

LOCATION, ACCESS, PHYSIOGRAPHY

The property is located in rugged Coast Range Mountains, 65 kilometres northwest of Stewart, B.C. It lies on the west side of the South Unuk River, a north flowing tributary of the Unuk River which in turn flows southwesterly through the Alaska Panhandle into Burroughs Bay, 60 kilometres to the southwest. The Stewart-Cassiar highway is located 60 kilometres to the northeast. Access at present is by helicopter, based in Stewart.



A·M exploration ltd.

TSOLUM RESOURCES LTD.

UNUK RIVER PROPERTY

LOCATION MAP

4 2 0 4 8

Km

4 2 0 4 8

Miles

AUGUST 1981

FIGURE- 2

NTS 104 B

The South Unuk River occupies a broad braided stream channel about 300 to 600 metres wide. Valley slopes are moderately steep with some local precipitous areas. Outcrops occur mainly in precipitous areas and in creek gulleys.

Slopes are covered with a heavy virgin stand of Sitka Spruce, Hemlock and Balsam fir with an undergrowth of huckleberry, salmonberry, false azalea and Devil's Club. Much of the east-central part of the CHRIS I claim is a slide area covered with a dense tangle of slide alder, salmonberry, and Devil's Club, hence geological and geophysical surveys in this area were impractical at this time.

PROPERTY

The property consists of the following claims:

CLAIM NAME	RECORD NO.	RECORD DATE
CHRIS I (20 units)	2588	September 26, 1980
ANNE (12 units)	2587	September 26, 1980

They are owned by Tsolum Resources Ltd. The legal corner post was not located in the field but several identification posts were found. Claims were plotted on figures 3 and 4 on the basis of descriptions on the record forms.

REGIONAL GEOLOGY

The CHRIS-ANNE claims lie 10 to 15 kilometres east of the main contact of the Coast Plutonic Complex. Crystalline rocks in the Complex range in composition from quartz monzonite to diorite and in age from Upper Triassic to Early Tertiary. The Complex is flanked by sedimentary and volcanic rocks of the Upper Triassic Takla group and Jurassic Hazelton group which are intruded by many satellite stocks. Rock types in the area as described by Mandy (1935) include sandstone, greywacke, argillite, andesitic tuffs and flows. Limestone occurs in restricted areas and is abundant in the Gracey Creek area. Dikes of various rock types are reported to be abundant in the area. Unconsolidated fluvioglacial deposits and locally small areas of Recent basaltic flows lie in stream valleys. Glacial till covers parts of the less-steep mountain slopes.

PROPERTY GEOLOGY

Rock Types

Main rock types on the property are volcaniclastics presumably of the Upper Triassic Takla group. The rocks have a uniform north-northwest trend. Dips vary from easterly to westerly, indicating some degree of folding.

The most abundant rock types on the property are fine to medium grained chloritic tuff and tuffaceous siltstone and minor massive greenstone (unit 1, figure 3). The tuff is usually thin bedded to laminated and has a weak to locally strong foliation (eg. chlorite phyllite - unit 1a) usually parallel to bedding.

Feldspathic sandstone (unit 2) occurs interbedded with the tuffaceous units. The rock commonly has a gneissic appearance and consists of 1-2 mm tightly-packed feldspar grains in a chloritic matrix.

Limestone (unit 3) occurs as a few thin beds up to 10 metres thick interbedded with the volcanclastics. The limestone in the thicker beds is grey in color, has a fine-grained sugary texture and is laminated. The narrow beds which host the sulfides consist of fine-grained green chloritic limestone.

Feldspar porphyry (unit 4) contains abundant 0.5 cm light grey feldspar phenocrysts in a dark green fine-grained groundmass. It occurs as a conformable sill or flow in the volcaniclastics.

Intrusive rocks are rare in the claim area. Two outcrops of fine-grained diorite (unit 5) were encountered on lines 3S, 9+20 W and ON, 20+60 W (figure 3). Several narrow andesite dikes were noted locally. Two stocks of fine to medium-grained diorite are reported to occur on the MAX property (Ostensoe et al, 1975; Ostensoe, 1978) 1 to 3 kilometres to the west.

Mineralization

Semi-massive to massive magnetite and pyrrhotite with chalcopyrite occur in one to three limestone horizons. Magnetite occurs as layers in the relatively pure limestone units whereas the sulfides occur in thin beds of green chloritic limestone that have been almost completely replaced.

The mineralized horizons range in thickness from 0.5 metres south of line 6S to at least 7 metres thick near line 4N. VLF-EM and magnetic profiles on Line 0 (figure 6) indicate a conductive and magnetic zone as much as 35 metres wide.

