

LOG NO: 1110

RD.

ACTION:

24 pp

FILE NO:

87-718-16535

SUMMARY REPORT
SUMMARY REPORT; GEOLOGICAL MAPPING
LITHOGEOCHEMICAL SAMPLING
AND
GEOPHYSICAL WORK ON THE
'LAKE' GROUP OF CLAIMS
(YJ13 AND ADJACENT CLAIMS)
SOUTH ATLIN PROPERTY
ATLIN MINING DIVISION

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,535

NTS: 104N.12E

LATITUDE: 59 deg. 33 min. ^{48"} north

LONGITUDE: 133 deg. 41 min. ^{18"} west

OWNER: HOMESTAKE MINERAL DEVELOPMENT COMPANY, O. BERRY, H. VERSLUCE

OPERATOR: HOMESTAKE MINERAL DEVELOPMENT COMPANY

BY: DUNCAN MCTIVOR

DATE: OCTOBER 1987

FILMED

TABLE OF CONTENTS

	<u>PAGE</u>
1. Summary and Recommendations	1.
2. Introduction	1.
2.1 Location, Access and Physiography	1.
2.2 Property Definition	2.
2.3 Work Completed	3.
2.4. General Geological Setting and Economic Assessment	3.
3. Detailed Technical Data	4.
3.1. Geological Mapping	4.
3.1.1. Methods Employed	4.
3.1.2. Results and Interpretation	4.
3.2 Lithochemical Sampling	6.
3.2.1. Methods Employed	6.
3.2.2. Results and Interpretation	6.
3.3 Geophysical Surveys	9.
3.3.1 Methods Employed	9.
3.3.2 Results and Interpretation	10.
3.3.2.i) Total Field Magnetism	10.
3.3.2.ii) Vertical Gradient Magnetism	10.
3.3.2 iii) VLF-EM	10.
4. Itemized Cost Statement and Allocation of Expenditures	11.
5. Author's Qualifications	14.
6. Selected Bibliography	14.

LIST OF FIGURES

	<u>PAGE</u>
1. Property Location Map	FOLLOWS PAGE 2
2. Claim Location Map	FOLLOWS PAGE 2.

LIST OF APPENDICES

1. 1:1,000 Geology Map, South Atlin Property (East & West Sheets)
2. Geochemical Data
3. Geophysical Plan Maps:
 - 1:5,000 Ground Magnetometer Survey, Total Field Data
 - 1:5,000 Ground Magnetometer Survey, Total Field Data Contour Plan
 - 1:5,000 Ground Magnetometer Survey, Vertical Gradient Data
 - 1:5,000 Ground Magnetometer Survey, Vertical Gradient Contour Plan
 - 1:5,000 VLF-EM Survey, Line Profile Plots
 - 1:5,000 VLF-EM Survey, Fraser Filter Data
 - 1:5,000 VLF-EM Survey, Fraser Filter Contour Plan.

1. SUMMARY AND RECOMMENDATIONS

The South Atlin Property is located adjacent to and immediately south of the town of Atlin, in northern British Columbia. During the period of June 11 through July 1 of 1987, detailed mapping and lithogeochemical sampling of the property was carried out by Homestake Mineral Development Company personnel. Total field magnetic, vertical gradient magnetic, and VLF-electromagnetic geophysical surveys were also completed on the property, by Scott Geophysics, a Vancouver based contractor.

The geological mapping on the property encountered almost exclusively ultramafic intrusive rocks, both serpentinites and hydrothermally altered silica-carbonate-mariposite rich ultramafics. Minor occurrences of diabase, feldspar porphyry, and andesite porphyry were also encountered, predominantly as thin dykes.

An extensive sampling program was completed over the property, to assess the economic potential of the hydrothermally altered ultramafics, which elsewhere in the Atlin Camp host auriferous quartz veins and vein stockworks. Of the 160 samples collected for analysis, 19 returned weakly anomalous gold values of greater than 20 parts per billion, ranging from 25 to 720 ppb Au. The best assays came from a pit partially exposing a quartz-carbonate vein in the northwest section of the property. This vein warrants further exploration, probably via a power stripping program and tightly spaced soil geochemical survey over its projected strike extensions.

The magnetic surveys, both total field and vertical gradient, served to illustrate the strong east-west structural orientation of the ultramafic rocks, and to a lesser degree aided in differentiating altered (low magnetic signature) from serpentinized (high magnetic signature) ultramafics.

The VLF-EM survey delineated several east-west trending conductive horizons, that are thought to represent shear zones.

2. INTRODUCTION

2.1 LOCATION, ACCESS, AND PHYSIOGRAPHY

The South Atlin Property is located adjacent to and immediately south of the village of Atlin, in northern British Columbia. The claims are situated in the Atlin Mining Division, on NTS map sheet 104N.12.

The property is readily accessible via a gravel road which extends south from the town of Atlin through the western portion of the property, as well as via boat, as the western edge of the property is bounded by Lake Atlin.

Relief on the property is low by local standards, rarely exceeding 20 meters. Outcrop exposure on the property is approximately 50%, the remainder of the ground being covered by a thin mantle of glacial drift. One small swamp occupies the north-central portion of the property, where hydromagnesite is currently being deposited.

2.2 PROPERTY DEFINITION

The South Atlin Property covers parts of claims YJ-13, YJ-14, and Jack 6, part of a larger grouping of claims known as the 'Lake' Group, the pertinent details of which appear below.

LAKE GROUP OF CLAIMS

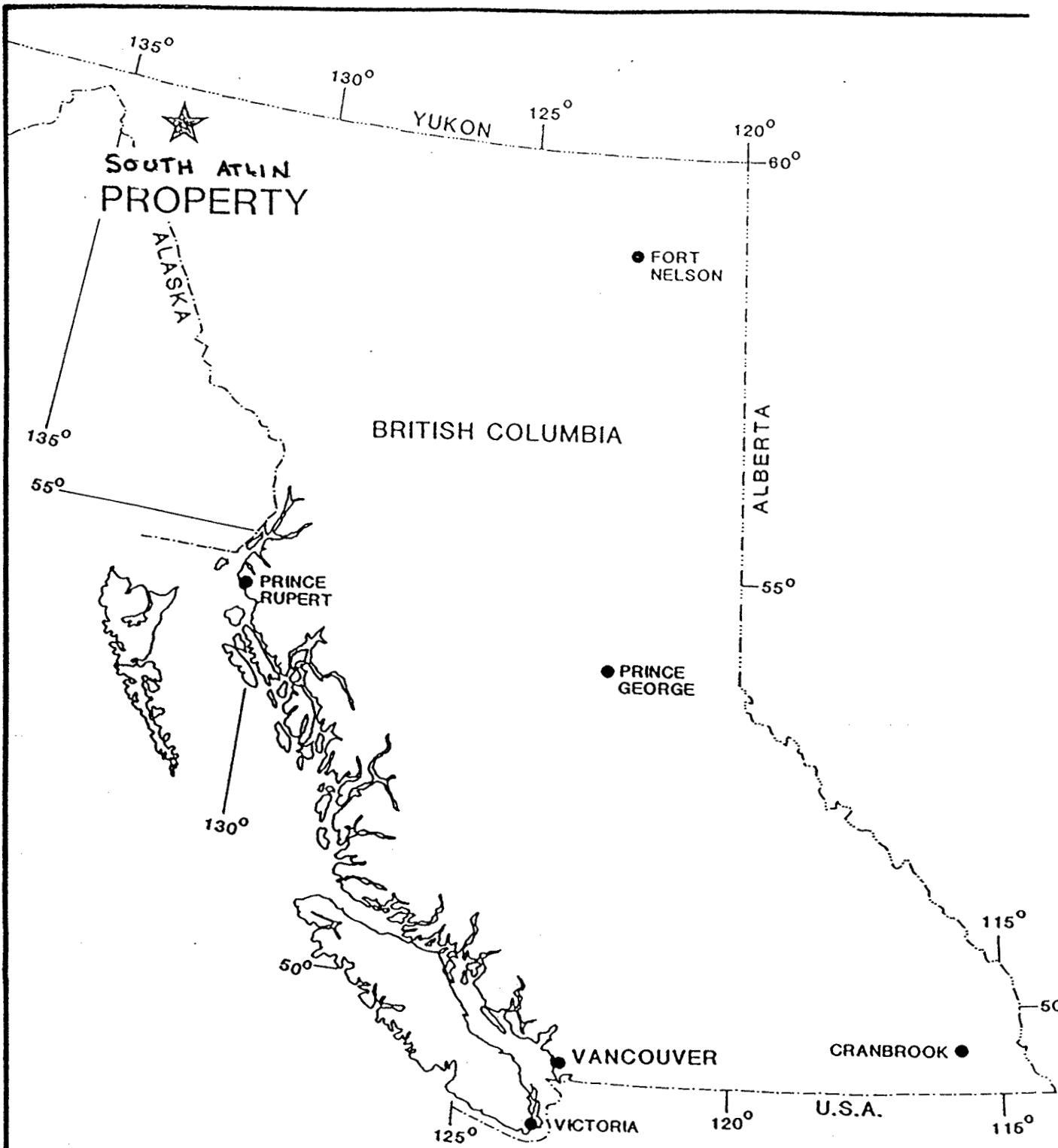
<u>CLAIMS</u>	<u>UNITS</u>	<u>REC. NO.</u>	<u>REC. DATE</u>
JACK 21F	1	2745	25/09/86
JACK 27	9	2748	02/10/86
JACK 28	9	2749	02/10/86
JACK 30A	1	2753	16/10/86
JACK 30B	1	2754	16/10/86
JACK 6	3	2723	12/09/86
L252 CG	1	-	-
L721 CG	1	-	-
YJ 12	9	2681	05/08/86
YJ 13	20	2682	05/08/86
YJ 14	3	2683	05/08/86

Figure 2. illustrates the location of the property with respect to these claims.

Prior to acquisition by Homestake in 1986, the only known work on the property was in 1899, when owner/operator Lord Hamilton had 29 meters of underground working completed on a showing known historically as the 'Anaconda'. The following description of the showing comes from the 'Northern B. C. Mineral Inventory', prepared by Archer, Cathro & Associates Ltd. (1981).