Chalcopyrite occurs as streaks and disseminations in massive magnetite and pyrrhotite and locally in commonly siliceous tuff units that underlie the massive sulfide layers. Near Line 1S, chalcopyrite occurs disseminated in various sulfide-rich or siliceous beds over a width of about 100 metres. Pyrite and pyrrhotite occur as fine disseminations locally in the volcaniclastics especially where they appear to have been silicified.

Some of the magnetite-rich beds are vuggy and partly converted to limonite, indicating that some of the sulfides may have been leached out by weathering.

Alteration

All rocks have been weakly to moderately chloritized presumably as a result of regional metamorphism. Locally the host rocks have been converted to chlorite phyllite (unit 1a).

In spite of the massive nature of the magnetite and pyrrhotite, the development of the skarn silicates appears to have been weak. Garnet and diopside occur erratically as scattered grains and masses in the magnetite or sulfide-rich limestone host.

Locally, fine grained silica occurs in the tuffs. The tuffs underlying the mineralized horizon in places is siliceous in appearance and contains disseminated pyrrhotite and minor chalcopyrite. Quartz veins and quartz cemented breccia are common in some of the fault zones.

Structure

A uniform north-northwesterly trend is evident from figure 3. Bedding dips both to the east and west indicating some degree of folding or warping. The mineralized horizons dip mainly to the east, except in southernmost exposures. However geophysical data (figures 5 and 6) suggests a net dip to the west, possibly indicating some structural complexity. On the MAX property the limestone beds are reported to be of a similar thicknesses (3-15 metres) but locally are tightly folded to more than 30 metres thick.

Faults are abundant in the creek south of Line ON. Trends are northeast and southwest with steep dips - possibly a conjugate set. The mineralized horizons appear to have been displaced in this area.

GEOCHEMISTRY

Sample sites are plotted on figure 3, descriptions of rock samples are listed in Table 1 and results presented in Appendix I.

Channel samples or semi-continuous rock chip samples were taken across the magnetite-pyrrhotite-chalcopyrite skarn horizon wherever it was encountered. Results indicate a range in values of 0.02 to 0.36% Cu in the skarn. Quartz

TABLE 1

ROCK SAMPLE DESCRIPTIONS

SAMPLE NO.	DESCRIPTION	% Cu
81 UAT 211	Siliceous fault? breccia float	
218	Silicified andesite fault containing finely dissem. py	
219	silicified andesite tuff, minor pyrite	
220	5 - 15 cm quartz vein in fault zone	
221	Silicified and brecciated siltstone	
222	Quartz vein float with trace pyrite	
223	Suboutcrop of massive pyrrhotite with cpy	0.14
224	Oxidized massive magnetite bed with Cu stain - 2 m thick	0.36
225	Chloritized andesite? containing lenses of po and mag.	
226	Siliceous andesite containing dissem. py	0.14
227	Siliceous andesite containing dissem po, minor cpy	0.03
228	Grey phyllite with disseminations and fracture coatings of py	
229	Green tuff with irregular dissem po and minor cpy	0.17
230	Green tuff with locally abundant po and cpy	0.13
231	Siliceous tuff with 5% disseminated Po	0.02
232	Semi-massive po with streaks cpy over 0.5 m	0.28
234	Suboutcrop over 0.5 m of semi-massive po	0.02
235	Chloritic andesite containing vuggy quartz veins	
236	Massive garnet - mag - po. skarn with irregular streaks cpy over upper 1 m	0.18
237	As above over lower 0.7 m	0.12
238	20 cm siltstone bed with abundant clots & streaks py & tr cpy	0.02
239	2 m bed massive mag and minor cpy	0.08
240	3 m bed semi-massive mag, po and minor cpy	0.13
241	4 m zone semi-massive mag, po and minor cpy	0.11
242	3 - 4 m limy zone containing abundant mag, po,minor cpy	0.17
243	Taken across 10 m - true thickness 2-4 m massive fine grained po with clots of phyllite, local garnet, magnetite and streaks cpy	0.14
244		0.11
245		0.22
246	Weathered magnetite bed 3 m thick	0.01
247	6 m wide zone massive po skarn	0.11
248		0.18
249	Quartz-veined sandstone in fault zone	
250	Silicified siltstone with streaks of mag, po, minor cpy taken from 0.5 by 1 m outcrop	0.09
251	1 m bed massive magnetite with local streaks po and minor cpy	0.14
252	3 m from above in 1-2 m bed of mag with streaks of po.	0.13

veins and silicified zones were also sampled and analyzed for 10 elements.