"Narrow quartz stringers are associated with magnesite and carbonate altered lenses within a serpentinized Mesozoic ultramafic intrusion. A 15 to 28 cm wide quartz vein in an old crosscut strikes N and dips 72°W. Four channel samples across thin vein all returned trace Au. Where seen on surface, this vein is highly irregular and could not be traced for any distance. Microscopic inspection of the magnesite showed that it contains minor pyrite, mariposite and occasionally galena."

Section 2.4. of this report briefly outlines the general geology of the property, and a preliminary economic assessment of the property potential.



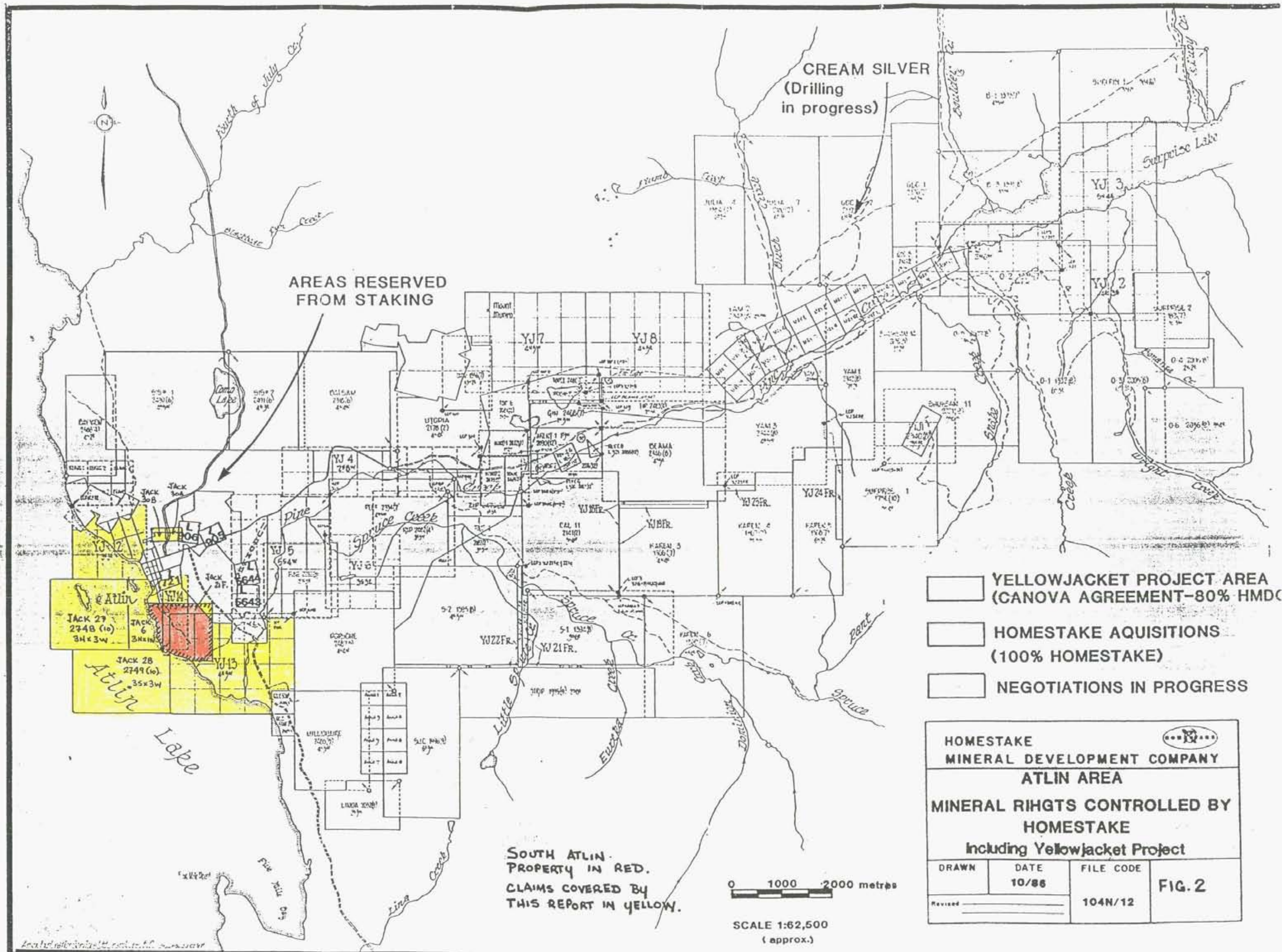
.....
 HOMESTAKE
 MINERAL DEVELOPMENT COMPANY

SOUTH ATLIN PROPERTY
 British Columbia

LOCATION MAP

DRAWN	DATE	FILE CODE
KMC	10/85	

FIGURE 1



AREAS RESERVED FROM STAKING

CREAM SILVER
(Drilling in progress)

- YELLOWJACKET PROJECT AREA (CANOVA AGREEMENT-80% HMD)
- HOMESTAKE AQUISITIONS (100% HOMESTAKE)
- NEGOTIATIONS IN PROGRESS

HOMESTAKE MINERAL DEVELOPMENT COMPANY			
ATLIN AREA			
MINERAL RIHGTs CONTROLLED BY HOMESTAKE			
Including Yellowjacket Project			
DRAWN	DATE	FILE CODE	FIG. 2
	10/86	104N/12	
Revised			

SOUTH ATLIN PROPERTY IN RED.
CLAIMS COVERED BY THIS REPORT IN YELLOW.

0 1000 2000 metres
SCALE 1:62,500 (approx.)

Archival reference: 104N/12, 104N/13, 104N/14, 104N/15, 104N/16, 104N/17, 104N/18, 104N/19, 104N/20, 104N/21, 104N/22, 104N/23, 104N/24, 104N/25, 104N/26, 104N/27, 104N/28, 104N/29, 104N/30, 104N/31, 104N/32, 104N/33, 104N/34, 104N/35, 104N/36, 104N/37, 104N/38, 104N/39, 104N/40, 104N/41, 104N/42, 104N/43, 104N/44, 104N/45, 104N/46, 104N/47, 104N/48, 104N/49, 104N/50, 104N/51, 104N/52, 104N/53, 104N/54, 104N/55, 104N/56, 104N/57, 104N/58, 104N/59, 104N/60, 104N/61, 104N/62, 104N/63, 104N/64, 104N/65, 104N/66, 104N/67, 104N/68, 104N/69, 104N/70, 104N/71, 104N/72, 104N/73, 104N/74, 104N/75, 104N/76, 104N/77, 104N/78, 104N/79, 104N/80, 104N/81, 104N/82, 104N/83, 104N/84, 104N/85, 104N/86, 104N/87, 104N/88, 104N/89, 104N/90, 104N/91, 104N/92, 104N/93, 104N/94, 104N/95, 104N/96, 104N/97, 104N/98, 104N/99, 104N/100

2.3 WORK COMPLETED

During the period June 11 through July 1 of this year (1987), the following work was completed on the property;

- 13.5 kilometers of flagged-line grid were established on the property.
- detailed geological mapping of the property was completed, involving 40 man-days of work.
- in the course of mapping, an extensive lithogeochemical sampling program was carried out. One hundred and sixty samples were collected and subsequently forwarded to Acme Analytical Laboratories in Vancouver for multi-element analysis, including Au, Ag, Cu, Pb, Zn.
- total field magnetic, vertical gradient magnetic, and VLF-EM surveys were completed over the 12.3 kilometers of established grid-lines (excluding the 1.2 kilometer baseline).

2.4 GENERAL GEOLOGICAL SETTING AND ECONOMIC ASSESSMENT

The South Atlin Property lies near the western edge of the northwest trending Atlin Terrane, which is underlain by upper Paleozoic oceanic crust (Monger, 1975). It is correlated with the Cache Creek Group rocks of southern and central British Columbia. Within the Atlin Terrane, intermediate to mafic flows are overlain by cherts, immature clastic sediments, and thick shallowwater carbonate rocks. Discordant granitic plutons range in age from late Jurassic to early Tertiary. Remnant Tertiary volcanic and sedimentary rocks are found throughout the area.

The majority of lode-type gold mineralization within the Atlin Terrane is hosted in hydrothermally altered (silica-carbonate-mariposite) ultramafic rocks proximal to their intrusive or thrust-faulted contacts with rocks of the Cache Creek Group volcanics along major shear structures. Gold mineralization appears to be exclusively associated with quartz and quartz-carbonate vein systems within the aforementioned altered host rocks, with in most cases a strong correlation between gold and the presence of gangue sulphides including galena, sphalerite, chalcopyrite, pyrite, and tetrahedrite.

The South Atlin Property is underlain almost exclusively by ultramafic rocks, predominantly serpentized, but with several areas of strong hydrothermal alteration, to a silica-carbonate-mariposite bearing ultramafic rock. As such, the property has potential for hosting significantly auriferous quartz vein systems similar to those seen elsewhere in the Atlin Camp.

3. DETAILED TECHNICAL DATA

3.1 GEOLOGICAL MAPPING

3.1.1. METHODS EMPLOYED

As mentioned, 13.5 kilometers of flagged-line grid were established on the property, to provide control during geological mapping and subsequent geophysical survey. The lines were emplaced by use of a Brunton Compass and hip-chain, the relatively light bush ensuring a high degree of accuracy. An arbitrary 0+00 point was chosen on the shore of Lake Atlin, from which the baseline extended 1.2 kilometers due east. Cross-lines were established at 100 meter intervals, extending north from baseline an average of 400 meters, and south from baseline an average of 600 meters. Stations were established on these cross-lines at 20 meter intervals.

All outcrops encountered on the property were tied into existing grid lines with compass and hip chain. The boundaries of all encountered outcrops were followed and mapped using, again, compass and hip chain, ensuring very accurate physical location of all outcrop on the property.

In the course of mapping, at the very detailed scale of 1:1,000, all outcrops were described with regards to their lithology, structural orientation, and the presence or absence of alteration, mineralization, and veining. Contacts between different lithologies, and between altered and unaltered lithologies, were meticulously followed and mapped in detail, although many such contacts proved to be highly irregular.