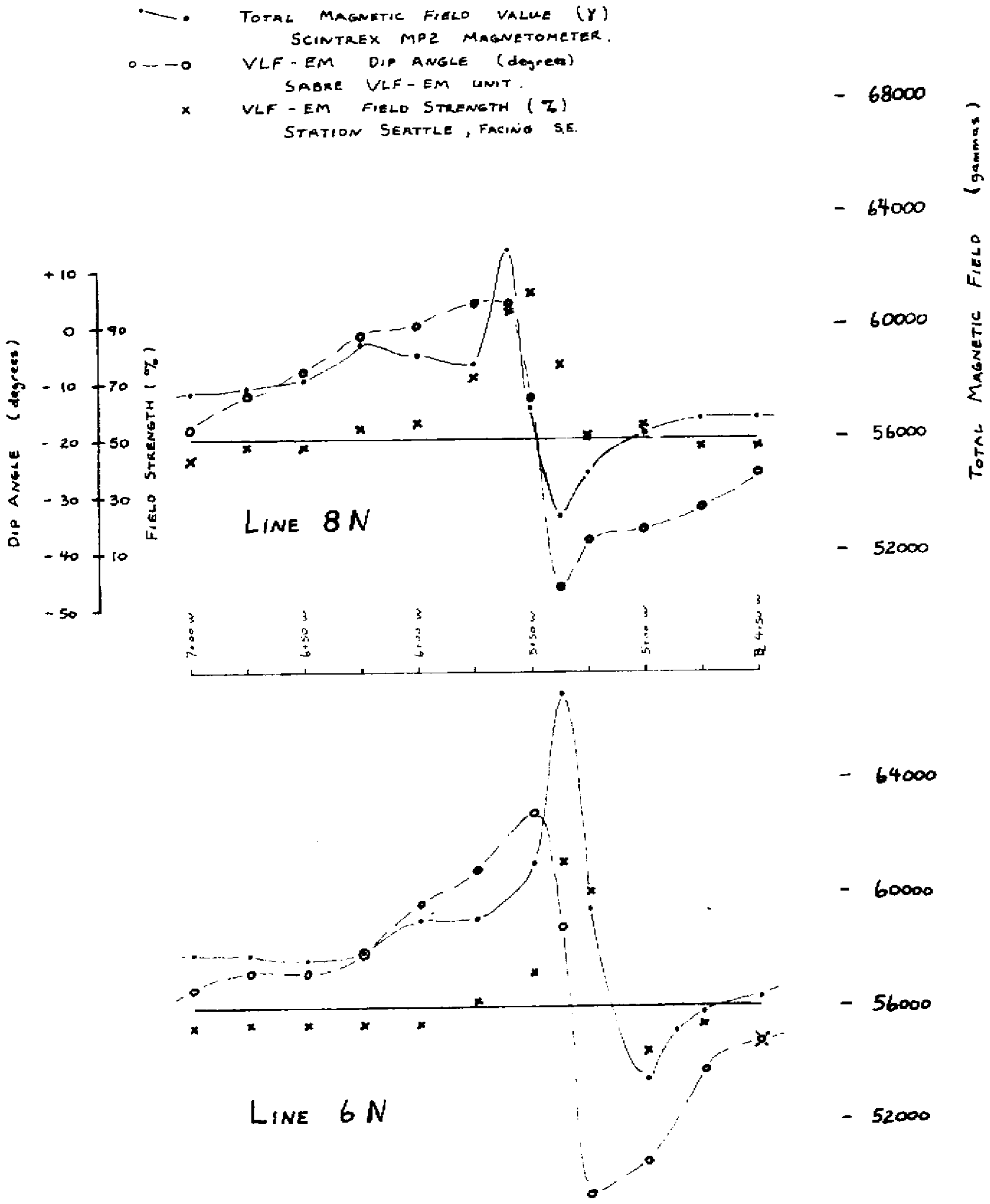
Silt samples were taken in creeks draining the area and soil samples taken along line 4N to assess their possible use in exploration for other maineralized zones. Soil material sampled was mainly rusty podzol taken at depths of 20-30 cm. Silt and soil samples were placed in Kraft paper bags and shipped to Rossbacher Laboratories for analyses for 10 elements. The skarn zones are reflected by prominent copper and iron anomalies. Unexplained silver anomalies occur in soil uphill from the skarn zones. Unexplained gold anomalies obtained in several drainages on the CHRIS I claim (IUA 213-215) may be worthy of follow-up prospecting.

GEOPHYSICS

As an aid in delineating magnetite-pyrrhotite-chalcopyrite mineralization in areas of poor outcrop, magnetic and electromagnetic surveys were carried out over the area of interest. Two reconnaissance lines were run to the west in an attempt to locate any other mineralized horizons. A total of 14.0 line/km of magnetometer and 1.5 line/km of VLF-EM surveying were completed over a flagged grid.

Survey Procedure

The instrument used for the magnetic survey was a Scintrex MP-2 total field, proton precession magnetometer. This instrument has a reading accuracy of one gamma, and



Donald G. Allen

A.M exploration ltd.