The results of the mapping program appear in Appendix I, as east and west sheets of a 1:1,000 geological plan map. Note that the east and west sheets directly adjoin one another, with no overlap. Note also that the legend, and all other pertinent information such as scale, etc., appear on the west map sheet only.

3.1.2 RESULTS AND INTERPRETATION

Five major lithological types outcrop on the property, and are briefly discussed below; (note the numbers correspond with those appearing on the map legend).

UNIT 2 - SERPENTINIZED ULTRAMAFIC

this unit comprises the majority of rock on the property, outcropping extensively throughout the southern portion of the ground. The rock is generally massive, and weathers a characteristic khaki colour. Predominantly very fine grained, fresh surfaces range from jet black to bright light green in colour, depending upon the degree of serpentinization. The majority of the exposures are strongly serpentinized, with an average of probably 60-70% serpentine after olivene. In some places the rock is notably porphyritic, with phenocrysts of pyroxene to 2-5 mm and 15-20% of the rock. These more resistant phenocrysts typically stand out in relief on weathered surfaces, and in a few

locations phenocryst rich bands, indicative of primary differentiation within the ultramafic intrusives, can be seen. The rocks are generally strongly magnetic. In a few locations the ultramafics are weakly talcose, usually in proximity to UNIT 3, completely altered (silica-carbonate-mariposite) ultramafic rocks.

UNIT 3 - COMPLETELY ALTERED (\pm SILICA \pm CARBONATE \pm MARIPOSITE)
ULTRAMAFIC ROCKS

- this rock type is the second most common outcropping on the property, occurring as a thick east-west trending band across the northern part of the ground, a thinner band across the southernmost portion of the property, and several small 'pods' within the serpentinized ultramafic. The rock type is characterized by a bright orange rusty weathering, and a beige to gray fresh surface, with usually complete replacement of ferromagnesian minerals by both magnesite and ferroan dolomite (with in places some ankerite). Typically there is some silica/silicification, and in places the rock is almost cherty in appearance. Mariposite is usually present as disseminated blebs throughout the rock, in places to as much as 30%, but more typically in the 5-10% range. The rock is usually strongly fractured, with predominantly magnesite and occasionally quartz fracture filling, but fracture orientations are random (i.e. at no preferred orientation) and the unit rarely exhibits any strong or consistent foliation.
- Contacts with the serpentinized ultramafics are occasionally knife sharp, but more commonly transitional over a few meters, with carbonate increasing at the expense of serpentine and talc.

UNIT 4 - DIABASE AND GABBRO

- a few thin dykes of diabase and gabbro outcrop on the property, notably along Lake Atlin in the northwest section of the property. The dykes range in thickness from less than 1 meter to 15 meters, and predominantly trend north-south with vertical dips, although other orientations are present. the dykes are generally fine grained, massive non-magnetic, and with a well developed diabasic texture.

UNIT 5 - FELDSPAR (\pm QUARTZ) PORPHYRY

- several young (cutting the diabase, and possibly related to the Fourth of July Creek Batholith of Jurassic age) porphyritic felsic dykes outcrop on the property. The dykes exhibit no preferred orientation, probably having utilized pre-existing zones of weakness or major fractures as conduits for emplacement. The dyke rock consists of an aphanitic light gray to green felsic groundmass, with 25-35% large (to 5 mm) plagioclase phenocrysts, and occasional (to 5% of the rock) blue to gray quartz phenocrysts. The dykes are commonly mineralized, with up to 5% disseminated pyrite cubes, and very occasionally minor disseminated galena cubes.

UNIT 9 (b) - ANDESITE (FELDSPAR) PORPHYRY

- several dykes of a more intermediate composition also outcrop on the property, again at all orientations. These dykes are characterized by an intermediate andesitic appearing groundmass, with 25-30% small (to 2-3 mm) plagioclase phenocrysts, and 10-15% small (1-2 mm) ferromagnesian phenocrysts (probably hornblende).

The property, then, is underlain almost exclusively by ultramafic rocks, either serpentinized or intensely hydrothermally altered. There is no readily identifiable structure associated with the hydrothermal alteration, and apart from a few observed east-west trending contacts between units 2 and 3, there is very little structural information to be had from the property.

Quartz and quartz-carbonate veins and vein stockworks are rare on the property, the notable exceptions being;

- at L10E, 1+60N (see geology map)
- at L8E, 0+80N (see geology map)
- at L7E, 1+60N (see geology map)
- at L6E, 0+40N (see geology map)
- at L0+40, 3+40N (see geology map)

The relative economic merit of these veins and vein stockworks is discussed in a following section of this report. (3.2.2.)

3.2 LITHOGEOCHEMICAL SAMPLING

3.2.1 METHODS EMPLOYED

In the course of mapping, one hundred and sixty (160) bedrock samples were collected from the property, and forwarded to Acme Analytical Laboratories in Vancouver for 30 element geochemical ICP analysis. In addition, all samples were analyzed for gold by atomic absorption methods.

Obviously, the purpose of the extensive sampling program was to evaluate the economic potential of the large areas of hydrothermally altered ultramafic rock exposed on the property. In addition to the gold analyses, the wide spectrum of elements analyzed for by the ICP method provides some very useful trace-element geochemical data. Gold mineralization in the Atlin Terrane often occurs with associated highly elevated contents of Cu, Zn, Pb, Sb, As, Cd and Ag, all of which are part of the 30 element ICP analytical package. Elevated contents of these element, even in the absence of anomalous gold values, may serve as 'pathfinders' to gold mineralization.

The ICP geochemical data appears tabulated in Appendix 2. All sample locations are plotted on the enclosed geology plan map in Appendix 1, followed in parenthesis by the sample gold content in ppb, as determined by atomic absorption.

3.2.2. RESULTS AND INTERPRETATION

Of the 160 samples collected from the property, 19 returned weakly anomalous gold values ranging from 720 ppb to 20 ppb. Below is a brief description of these anomalous samples;

L0+40W, 3+40N - two small pits expose a quartz-carbonate vein of indeterminate size or orientation, and the following samples were taken from those pits.

BR-02-1-36291 - a grab sample of the quartz-carbonate vein, locally carrying minor galena, returned an assay of 140 ppb Au, with anomalous associated trace-element assays of 4634 ppm Pb, 815 ppm Zn, 39.6 ppm Ag, 32 ppm Cd, and 6 ppm Sb.

BR-02-1-36292 - a grab sample of pyritic silica-carbonate-mariposite altered ultramafic wallrock immediately adjacent to the vein, returned an assay of 185 ppb Au, with 523 ppm Cu, 910 ppm Pb, 11.7 ppm Ag, and 195 ppm As.

BR-02-1-36293 - a grab sample of the quartz-carbonate vein returned an assay of 330 ppb Au, with 156 ppm Cu, 11.707 ppm Pb, 5206 ppm Zn, 95.3 ppm Ag, 162 ppm Cd, and 30 ppm Sb.

BR-02-1-36294 - a third grab from the quartz-carbonate vein, returned an assay of 720 ppb Au, with 5233 ppm Pb, 2015 ppm Zn, 47.3 ppm Ag, and 72 ppm Cd.

These four samples represent the most significant anomalies encountered on the property, and warrant further attention. A program of power stripping is recommended, to further expose the vein, as well as a locally closely spaced soil geochemical survey around the pits exposing the vein, in an attempt to further delineate this anomalous vein or vein system. In the vicinity around the aforementioned pits, the following samples also returned anomalous gold values;

L1W, 3+20N BR-02-1-36306 - a grab sample from a strongly silicified, carbonatized mariposite bearing altered ultramafic, with 15% thin quartz stringers at random orientations, and 1% disseminated pyrite, returned an assay of 30 ppb Au, with 1.9 ppm Ag.

L1+20W, 3+40N BR-02-1-36295 - a grab sample from a strongly silicified, carbonatized, mariposite bearing altered ultramafic, with locally 30% threadlike quartz-carbonate stringers, returned an assay of 175 ppb Au, with 135 ppm Pb, 208 ppm Zn, 1.2 ppm Ag, 6 ppm Cd and 7 ppm Sb.

L1+60W, 3+40N BR-02-1-36296 - a grab sample from the waste rock dump beside the adit at the old Anaconda workings, of intensely silicified ultramafic with 15% thin chalcedonous quartz stringers and 5% disseminated pyrite, returned an assay of 33 ppb Au and 0.7 ppm Ag.

L1+60W, 3+40N BR-02-1-36318 - a 5 meter wall channel sample from underground in the Anaconda adit, across strongly carbonatized, silicified, mariposite bearing altered ultramafic rock, returned an assay of 115 ppb Au, with 344 ppm As.

L1+60W, 3+40N BR-02-1-36321 - a 5 meter wall channel sample from underground in the Anaconda adit, across strongly carbonatized, silicified, mariposite bearing altered ultramafic rock, returned an assay of 25 ppb Au.

L1+60W, 3+40N BR-02-1-36309 - a grab from underground in the Anaconda adit, of a weakly carbonaceous fault breccia, returned an assay of 24 ppb Au.

L6+80E, 4+40S BR-02-1-36167 - a grab sample from a highly sheared felsic 'feldspar porphyry' dyke, returned an assay of 140 ppb Au.

L6+80E, 4+20S BR-02-1-36169 - a grab sample from strongly carbonatized, silicified, mariposite bearing altered ultramafic, with 30% secondary quartz veins to locally 10 cm, returned an assay of 131 ppb Au, with 10.0 ppm Ag, 533 ppm As, and 5 ppm Sb.

L1E, 1+00N BR-02-1-36261 - a grab sample from strongly carbonatized, silicified mariposite bearing altered ultramafic, locally with 35% thin quartz veins at random orientations, returned an assay of 34 ppb Au.

L0+40E, 1+60N BR-02-1-36271 - a grab sample of a brecciated quartz-carbonate vein hosted in a thin felsic feldspar porphyry dyke, returned an assay of 33 ppb Au, with 0.7 ppm Ag.