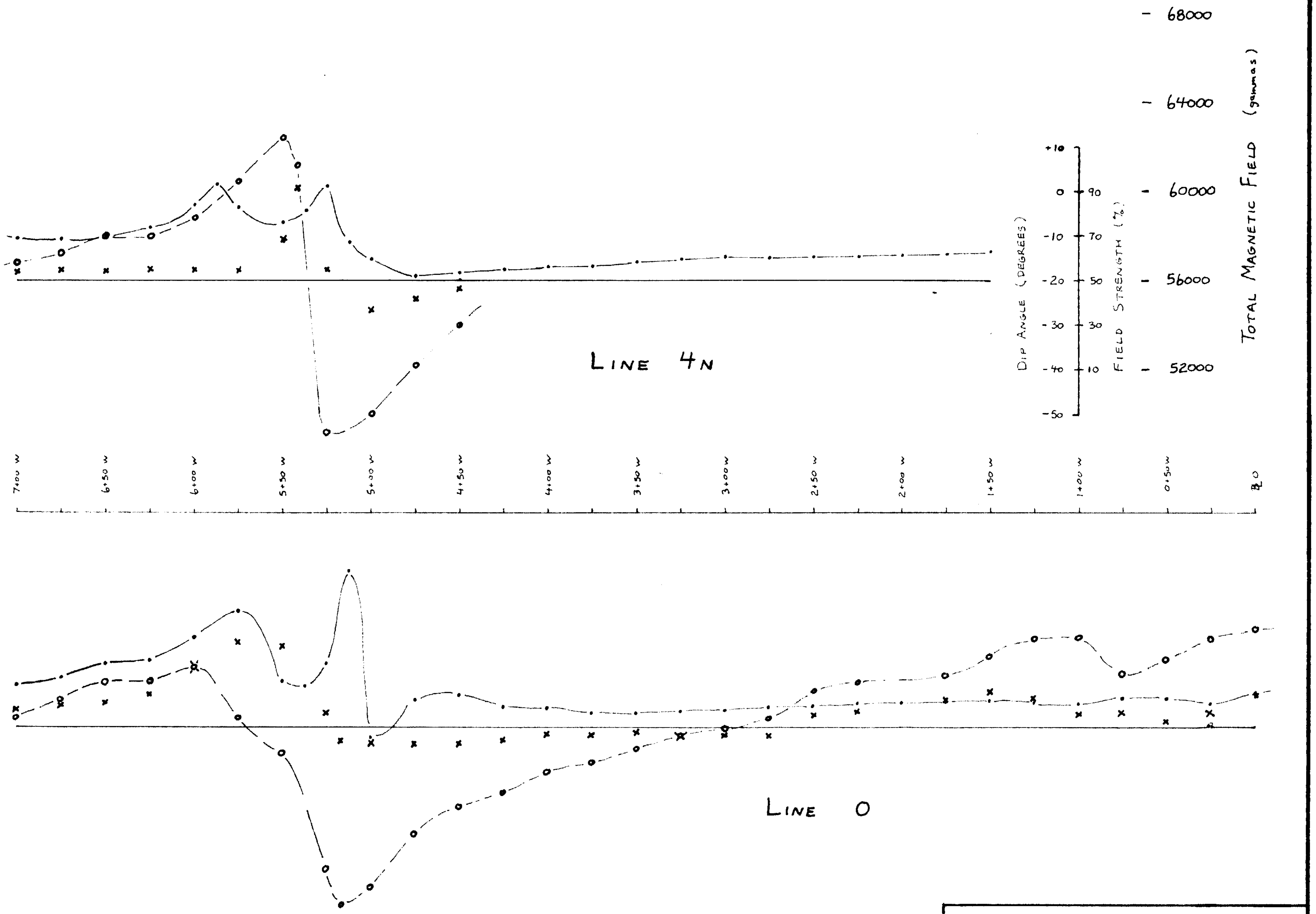
Tsolum Resources Ltd., Unuk River

Mag - Vlf Em Profiles
Line 6N & 8N

scale 1:2500

Fig No. 5

9723



Donald G. Allen

A·M exploration ltd.

TSOLUM RESOURCES LTD., UNUK RIVER

MAG - VLF EM PROFILES
LINE 4N & O

Scale 1:2500

FIG. No. 6

in the back-pack configuration, a reading repeatability of ± 5 gammas. Readings were taken every 25 metres and locally every 12.5 metres or closer.

Baseline 0 and 4+50 W, were double-run (each station occupied twice) in order to provide the necessary survey control. All other magnetic observations have been looped to these baseline stations. Total drift seldom exceeded 50 gammas with the largest variations in repeatability caused by small horizontal positioning errors in areas of high magnetic gradient.

The VLF-EM unit used, was a model 27 SABRE VLF-RECEIVER, manufactured in Vancouver, Canada. The instrument measures dip angle (to an accuracy of ± 0.5 degree) normalized field strength (± 1.0%) of a transmitted very low frequency electromagnetic field. The transmitter station used for the survey was Seattle, Washington, and the instrument-facing direction was south-east.

The total magnetic field is plotted on figure 4. Magnetic and VLF-EM profiles for lines 0, 4, 6 and 8N are plotted on figures 5 and 6.

Survey Results

Two zones of strong magnetic response which are generally co-incident with moderate to strong electromagnetic conductors have been located.

The widest zone starts at line 1S 1+00 W and strikes at a bearing of 335^{0} to line 8N, 5+75 W and beyond. This zone is in excess of 1000 metres in length, has magnetic anomalies varying from +11,000 to -9,000 gammas, and peak to peak VLF dip angle values of up to 65 degrees.

The zone is interpreted to consist of 2 sub-parallel continuous bands - one anomalous in magnetite concentration and the other anomalous in electrical conductivity (massive pyrrhotite-chalcopyrite mineralization). Results essentially confirm geological observations. At the northwest end of the zone, the geophysics indicates that the two bands are very close together (possibly within a few metres) with the magmetic band occupying the eastern flank. Whereas near line 0, there is a distinct separation of some 50 metres between the two bands, again with the magnetite-rich band to the east, and a wide strong conductive zone to the west

As can be seen from the profiles, the magnetic responses are generally asymmetrical tapering more slowly to the southwest. This indicates either a more disseminated type of pyrrhotite mineralization (as opposed to the massive variety) or numerous small sub-parallel zones of magnetite-pyrrhotite mineralization.

Due to the large magnitude of the magnetic anomalies, and lack of information concerning any remnant magnetization, dip of the bands is difficult to determine. Initial observations would indicate a vertical to moderate southwesterly dip (as opposed to the vertical to moderate northeasterly dip observed for the nearby strata).

A second anomalous area is centred at line 4S 7+30 W, and is roughly elliptical in outline. Its long axis is parallel to the first zone, and it is similarly chracterized by a very large asymmetric magnetic anomaly (19,000 gammas above background) on the east, decreasing to the west. This zone would appear to be a fault offset continuation of the first zone.

Respectfully submitted,

D. G. Allen

D.G. Allen
P. Eng. (B.C.)

DR MacQuarrie

D.R. MacQuarrie
Geophysicist

REFERENCES

Mandy, J.T. (1935). Unuk River Area *in* M. Mines Ann. Rept., 1935, p. B7 - B11.

Ostenso, E., Mackie, J., Kruchkowski, E. (1975). Report of Geological Mapping and Magnetometer Survey, Max Prospect, Unuk River Area. B.C. Dept. of Mines Assess. Rept. 5496.

Ostenso, E. (1978). Report of Geological Mapping and Magnetometer Survey, Max Property, Unuk River Area. B.C. Dept. Mines Assess. Rept. 6690.

CERTIFICATE

I, Douglas R. MacQuarrie, of the City of Surrey in the Province of British Columbia, do hereby certify that:

1. I am a Consulting Geophysicist of A & M Exploration Ltd., with offices at 4570 Hoskins Road, North Vancouver, British Columbia.
2. I am a graduate of the University of British Columbia with a degree in Geology and Geophysics. (B.Sc., 1975)
3. I have been practising my profession for the past seven years and have been active in the mining industry for the past ten years.
4. I am an active member of the Canadian Institute of Mining and Metallurgy and a member of the British Columbia Geophysical Society.
5. This report is based on field work carried out during the period September 1 - 7 1981.
6. I hold no interest, nor do I expect to receive any, in the Chris or Anne Claims or in Tsolum Resources Ltd.
7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus by Tsolum Resources Ltd.

D R. MacQuarrie

North Vancouver, B.C.
September 30, 1981

Douglas R. MacQuarrie
Geophysicist

CERTIFICATE

I, Donald G. Allen certify that:

1. I am a Professional Geological Engineer, resident at 4570 Hoskins Road, North Vancouver, B.C.
2. I am a graduate of the University of British Columbia with degrees in Geological Engineering. (B.A.Sc., 1964; M.A.Sc., 1966)
3. I have been practising my profession for the last fifteen years.
4. I am a member in good standing of the Association of Professional Engineers of British Columbia.
5. This report is based on field work carried out during the period September 1 - 7, 1981.
6. I hold no interest, nor do I expect to receive any, in the Chris or Anne Claims or in Tsolum Resources Ltd.
7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus by Tsolum Resources Ltd.

North Vancouver, B.C.
September 30, 1981

Donald G. Allen
P. Eng. (B.C.)