L0+00, 2+60N BR-02-1-36275 - a grab sample from a thin breccia zone within intensely silicified ultramafic rock, returned an assay of 20 ppb Au, with 136 ppm Pb, 145 ppm Zn, 1.2 ppm Ag and 4 ppm Cd.

L2+50E, 1+40S BR-02-1-36188 - a grab sample from a 15 cm quartz vein with minor disseminated pyrite and galena, returned an assay of 46 ppb Au, with 5899 ppm Pb, 575 ppm Zn, 72.2 ppm Ag, 16 ppm Cd, and 4 ppm Sb.

L1+20E, 0+60S BR-02-1-36191 - a grab sample from a strongly silicified ultramafic outcrop returned an assay of 121 ppb Au.

L1+60E, 0+60S BR-02-1-36192 - a grab sample from a strongly carbonatized mariposite bearing altered ultramafic with 20% thin quartz stringers, returned an assay of 30 ppb Au, with 228 ppm Pb, 152 ppm Zn, 4.0 ppm Ag, and 191 ppm As.

While none of these anomalies are spectacular, in a camp that is characterized by either complete absence of anomalous gold or weak haloes around mineralized veins, they all warrant further investigation. As such, a program of more extensive lithochemical sampling around these anomalies, and closely spaced soil geochemical sampling over the anomalous areas, is recommended.

In addition to the above 19 samples that carried anomalous gold values, several samples carried significant trace, element (Cu, Pb, Zn, As, Ag, Sb, Cd) anomalies with no associated anomalous gold values. These areas also warrant further investigation by soil geochemical survey, in an attempt to delineate higher grade gold bearing veins.

All of the prominent quartz-vein stockworks discussed in Section 3.1.2. of this report, with the exception of the highly anomalous quartz vein exposed in the pits at L0+40W, 3+40N, failed to return any significant precious or trace-element geochemical anomalies, and as such must be regarded as barren systems warranting no further work.

3.3 GEOPHYSICAL SURVEYS

3.3.1. METHODS EMPLOYED

Scott Geophysics Ltd. of Vancouver were contracted to complete total magnetometer, vertical gradient magnetometer, and VLF-EM surveys on the South Atlin Property on behalf of Homestake Mineral Development Company. The work was completed in late June, comprising coverage of 12.3 kilometers of flagged line grid.

Both total field and vertical gradient magnetometer readings were taken at 20 meter intervals. All values were corrected for diurnal variation using a fixed base station sampling at 6 second intervals.

Station NPM, Lualualei, Hawaii, was used for the VLF-EM survey. Readings of horizontal field strength, in-phase, and quadrature were taken at 20 meter intervals.

Instrumentation used in the survey was a Scintrex IGS2 configured to operate as a total field and vertical gradient magnetometer, and as a VLF-EM receiver. A Scintrex MP4 served as the base station magnetometer and cycled at 6 second intervals. Both units record all measurements in internal memory. All magnetometer measurements were corrected for diurnal variation with reference to the base station.

The survey data was archived, processed and plotted using a Corona PPC 400 microcomputer running the Scintrex IGS applications software and Scott Geophysics proprietary software.

Appendix 3 contains all pertinent maps, specifically;

- 1:5,000 Ground Magnetometer Survey, Total Field Data
- 1:5,000 Ground Magnetometer Survey, Total Field Contour Plan
- 1:5,000 Ground Magnetometer Survey, Vertical Gradient Data
- 1:5,000 Ground Magnetometer Survey, Vertical Gradient Contour Plan
- 1:5,000 VLF-EM Survey, Line Profile Plots
- 1:5,000 VLF-EM Survey, Fraser Filter Data
- 1:5,000 VLF-EM Survey, Fraser Filter Contour Plan

3.3.2. RESULTS AND INTERPRETATION

3.3.2.i) TOTAL FIELD MAGNETICS

As discussed in Section 3.1.2. of this report, the property is underlain almost exclusively by ultramafic rocks, either strongly serpentinized or strongly altered hydrothermally to a silica-carbonate-mariposite rock. The total field magnetic contour plan map crudely differentiates between the two, the serpentinite in the southern portion of the property being expressed as a strong magnetic high, generally above 58,500 nT and as high as 59,500 nT.

The hydrothermally altered ultramafics, in which most of the magnetite has been destroyed, are expressed as broad areas of lower magnetic signature, usually less than 58,000 nT, as seen in the northwest portion of the property.

The magnetic data also illustrates the general east-west structural trend, re-enforcing the interpretation derived from the mapping program.

3.3.2.ii) VERTICAL GRADIENT MAGNETICS

Vertical gradient magnetic data is very useful in interpreting and delineating structural trends, and as can be seen from the enclosed contour plan map, the east-west structural trend is very prominent.

The serpentinized ultramafics have a high relief expression, due to varying magnetite content, while the hydrothermally altered ultramafics have a flatter and lower magnetic expression.

3.3.2.iii) VLF-EM

Interpretation of the VLF-EM data is taken from the contoured Fraser Filter plan map. The data again confirms that the strongest structural trend on the property is in an east-west orientation.

Several prominent highs cross the property, and as no obviously conductive lithologies were noted during mapping (i.e. graphite horizons, exhalative sulphide horizons), these features are thought to represent shears (or a similar structural lineament).

4. ITEMIZED COST STATEMENT AND ALLOCATION OF EXPENDITURES4.1 FIELD COSTSSalaries and Wages

D. McIvor	June 11 - 30, 20 days @ \$115/day	\$2,300.00
J. Bozek	June 11 - 30, 20 days @ \$85/day	<u>\$1,700.00</u>
	SUB TOTAL	\$4,000.00
	+ 20% Overhead and Benefits .	<u>\$ 800.00</u>
	TOTAL SALARIES AND WAGES . .	\$4,800.00

Meals and Lodging

-	@ \$50.00 per day per man, X 40 man days	\$2,000.00
---	---	------------

Vehicle Costs

-	one 4 X 4 Suburban, 20 days fuel and maintenance, @ \$25/day	\$ 500.00
---	---	-----------

Analytical Costs

-	160 samples @ \$15.75/sample	\$2,520.00
	plus shipping costs	<u>\$ 350.00</u>
		\$2,870.00

Miscellaneous Equipment Costs

-	(topofil, flagging tape, sample bags, etc)	\$ 750.00
---	--	-----------

Geophysical Survey Costs

-	as billed by Scott Geophysics Ltd.,	
	12.3 kilometers of magnetometer and VLF surveys, @ \$150/kilometer	\$1,845.00
	12.3 kilometers of data, computer processing @ \$41/kilometer	<u>\$ 504.30</u>
	TOTAL	\$2,349.30
	TOTAL FIELD COSTS	\$13,269.30

4.2 DRAFTING AND REPORT PREPARATION COSTS

Salaries and Wages

D. McIvor	Oct 7 - 10,	
	420 days @ \$115/day	\$ 460.00
	+ 20% overhead and benefits . .	<u>\$ 92.00</u>
	TOTAL SALARIES AND WAGES . . .	\$ 552.00

Miscellaneous Costs

-	reproduction of maps, mylar,	
	drafting material	\$ 200.00
	TOTAL DRAFTING AND REPORT WRITING COSTS	\$ 752.00

4.3 TOTAL COSTS

TOTAL COSTS AS DETAILED ABOVE	<u>\$14,021.30</u>
---	--------------------

4.4 ALLOCATION OF EXPENDITURES

Prior to submission of work covered by this report, the following work has been filed against claims of the 'Lake' Group.

<u>CLAIM</u>	<u>UNITS</u>	<u>REC. NO.</u>	<u>REC. DATE</u>	<u>TOTAL GEOPHYS.</u>	<u>TOTAL GEOL.</u>	<u>TOTAL WORK</u>
JACK 21F	1	2745	25/09/86	46.83	28.29	75.12
JACK 27	9	2748	02/10/86	58.54	254.61	313.15
JACK 28	9	2749	02/10/86	00.00	254.61	254.61
JACK 30A	1	2753	16/10/86	115.90	28.29	144.19
JACK 30B	1	2754	16/10/86	147.51	28.29	175.80
L252 CG	1	-	-	76.10	28.29	104.39
L721 CG	1	-	-	134.63	28.29	162.92
YJ 12	9	2681	05/08/86	752.76	254.61	1,007.37
YJ 13	20	2682	05/08/86	2,761.68	565.80	3,327.48
YJ 14	3	2683	05/08/86	247.02	84.87	331.89
GROUP TOTAL 58				5,233.22	1,640.82	6,874.04

Allocation of expenditures covered by this report are as follows:

<u>CLAIM</u>	<u>UNITS</u>	<u>REC. NO</u>	<u>REC. DATE</u>	<u>GEOPHYS.</u>	<u>GEOL.</u>	<u>TOTAL WORK</u>
JACK 21F	1	2745	25/09/86	24.88	200.00	224.88
JACK 27	9	2748	02/10/86	386.85	2,000.00	2,386.85
JACK 28	9	2749	02/10/86	445.39	2,000.00	2,445.39
JACK 30A	1	2753	16/10/86	55.81	100.00	155.81
JACK 30B	1	2754	16/10/86	24.20	100.00	124.20
JACK 6	3	2723	12/09/86	00.00	00.00	00.00
L252 CG	1	-	-	00.00	00.00	00.00
L721 CG	1	-	-	00.00	00.00	00.00
YJ 12	9	2681	05/08/86	692.63	1,000.00	1,692.63
YJ 13	20	2682	05/08/86	572.52	2,100.00	2,672.52
YJ 14	3	2683	05/08/86	68.11	1,100.00	1,168.11
TOTALS	58			2,270.39	7,600.00	9,870.39

NOTE: This report of expenditures totals \$14,021.30, less the \$9,870.39 allocated here, leaves \$4,150.91 to be credited to our PAC account.

Total expenditures on all claims of the 'Lake' Group are summarized below:

<u>CLAIM</u>	<u>UNITS</u>	<u>REC. NO</u>	<u>REC. DATE</u>	<u>TOTAL GEOPHYS</u>	<u>TOTAL GEOL</u>	<u>TOTAL WORK</u>
JACK 21F	1	2745	25/09/86	71.71	228.29	300.00
JACK 27	9	2748	02/10/86	445.39	2,254.61	2,700.00
JACK 28	9	2749	02/10/86	445.39	2,254.61	2,700.00
JACK 30A	1	2753	16/10/86	171.71	128.29	300.00
JACK 30B	1	2754	16/10/86	171.71	128.29	300.00
JACK 6	3	2723	12/09/86	892.26	84.87	977.13
L252 CG	1	-	-	76.10	28.29	104.39
L721 CG	1	-	-	134.63	28.29	162.92
YJ 12	9	2681	05/08/86	1,445.39	1,254.61	2,700.00
YJ 13	20	2682	05/08/86	3,334.20	2,665.80	6,000.00
YJ 14	3	2683	05/08/86	315.13	1,184.87	1,500.00
TOTALS	<u>58</u>			<u>7,503.61</u>	<u>9,240.82</u>	<u>16,744.43</u>

This will hold claims JACK 21F, JACK 27, JACK 28, JACK 30A, JACK 30B, JACK 6, YJ12, and YJ13 in good standing for three years, and claim YJ14 in good standing for four years.

5. AUTHOR'S QUALIFICATIONS

- Duncan Forbes McIvor, do hereby state that;
- I am a graduate of the University of Waterloo, and hold an Honours Bachelor of Applied Science degree.
- I have been practising my profession as an exploration geologist on a full time basis since 1982.
- I have personal knowledge that all information presented in this report is true and accurate.

Duncan McIvor
October 6, 1987
Atlin, B. C.

6. SELECTED BIBLIOGRAPHY

Aitken, J. D.

1959: Atlin Map Area, B. C. - Geological Survey of Canada,
Memoir 307

Monger, J. W. H.

1975: Upper Paleozoic Rocks of the Atlin Terrane, Northwestern
B. C. and South-Central Yukon; Geological Survey of Canada
Paper 74-47.

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B W AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: Rock Chips AU: ANALYSIS BY AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: JUNE 29 1987

DATE REPORT MAILED: July 3/87

ASSAYER... DEAN TOYE, CERTIFIED B.C. ASSAYER

HOMESTAKE MINERAL PROJECT BR-5710 File # 87-2070 Page 1

SOUTH ATLIN GEOCHEM

Table with columns: SAMPLE#, HG, CU, PB, ZN, AG, NI, CO, MN, FE, AS, U, AU, TH, SR, CD, SB, BI, V, CR, P, LA, CR, MG, BA, TI, B, AL, NA, K, W, AU1, PPB. Rows include sample IDs like BR-02-1-36164 through BR-02-1-36211.

HOMESTAKE MINERALS PROJECT-BR-5710 FILE # B7-2070

SAMPLE#	MO PPH	CU PPH	PB PPH	ZN PPH	AG PPH	NI PPH	CO PPH	MN PPH	FE %	AS PPH	U PPH	AU PPH	TH PPH	SR PPH	CD PPH	SB PPH	BI PPH	V PPH	CA %	P %	LA PPH	CR PPH	MG %	BA PPH	TI %	B PPH	AL %	NA %	K %	M PPH	AU# PPB	
BR-02-1-36212	1	3	4	15	.1	1022	56	574	2.96	4	5	ND	1	3	1	2	2	1	.04	.004	2	130	17.77	4	.01	7	.01	.01	.01	1	3	✓
BR-02-1-36213	1	7	4	18	.2	1254	48	749	2.31	55	5	ND	1	99	1	2	2	3	3.00	.006	2	192	18.76	11	.01	3	.01	.01	.01	1	7	✓
BR-02-1-36214	2	6	3	17	.2	1181	48	589	3.40	5	5	ND	1	42	1	2	2	4	.64	.005	2	165	18.08	5	.01	2	.01	.01	.01	2	1	✓
BR-02-1-36215	1	4	2	16	.1	646	32	210	1.76	5	5	ND	1	5	1	2	2	3	.12	.008	2	109	15.74	17	.01	3	.04	.01	.01	1	1	✓
BR-02-1-36216	1	4	3	9	.2	772	33	343	2.33	7	5	ND	1	8	1	2	2	1	.19	.002	2	63	14.20	3	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36217	1	6	5	12	.2	1107	42	567	2.59	5	5	ND	1	6	1	4	2	1	.16	.002	2	75	16.75	2	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36218	1	4	2	6	.1	431	20	233	1.61	6	5	ND	1	2	1	2	2	2	.08	.003	2	67	9.14	3	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36219	1	6	4	17	.2	1068	36	423	2.46	6	5	ND	1	22	1	2	2	5	.26	.005	2	185	11.61	16	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36220	1	7	2	3	.1	100	4	80	.60	6	5	ND	1	3	1	2	2	1	.06	.002	2	18	1.62	2	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36221	1	7	4	13	.1	874	38	520	2.82	17	5	ND	1	5	1	2	2	2	.10	.004	2	110	15.59	6	.01	2	.01	.01	.01	1	2	✓
BR-02-1-36222	1	8	5	21	.2	1279	45	464	3.01	22	5	ND	1	16	1	2	2	6	.23	.005	2	214	12.72	13	.01	2	.02	.01	.01	1	8	✓
BR-02-1-36223	1	3	4	18	.2	1325	48	487	4.46	119	5	ND	1	44	1	3	2	9	.51	.006	2	226	16.97	15	.01	2	.05	.01	.02	1	1	✓
BR-02-1-36224	1	5	5	21	.2	1396	50	624	4.19	7	5	ND	1	28	1	2	2	16	.59	.006	2	297	19.15	28	.01	20	.07	.01	.03	1	2	✓
BR-02-1-36225	1	3	2	21	.1	1355	49	740	3.71	17	5	ND	1	24	1	5	2	7	.25	.004	2	330	18.83	73	.01	2	.10	.01	.01	2	1	✓
BR-02-1-36226	1	6	2	12	.1	953	32	474	2.69	48	5	ND	1	20	1	2	2	5	.51	.003	2	118	10.81	7	.01	2	.03	.01	.01	1	1	✓
BR-02-1-36227	1	7	4	19	.1	1423	52	462	3.23	43	5	ND	1	113	1	3	2	2	.72	.005	2	122	17.19	13	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36228	2	6	2	15	.2	1318	41	421	3.60	35	5	ND	1	38	1	2	2	10	.48	.003	2	382	19.96	18	.01	2	.10	.01	.02	1	1	✓
BR-02-1-36229	1	13	5	24	.2	1194	51	670	3.89	75	5	ND	1	2	1	2	2	1	.04	.003	2	71	21.79	3	.01	2	.01	.01	.01	1	2	✓
BR-02-1-36230	1	101	6	14	1.2	230	20	248	1.93	252	5	ND	1	78	1	2	2	3	.93	.006	2	53	5.56	14	.01	2	.02	.01	.01	1	9	✓
BR-02-1-36231	3	7	31	55	.4	223	27	323	4.62	192	5	ND	5	77	1	5	2	14	.15	.023	11	44	4.54	101	.01	2	.35	.01	.07	1	7	✓
BR-02-1-36232	2	56	7	43	.6	1269	49	649	4.00	70	5	ND	1	110	1	2	2	8	1.46	.013	2	147	11.47	38	.01	2	.06	.01	.01	1	1	✓
BR-02-1-36233	1	39	2	26	.1	1261	46	802	3.98	32	5	ND	1	10	1	2	2	3	.25	.004	2	88	18.86	9	.01	2	.02	.01	.01	1	1	✓
BR-02-1-36234	1	10	3	29	.1	1431	52	569	3.56	32	5	ND	1	6	1	2	4	1	.12	.005	2	83	17.47	9	.01	2	.03	.01	.01	2	2	✓
BR-02-1-36235	1	8	2	26	.1	1285	51	594	3.58	53	5	ND	1	4	1	2	2	2	.09	.004	2	73	18.70	8	.01	3	.01	.01	.01	1	4	✓
BR-02-1-36236	1	6	2	23	.1	1229	43	630	3.31	29	5	ND	1	11	1	3	2	5	.34	.004	2	104	16.99	10	.01	2	.03	.01	.01	1	1	✓
BR-02-1-36237	1	39	7	25	.3	1328	53	569	3.33	44	5	ND	1	8	1	2	2	2	.33	.004	2	82	16.51	7	.01	2	.01	.01	.01	1	2	✓
BR-02-1-36238	1	13	5	27	.1	1441	54	665	3.47	25	5	ND	1	10	1	2	2	2	.30	.005	2	105	17.71	10	.01	2	.02	.01	.01	1	1	✓
BR-02-1-36239	1	65	8	24	.4	1346	58	510	3.51	44	5	ND	1	10	1	4	2	2	.30	.004	2	82	16.92	8	.01	2	.02	.01	.01	1	2	✓
BR-02-1-36240	1	16	4	25	.1	1443	53	769	4.24	24	5	ND	1	10	1	3	2	4	.22	.005	2	121	18.85	7	.01	2	.02	.01	.01	1	1	✓
BR-02-1-36241	1	32	5	36	.1	848	33	371	3.21	29	5	ND	2	67	1	3	2	39	.77	.024	7	149	10.21	42	.01	3	.25	.01	.06	2	1	✓
BR-02-1-36242	1	6	60	10	.2	157	8	209	1.54	144	5	ND	1	44	1	4	2	4	.91	.007	2	14	.80	32	.01	2	.05	.01	.02	1	6	✓
BR-02-1-36243	1	18	129	24	.6	178	13	359	3.14	194	5	ND	1	46	1	2	2	10	.78	.029	3	30	.93	69	.01	2	.15	.01	.04	1	15	✓
BR-02-1-36244	4	5	10	6	.3	113	9	84	2.45	545	5	ND	2	23	1	99	2	6	.05	.009	8	24	.12	36	.01	2	.12	.01	.05	1	4	✓
BR-02-1-36245	1	8	6	12	.2	30	5	447	1.84	27	5	ND	1	127	1	2	2	17	3.82	.006	2	11	2.60	14	.01	2	.09	.01	.03	1	13	✓
BR-02-1-36246	1	8	2	18	.2	824	31	294	2.42	21	5	ND	1	103	1	2	2	10	1.10	.004	2	106	12.60	10	.01	2	.04	.01	.01	1	2	✓
BR-02-1-36247	1	8	5	21	.1	1266	54	600	3.86	19	5	ND	1	53	1	2	2	3	.55	.005	2	100	18.88	8	.01	2	.01	.01	.01	1	1	✓
STD C/AU-R	21	59	37	138	7.1	69	29	1017	4.04	41	19	7	35	48	18	16	21	58	.46	.087	36	58	.87	182	.08	33	1.75	.06	.14	12	505	