Donald G. Allen

APPENDIX I

GEOCHEMICAL AND ASSAY RESULTS

Rossbacher Laboratory Ltd.
GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

Jan. 1980.

ANALYTICAL METHODS CURRENTLY IN USE AT ROSSBACHER LABORATORY LTD.

A. SAMPLE PREPARATION.

1. Geochem. Soil and Silt: Samples are dried, and sifted to minus ~~100~~ 80 Mesh, through stainless steel, or nylon screens.

2. Geochem. Rock : Samples are dried, crushed to minus $\frac{1}{4}$ inch, split, and pulverized to minus 100 mesh.

B. METHOD OF ANALYSIS.

1. Multi element. (Mo, Cu, Ni, Co, Mn, Fe, Ag, Zn, Pb.): 0.5 Gram sample is digested for four hours with a 15:85 mixture of Nitric-Perchloric acid.
The resulting extract is analyzed by Atomic Absorption spectroscopy, using Background Correction where appropriate.

2. Tungsten: 1.0 Gram sample is sintered with a carbonate flux, and dissolved.
The resulting extract is analyzed colorimetrically, after reduction with Stannous Chloride, by use of Potassium Thiocyanate.

3. Tin: 0.5 Gram sample is sublimated by fusion with Ammonium Iodide, and dissolved.
The resulting solution is analyzed colorimetrically by use of Gallein.

4. Fluorine: 0.5 Gram sample is fused with a Carbonate Flux, and dissolved.
The resulting solution is analyzed for Fluorine by use of an Ion Selective Electrode.

5. Gold: 10.0 Gram sample is dissolved in Aqua Regia.
The resulting solution is subjected to a Methylisobutyl Ketone extraction, which extract is analyzed for Gold using Atomic Absorption Spectroscopy.

6. pH: An aqueous suspension of soil, or silt is prepared, and its pH is measured by use of a pH meter.

7. Arsenic: 0.25 Gram sample is digested with Nitric-Percloric acid.
   Arsenic from the solution is converted to arsine, which in turn reacts with silver D.D.C. The resulting solution is analyzed by colorimetry.

8. Antimony: 0.50 Gram sample is fused with Ammonium Chloride and dissoved.
   The resulting solution is analyzed colorimetrically by use of brilliant green.

9. Barium: 0.50 Gram sample is repeatedly digested with $HClO_4$-HNO_3 and HF.
   The solution is analyzed by Atomic Absorption Spectroscopy.

10. Mercury: 1.00 Gram sample is digested with HNO_3.
    The solution is analyzed by Atomic Absorption Spectroscopy, using a cold vapor generation technique.

11. Rapid Silicate Analysis: 0.10 Gram sample is fused with Lithium Metaborate, and dissolved in HNO_3.
    The solution is analyzed by Atomic Absorbtion for SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2 P_2O_5, and MnO.

12. Partial Extraction and Fe/Mn oxides: 0.5 Gram sample is extracted using one of the following:
    Hot or cold 0.5 N. HCL, 2.5% E.D.T.A, Ammonium Citrate, or other selected organic acids.
    The solution is analyzed by use of Atomic Absorption Spectroscopy.

13. Biogeochemical: Samples are dried, and ashed at 550°C. and the resulting ash analyzed as in #1, multielement analysis.

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 81388

INVOICE NO.

DATE RECEIVED

DATE ANALYSED Sept. 23, 1981.

TO: A & M EXPLORATION LTD.
4570 Hoskins Road
North Vancouver, B.C.

ATTN: Mr. Don Allen.

SAMPLE NO.:	% Cu
81 UAT 223	0.14
81 UAT 224	0.36
81 UAT 232	0.28
81 UAT 234	0.02
81 UAT 236	0.18
81 UAT 237	0.12
81 UAT 238	0.02
81 UAT 239	0.08
81 UAT 240	0.13
81 UAT 241	0.11
81 UAT 242	0.17
81 UAT 243	0.14
81 UAT 244	0.11
81 UAT 245	0.22
81 UAT 247	0.11
81 UAT 248	0.18
81 UAT 251	0.14
81 UAT 252	0.13

Certified by

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B. C.
CANADA
TELEPHONE: 299-6910

CERTIFICATE NO. 81388-2

CERTIFICATE OF ANALYSIS

INVOICE NO.