36

HOMESTAKE MINERAL PROJECT-BR-5710 FILE # 87-2070

SAMPLE#	MO PPM	CU PPM	PB PPM	ZN PPM	AG PPM	NI PPM	CO PPM	MN PPM	FE %	AS PPM	U PPM	AU PPM	TH PPM	SR PPM	CD PPM	SB PPM	BI PPM	V PPM	CA %	P %	LA PPM	CR PPM	MG %	BA PPM	TI %	B PPM	AL %	WA %	K %	W PPM	AU# PPB	
BR-02-1-36248	2	6	2	17	.1	955	44	370	2.95	406	5	ND	1	3	1	12	2	3	.06	.005	2	76	13.66	13	.01	2	.01	.01	.01	1	3	✓
BR-02-1-36249	2	15	3	15	.1	772	37	300	2.49	17	5	ND	1	28	1	2	2	5	.65	.005	2	183	10.89	114	.01	2	.05	.01	.01	1	2	✓
BR-02-1-36250	2	15	2	14	.1	900	38	509	2.61	60	5	ND	1	54	1	3	2	5	.54	.002	2	198	16.67	4	.01	2	.04	.01	.01	1	7	✓
BR-02-1-36251	2	8	3	25	.1	1659	63	393	2.78	5	5	ND	1	8	1	3	2	5	.10	.006	2	106	11.04	57	.01	2	.02	.01	.01	1	3	✓
BR-02-1-36252	1	6	6	6	2.4	111	6	117	.77	76	5	ND	1	80	1	4	2	4	1.83	.002	2	70	2.32	35	.01	2	.04	.01	.01	1	1	✓
BR-02-1-36253	2	2	3	12	.1	1136	40	610	2.59	7	5	ND	1	369	1	2	2	7	5.45	.002	2	251	15.86	5	.01	2	.05	.01	.01	2	9	✓
BR-02-1-36254	2	7	6	28	.1	1364	56	926	4.36	15	5	ND	1	50	1	2	2	11	1.50	.006	2	167	15.98	11	.01	2	.09	.01	.01	2	2	✓
BR-02-1-36255	2	5	4	18	.1	1422	52	538	3.69	8	5	ND	1	56	1	2	2	4	.92	.004	2	123	19.68	13	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36256	2	13	5	16	.9	1091	44	771	2.92	218	5	ND	1	82	1	2	2	6	1.36	.005	2	160	13.93	20	.01	3	.16	.01	.01	1	15	✓
BR-02-1-36257	1	28	5	16	.1	834	31	223	2.26	11	5	ND	1	20	1	2	2	12	.42	.005	2	126	8.07	42	.01	2	.08	.01	.02	1	1	✓
BR-02-1-36258	2	7	3	11	.1	538	21	231	1.52	153	5	ND	1	4	1	7	2	3	.06	.003	2	47	5.52	16	.01	3	.01	.01	.01	1	1	✓
BR-02-1-36259	2	17	2	21	.1	1152	47	499	2.96	21	5	ND	1	3	1	2	2	4	.08	.006	2	109	14.21	7	.01	2	.02	.01	.01	1	1	✓
BR-02-1-36260	1	8	3	17	.1	1422	56	421	3.49	16	5	ND	1	4	1	2	4	1	.08	.003	2	48	18.11	3	.01	2	.01	.01	.01	1	7	✓
BR-02-1-36261	2	9	3	19	.4	1420	54	552	3.50	28	5	ND	1	3	1	2	3	1	.11	.003	2	118	20.35	4	.01	2	.01	.01	.01	1	34	✓
BR-02-1-36262	2	29	3	21	.1	924	37	487	2.82	38	5	ND	1	73	1	2	4	11	2.30	.005	2	152	12.18	25	.01	14	.04	.01	.01	1	2	✓
BR-02-1-36263	2	22	2	13	.1	952	50	817	3.29	34	5	ND	1	3	1	2	5	2	.16	.003	2	134	16.24	3	.01	2	.06	.01	.01	1	1	✓
BR-02-1-36264	1	24	6	23	.1	896	52	366	2.29	21	5	ND	1	5	1	2	2	2	.11	.005	2	53	5.52	19	.01	2	.01	.01	.01	1	1	✓
BR-02-1-36265	2	13	6	26	.1	527	40	772	4.47	90	5	ND	1	8	1	2	3	6	.20	.003	2	188	19.73	8	.01	2	.05	.01	.01	1	1	✓
BR-02-1-36266	1	7	2	19	.3	438	19	225	1.49	28	5	ND	1	2	1	2	2	3	.04	.003	2	56	4.51	9	.01	2	.02	.01	.01	1	1	✓
BR-02-1-36267	4	8	15	17	.2	313	17	213	1.62	25	5	ND	1	49	1	2	4	7	.68	.003	2	45	9.15	17	.01	2	.02	.01	.01	3	1	✓
BR-02-1-36268	2	6	5	16	.1	1039	50	708	3.61	14	5	ND	1	36	1	2	5	8	.66	.003	2	272	16.78	13	.01	2	.07	.01	.01	2	3	✓
BR-02-1-36269	2	4	26	35	.4	16	2	725	1.28	19	5	ND	1	216	1	2	2	7	8.08	.014	2	9	3.94	215	.01	2	.05	.10	.03	4	1	✓
BR-02-1-36270	2	4	4	11	.1	26	2	490	.81	6	5	ND	1	236	1	2	2	4	4.53	.009	2	11	2.37	56	.01	2	.03	.01	.02	1	2	✓
BR-02-1-36271	2	9	11	24	.7	50	12	1257	2.94	45	5	ND	3	501	1	2	2	20	11.41	.117	13	11	5.61	44	.01	2	.29	.18	.17	2	33	✓
BR-02-1-36272	2	12	10	62	.1	28	10	599	2.92	10	5	ND	3	106	1	2	2	31	2.74	.093	12	9	1.08	111	.01	4	.49	.01	.15	1	3	✓
BR-02-1-36273	1	7	4	22	.1	1254	44	590	3.45	37	5	ND	1	13	1	2	2	5	.27	.005	2	92	20.25	9	.01	2	.01	.01	.01	1	3	✓
BR-02-1-36275	1	18	136	145	1.2	161	10	256	1.49	11	5	ND	1	139	4	2	2	6	1.20	.008	2	15	2.80	73	.01	2	.17	.01	.09	1	20	✓
BR-02-1-36276	2	11	7	25	.3	1120	44	493	2.32	85	5	ND	1	100	1	2	3	2	1.10	.005	2	45	17.97	12	.01	2	.01	.01	.01	1	6	✓
BR-02-1-36277	1	3	6	10	.1	430	14	496	1.71	4	5	ND	1	525	1	2	3	9	11.11	.003	2	72	12.32	250	.01	2	.02	.15	.01	2	4	✓
BR-02-1-36278	1	26	5	14	1.9	1187	50	554	3.14	252	5	ND	1	60	1	11	3	3	.54	.003	2	93	18.49	13	.01	2	.01	.01	.01	1	2	✓
BR-02-1-36279	1	7	8	44	.3	36	8	447	2.00	10	7	ND	2	150	1	2	2	5	2.23	.097	7	1	1.04	77	.01	2	.33	.01	.17	1	4	✓
BR-02-1-36280	2	5	2	9	.2	552	25	576	2.64	80	5	ND	1	6	1	2	5	3	.17	.002	2	158	18.27	1	.01	2	.01	.01	.01	1	3	✓
BR-02-1-36281	2	9	2	21	.1	1880	60	528	3.10	51	6	ND	1	10	1	2	2	3	.21	.003	2	77	20.30	6	.01	3	.01	.01	.01	1	2	✓
BR-02-1-36282	2	50	10	66	.5	62	23	797	4.45	12	5	ND	6	305	1	2	2	95	5.23	.327	24	239	4.91	70	.02	2	1.31	.02	.12	1	1	✓
STD C/AU-R	21	60	30	138	7.0	69	28	1018	3.89	41	18	7	35	49	17	16	21	65	.46	.088	37	54	.84	184	.08	35	1.71	.87	.14	13	495	✓

37

W

GEOCHEMICAL/ASSAY CERTIFICATE

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-MNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B M AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: Rock Chips AU# ANALYSIS BY AA FROM 10 GRAM SAMPLE. AU# BY FIRE ASSAY

DATE RECEIVED: JUL 4 1987

DATE REPORT MAILED: July 15/87

ASSAYER: D. Jupp..DEAN TOYE, CERTIFIED B.C. ASSAYER

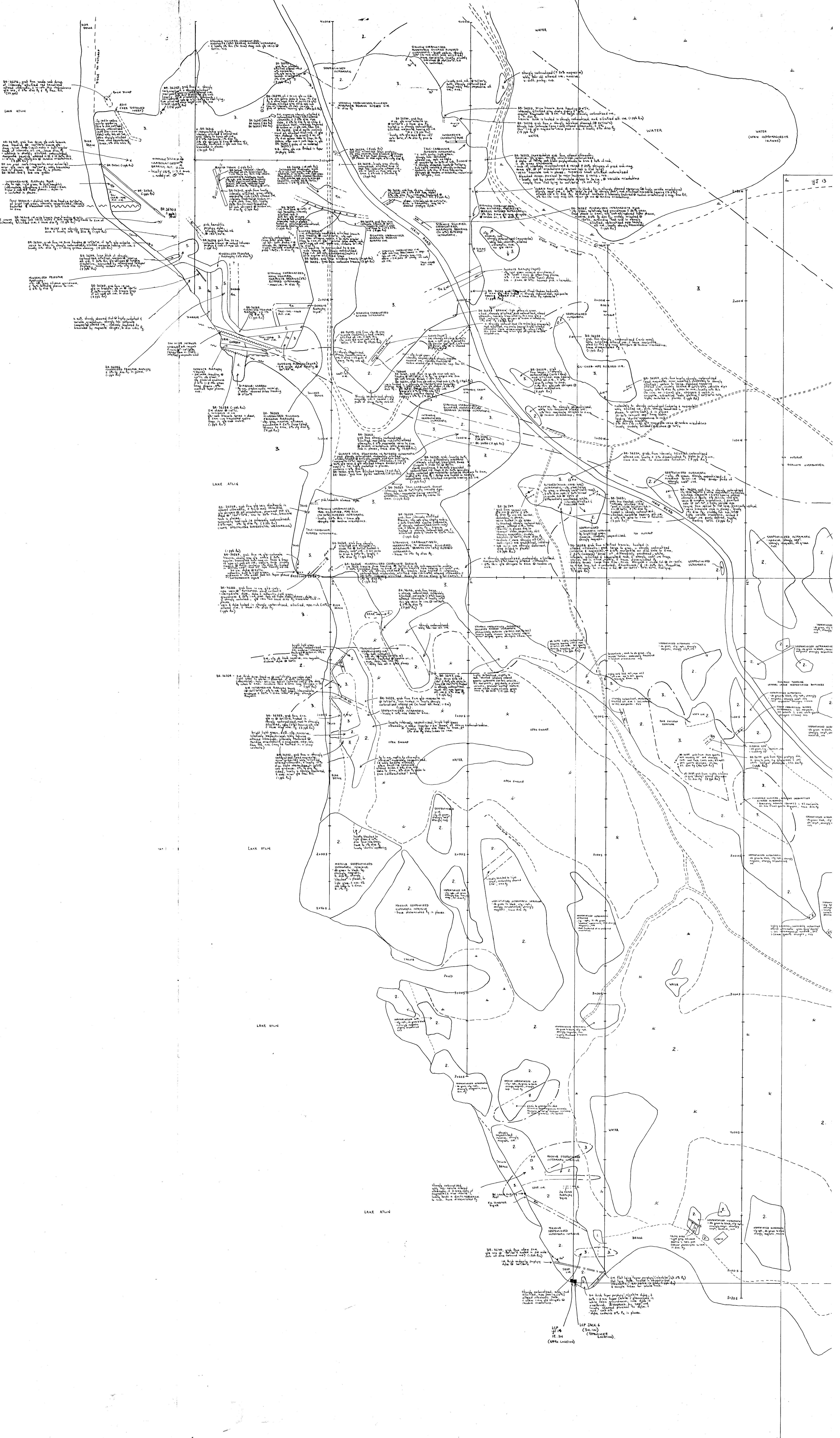
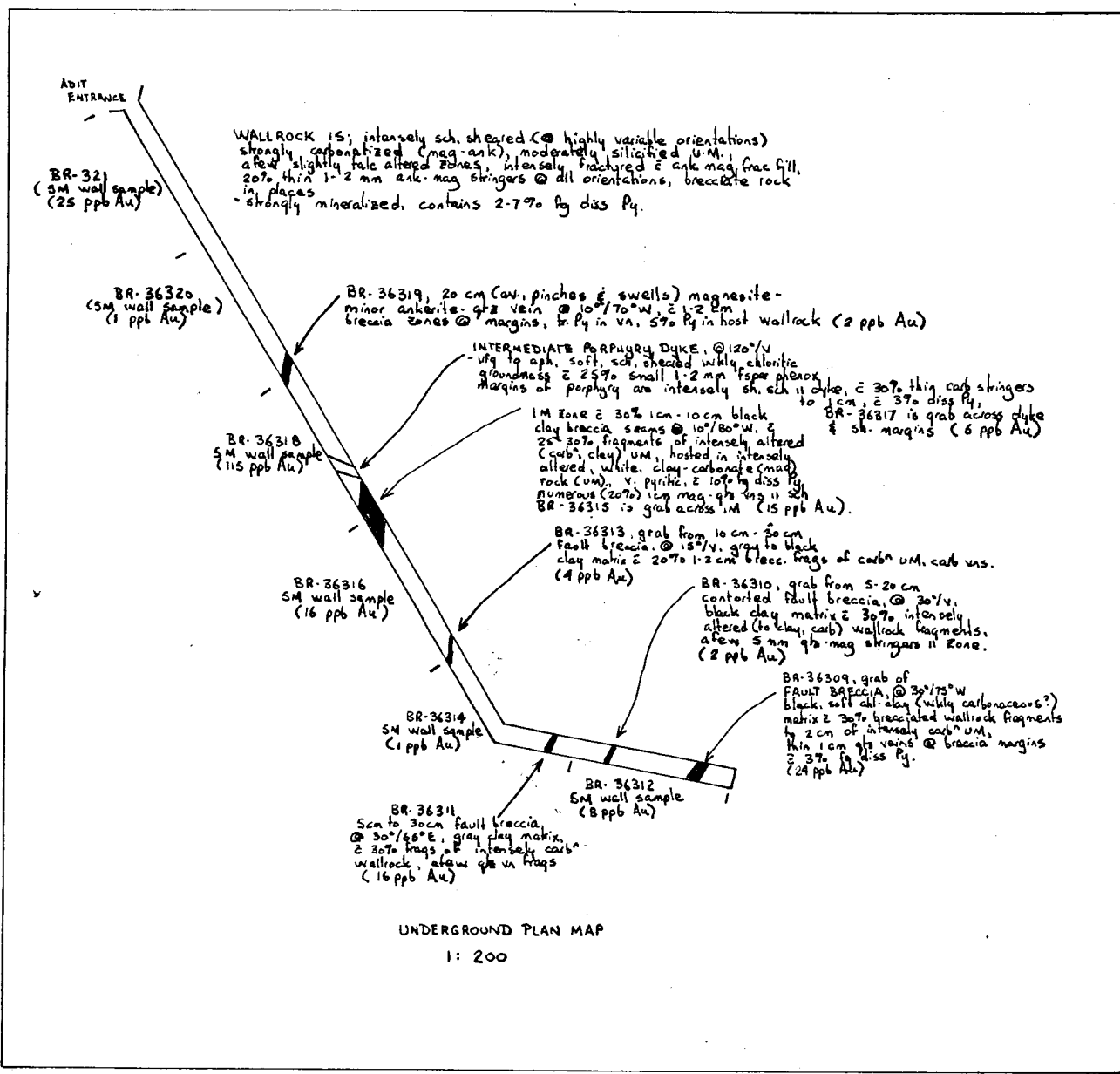
HOMESTAKE MINERAL (VAN) PROJECT - PA-5710 File # B7-2201 Page 1

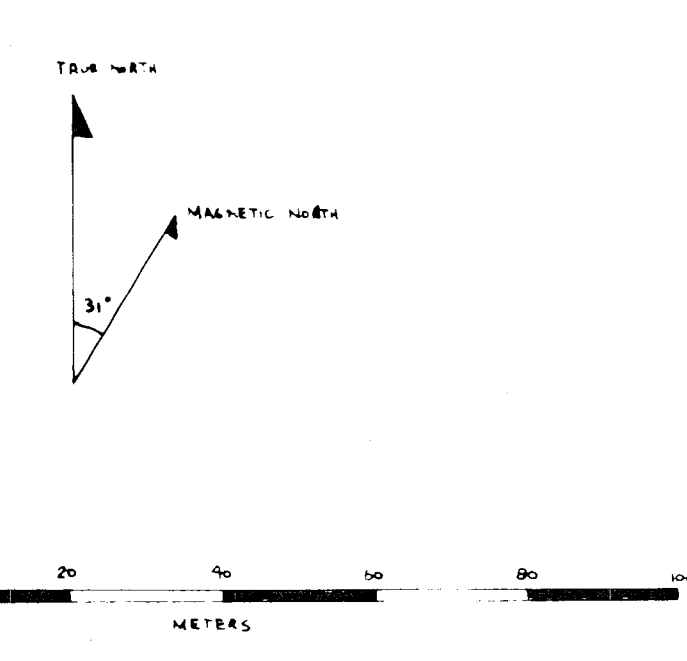
Table with columns for SAMPLE#, MO, CU, PB, ZN, AG, NI, CO, MN, FE, AS, U, AU, TH, SR, CD, SB, BI, V, CA, P, LA, CR, MG, BA, TI, B, AL, NA, K, W, AU#, AU#T. Includes handwritten labels 'SOUTH ATLIN', 'GEOCHEM', and 'NOT SOUTH ATLIN'.