TO: **A & M EXPLORATION LTD.**
4570 HOSKINS ROAD
NORTH VANCOUVER, B.C. V7K 2R1

DATE ANALYSED SEPT. 23/81

PROJECT

								%					ppb	
No.	Sample	pH	Mo	Cu	Ni	Co	Mn	Fe	As	Zn	Pb		Au	No.
01	81UAL210		3	106	60	42	940	5.3	0.6	102	14		20	01
02	T211		4	110	120	38	540	6.6	0.6	68	16		10	02
03	L212		3	66	40	26	620	3.7	0.4	84	8		10	03
04	213		3	78	42	32	540	4.8	0.2	82	4		80	04
05	214		3	76	36	26	580	4.0	0.4	86	8		200	05
06	215		1	132	34	26	520	3.5	1.4	96	20		120	06
07	216		1	138	38	32	560	3.9	1.4	86	2		30	07
08	L217		3	120	40	36	700	4.6	1.2	80	8		60	08
09	T218		4	112	118	36	540	6.1	0.8	56	20		10	09
10	81UAT219		28	126	36	18	190	3.3	1.8	14	30		10	10
11	220		35	204	44	24	260	3.7	0.8	28	18		10	11
12	221		2	32	14	6	120	1.5	0.2	4	12		10	12
13	222		4	44	34	12	220	2.4	0.4	20	18		10	13
14	223		5	–	18	6	90	2.2	0.2	8	14		10	14
15	224		112	–	80	138	320	>10.0	0.8	16	12		10	15
16	225		4	160	34	70	130	>10.0	0.6	14	4		10	16
17	226		14	1360	96	144	560	6.5	2.6	18	22		10	17
18	227		10	264	40	38	440	4.9	0.4	18	20		10	18
19	228		8	176	24	20	180	2.9	0.4	16	30		10	19
20	81UAT229		16	1740	40	18	160	26	1.8	14	88		20	20
21	230		23	1260	156	168	420	8.0	1.0	22	42		10	21
22	231		4	210	132	70	480	6.7	0.8	26	38		10	22
23	T232		1	–	42	312	220	2.9	0.6	12	2		20	23
24	L233		1	226	40	44	660	5.1	0.4	60	2		10	24
25	T234		22	–	58	54	580	2.7	0.4	32	4		10	25
26	235		2	44	46	26	320	2.5	0.4	30	4		30	26
27	236		1	–	22	162	540	8.7	1.2	14	2		10	27
28	237		1	–	22	218	560	5.3	1.0	10	2		10	28
29	238		1	–	58	50	300	3.9	0.4	24	4		10	29
30	81UAT239		3	–	64	106	440	>10.0	0.4	18	2		10	30
31	240		2	–	38	118	840	>10.0	0.8	14	18		10	31
32	241		3	–	50	162	400	>10.0	0.6	14	8		10	32
33	242		1	–	76	174	940	5.9	0.8	14	6		10	33
34	243		1	–	74	214	560	6.2	0.8	12	4		10	34
35	244		1	–	52	158	680	6.5	0.8	20	6		10	35
36	245		2	–	66	240	440	3.5	0.8	38	4		10	36
37	246		1	108	24	56	540	>10.0	0.8	16	4		10	37
38	247		2	–	24	144	360	8.5	0.6	18	4		10	38
39	81UAT248		2	–	78	262	320	2.7	0.2	6	2		10	39
40	STD.G 6		44	320	248	22	260	1.6	3.4	300	334			40

VALUES IN PPM, UNLESS NOTED OTHERWISE.

Certified by P. Rossbach

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B. C.
CANADA
TELEPHONE: 299-6910

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 81388-3

INVOICE NO.

DATE ANALYSED SEPT. 23/81

PROJECT

TO: **A & M EXPLORATION LTD.**
4570 HOSKINS ROAD
NORTH VANCOUVER, B.C. V7K 2R1

No.	Sample	pH	Mo	Cu	Ni	Co	Mn	% Fe	Ag	Zn	Pb		ppb Au	No.
01	81VAT249		1	40	26	28	360	2.7	1.2	22	24		10	01
02	81VAT250		94	860	52	104	360	5.5	2.2	20	12		20	02
03	81VAT251		13	–	36	162	70	>10.0	0.8	14	4		20	03
04	81VAT252		4	–	30	76	440	4.0	1.6	52	26		30	04
05														05
06														06
07														07
08														08
09														09
10														10
11														11
12														12
13														13
14														14
15														15
16														16
17														17
18														18
19														19
20														20
21														21
22														22
23														23
24														24
25														25
26														26
27														27
28														28
29														29
30														30
31														31
32														32
33														33
34														34
35														35
36														36
37														37
38														38
39														39
40														40

VALUES IN PPM, UNLESS NOTED OTHERWISE.

Certified by

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910

CERTIFICATE NO. 81388-4

INVOICE NO.

DATE ANALYSED SEPT 23/81

PROJECT

CERTIFICATE OF ANALYSIS

TO: **A & M EXPLORATION LTD.**
4570 HOSKINS ROAD
NORTH VANCOUVER, B.C. V7K 2R1

No.	Sample	pH	Mo	Cu	Ni	Co	Mn	% Fe	Ag	Zn	Pb		PPB Au	No.
01	81UML01		2	46	26	22	340	3.5	0.2	56	10		20	01
02	02		2	74	42	24	640	3.7	0.6	118	16		40	02
03	03		3	70	36	28	680	3.7	0.8	112	16		40	03
04	04		3	76	30	22	760	3.6	0.6	106	16		20	04
05	05		2	74	34	26	480	3.4	0.6	116	12		20	05
06	81UMS 06		2	32	20	16	120	5.1	1.0	44	10		10	06
07	S 07		2	102	22	14	220	5.1	0.6	40	8		40	07
08	S 08		2	314	28	30	200	>10.0	0.6	24	4		20	08
09	S 09		2	262	20	26	80	10.0	0.6	8	6		20	09
10	81UME10		16	36	14	14	110	2.7	0.8	26	26		NSS	10
11	11		7	48	20	14	200	3.9	1.6	50	12		20	11
12	12		7	26	18	14	130	4.7	3.4	48	12		20	12
13	13		3	46	20	12	130	4.6	4.8	44	8		20	13
14	14		6	38	20	14	180	5.0	2.0	46	10		20	14
15	15		2	52	22	16	120	5.2	1.8	46	8		30	15
16	81UME16		3	42	14	16	150	3.7	1.2	42	10		40	16
17														17
18														18
19														19
20														20
21														21
22														22
23														23
24														24
25														25
26														26
27														27
28														28
29														29
30														30
31														31
32														32
33														33
34														34
35														35
36														36
37														37
38														38
39														39
40														40

VALUES IN PPM, UNLESS NOTED OTHERWISE.

Certified by J. Rossbacher

APPENDIX II

AFFIDAVIT OF EXPENSES

AFFIDAVIT OF EXPENSES

This will certify that geological mapping, magnetometer and VLF-EM surveys were carried out from August 31 to September 7, 1981 on the CHRIS and ANNE CLAIMS, Skeena Mining Division, South Unuk River area, British Columbia, to the value of the following:

Field work	
Salaries: D.G. Allen, D.R. MacQuarrie 7 days @ $450/day	$ 3,150.00
Mobilization or 2 days @ $450/day	900.00
Mobilization costs, transportation	763.45
Helicopter Support	1,574.35
Telephone	151.25
Room and board	399.72
Magnetometer, VLF-EM rental 10 days @ $35/day	350.00
Field supplies and radio rental	801.72
Shipping expense	50.00
Assays and geochemical analysis	600.40
Report preparation	
Salaries: 3 days @ $450/day	1,350.00
Maps, draughting, typing, photocopying	849.89
Total	$10,740.78

Respectfully submitted,

D. G. Allen

D. G. Allen
P. Eng. (B.C.)

LEGEND

TRIASSIC — JURASSIC ?

5	Diorite

UPPER TRIASSIC

4	Feldspar Porphyry
3	Limestone
▨	Chloritized Feldspathic Sandstone
1	Green Volcanic Sandstone, Siltstone Tuff la Chlorite Phyllite

SYMBOLS

▬	Magnetite — Rich Horizon
▬	Sulphide — Rich Horizon
50	Bedding
68	Fault
po	Pyrrhotite
sil	Silicification
mag	Magnetite
cpy	Chalcopyrite
qtz	Quartz Veins
⋯	Outcrop Boundary
— — —	Geological Contact
IUA 242 ⊕	Rock Chip Sample Site , Sample number
□	Silt Sample Site
○	Soil Sample Site

9723

①

100 50 0 100 200
Meters

416 208 0 416 832
Feet

SCALE 1: 5000

N.T.S. 104 B/7,8

TSOLUM RESOURCES LTD.
— SOUTH UNUK RIVER PROPERTY —
SKEENA RIVER MINING DIVISION — BRITISH COLUMBIA

GEOLOGICAL & GEOCHEMICAL MAP

Donald G. Allen

A·M exploration ltd.

DWN. BY : T.M. CHK. BY : DGA DATE : SEPT. 1981	JOB NO. 81—121	FIG. NO. 3

N

A·M exploration ltd.

Donald G. Allen

LEGEND

⊙	Base Station
.57396	Drift Corrected Total Field Value in gammas

9723

INSTRUMENT: SCINTREX MP2 ②

100 50 0 100 200
Meters

416 208 0 416 832
Feet

SCALE 1:5000

N.T.S. 104 B/7,8

TSOLUM RESOURCES LTD.
— SOUTH UNUK RIVER PROPERTY —
SKEENA RIVER MINING DIVISION — BRITISH COLUMBIA

TOTAL MAGNETIC FIELD

CONTOUR INTERVAL : 10 K. Gammas

	JOB NO.	FIG. NO.
DWN. BY : T.M. CHK. BY : D.M.G. DATE: SEPT. 1981	81—121	4