HOMESTAKE MINERAL (VAN) PROJECT-PA-5710 FILE # 87-2201

SAMPLE#	MO PPM	CU PPM	PB PPM	ZN PPM	AG PPM	NI PPM	CO PPM	MN PPM	FE %	AS PPM	U PPM	AU PPM	TH PPM	SR PPM	CD PPM	SB PPM	BI PPM	V PPM	CA %	P %	LA PPM	CR PPM	MG %	BA PPM	TI %	B PPM	AL %	NA %	K %	W PPM	AU# PPB
BR-02-1 36306	2	8	3	19	1.9	1195	61	624	3.52	78	5	ND	1	27	1	6	2	5	.34	.006	2	159	22.68	6	.01	2	.01	.01	.01	1	30 ✓
BR-02-1 36307	2	2	13	11	.5	348	6	138	1.03	9	5	ND	1	376	1	2	2	9	5.60	.004	2	38	23.37	5	.01	2	.01	.01	.01	4	5 ✓
BR-02-1 36308	1	2	4	13	.1	1123	33	380	2.02	6	5	ND	1	185	1	2	2	4	1.49	.005	2	84	18.70	6	.01	2	.01	.01	.01	3	2 ✓
BR-02-1 36309	2	9	2	17	.1	1057	44	647	2.65	18	5	ND	1	25	1	2	2	8	.39	.006	2	155	19.35	34	.01	2	.14	.01	.02	1	24 ✓
BR-02-1 36310	1	6	2	19	.1	1301	50	572	3.36	13	5	ND	1	11	1	2	4	19	.20	.007	2	529	19.46	50	.01	2	.28	.01	.02	1	2 ✓
BR-02-1 36311	1	5	4	15	.1	1206	48	478	3.02	12	5	ND	1	162	1	2	2	15	1.70	.004	2	370	16.95	24	.01	2	.15	.01	.01	1	16 ✓
BR-02-1 36312	1	4	2	11	.1	1035	54	659	2.62	11	5	ND	2	15	1	2	2	6	.31	.003	2	199	18.73	8	.01	2	.05	.01	.02	2	8 ✓
BR-02-1 36313	2	5	2	14	.1	1302	51	498	3.09	26	5	ND	1	88	1	2	3	9	.88	.004	2	165	21.39	11	.01	9	.04	.01	.02	1	4 ✓
BR-02-1 36314	1	3	5	15	.1	1044	50	706	3.01	5	5	ND	1	18	1	2	3	14	.75	.004	2	460	19.14	46	.01	2	.14	.01	.01	1	1 ✓
BR-02-1 36315	1	9	12	20	.6	1278	52	548	2.95	45	5	ND	1	29	1	5	9	.42	.004	2	327	16.26	22	.01	2	.21	.01	.02	1	15 ✓	
BR-02-1 36316	2	8	4	18	.5	1318	57	632	3.33	92	5	ND	1	92	1	2	4	7	1.34	.003	2	233	20.67	17	.01	2	.05	.01	.01	2	16 ✓
BR-02-1 36317	2	11	7	41	.5	1149	49	633	3.47	59	5	ND	1	81	1	3	2	41	1.50	.020	6	243	14.34	228	.01	2	1.05	.01	.06	3	6 ✓
BR-02-1 36318	2	14	7	28	.4	1818	74	852	4.57	54	5	ND	1	23	1	2	2	5	.45	.003	2	231	23.83	5	.01	2	.04	.01	.01	2	15 ✓
BR-02-1 36319	2	3	2	6	.2	219	12	297	1.18	3	5	ND	1	902	1	2	2	5	17.92	.003	2	26	12.98	12	.01	2	.05	.28	.01	3	2 ✓
BR-02-1 36320	1	6	6	15	.2	1110	52	435	2.77	37	5	ND	1	20	1	2	5	7	.17	.003	2	264	18.10	13	.01	2	.06	.01	.01	1	1 ✓
BR-02-1 36321	1	7	2	9	.1	718	48	660	3.45	35	5	ND	1	5	1	2	2	2	.09	.002	2	81	17.18	2	.01	2	.01	.01	.01	1	25 ✓
BR-02-1 36322	1	27	2	26	.1	1682	66	780	4.05	9	5	ND	1	71	1	2	2	14	1.33	.004	2	357	21.86	22	.01	2	.06	.01	.01	3	1 ✓
BR-02-1 36323	1	6	5	18	.3	1139	45	469	2.41	8	5	ND	1	11	1	2	5	4	.20	.004	2	202	16.98	16	.01	7	.01	.01	.01	2	3 ✓
BR-02-1 36324	1	7	5	26	.3	878	67	939	3.36	24	5	ND	2	13	1	2	4	8	.45	.003	2	582	11.49	1	.01	2	.16	.01	.01	2	1
BR-02-1 36325	1	3	2	4	.4	149	5	150	.89	2	5	ND	1	49	1	2	2	2	.78	.003	2	25	5.19	4	.01	2	.01	.01	.01	1	1
STD C/AU-R	21	62	42	145	7.0	75	30	1065	3.63	44	16	8	38	51	19	16	22	61	.41	.094	43	59	.78	188	.09	35	1.67	.08	.14	13	480

20



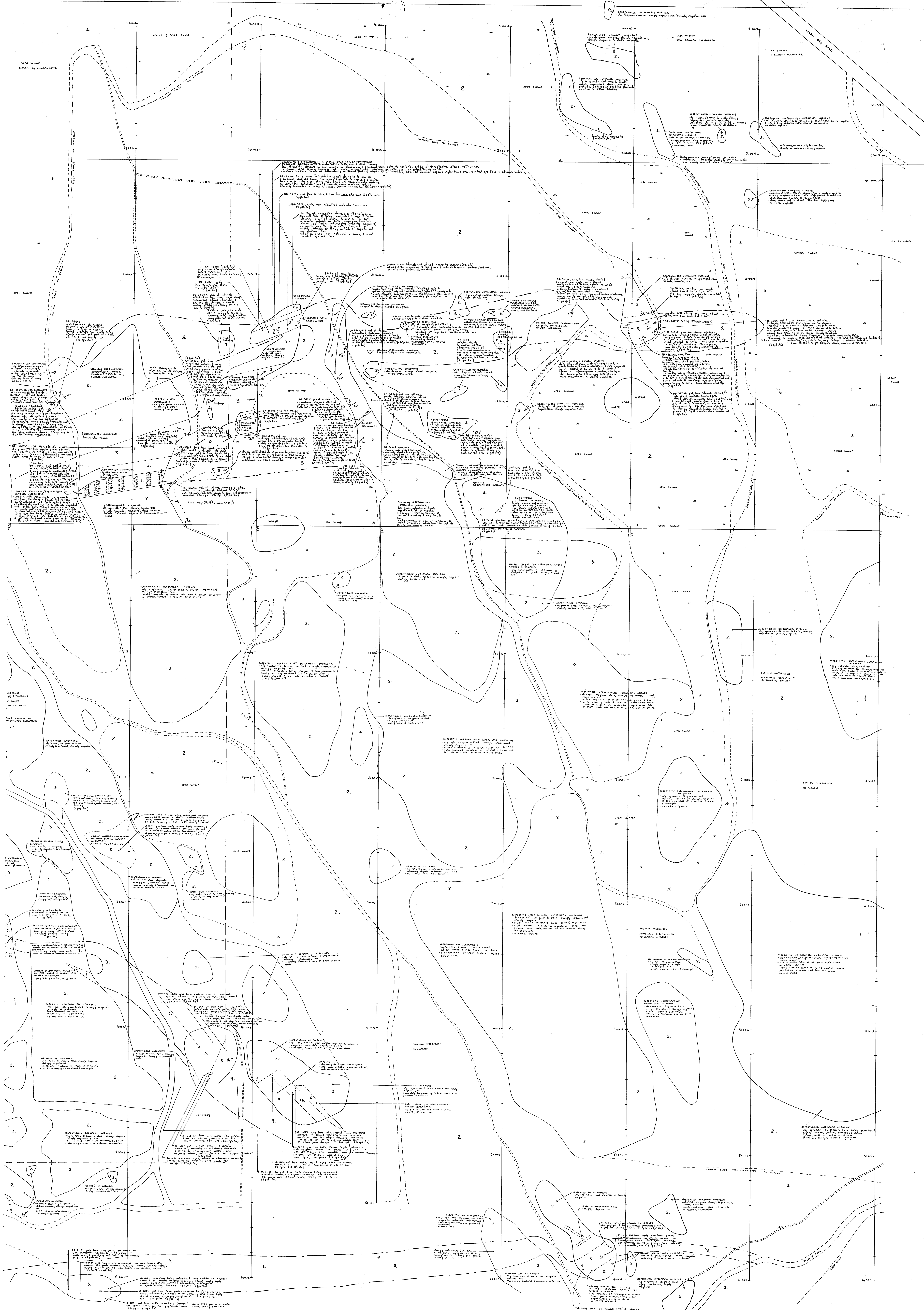


- LEGEND**
- 1 BASALT
 - 2 SERPENTINE (ALTERED ULTRAMAFIC INTROUSIVE)
 - 3 COMPLETELY ALTERED (SERPENTINE/SILICATE/MARSHALLITE/TALC) ULTRAMAFIC INTROUSIVE
 - 4 MAFIC INTROUSIVE (e.g. DIABASE, GABBRO)
 - 5 FELDSPAR PORPHYRY
 - 6 SYENITE
 - 7 DIORITE
 - 8 GREENSTONE
 - 9 ANDESITE (e.g. JORDANVILLE PORPHYRY)
 - 10 PYROXENITE
 - 11 GRAPHIC CHERT
 - 12 ARGILLITE
- FAULT
- SCHISTOSITY
- BEDDING
- QUARTZ VEIN (UNBLENDED)
- CONTACT (ASSUMED/UNASSUMED)
- SAMPLE LOCATION
- LIMIT OF THERMALIC FEATURE
- CLAIM PATH (LATER BY PALE 1 CLAIM)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535

HOMESTAKE		
MINERAL DEVELOPMENT COMPANY		
ATLIN AREA BRITISH COLUMBIA		
SOUTH ATLIN PROPERTY GEOLOGY		
WEST SHEET		
DRAWN DM	DATE 10/87	FILE CODE 104N/12
REVISED		



- LEGEND
- 1 BASALT
 - 2 SERPENTINITE (ALTERED ULTRAMAFIC INTRUSIVE)
 - 3 COMPLETELY ALTERED (CORRODED) SLUGGY MARBLES (ALC) ULTRAMAFIC INTRUSIVE
 - 4 MAFIC INTRUSIVE BY DARRIS
 - 5 FELDSPAR PORPHYRY
 - 6 SILEXITE
 - 7 DIORITE
 - 8 GREENSTONE
 - 9 ANDESITE OR ANDESITE PORPHYRY
 - 10 PYROXENITE
 - 11 GRAPHIC GNEISS
 - 12 ANOULITE
- FAULT
- 13 NORMAL
 - 14 REVERSE
 - 15 STRIKE
 - 16 QUARTZ VEIN (UNMETRICATED)
 - 17 QUARTZ VEIN (METRICATED)
 - 18 CONTACT (OBSERVED/PRESUMED)
 - 19 1:5000 SCALE LOCATION
 - 20 LIMIT OF TOPOGRAPHIC FEATURE
 - 21 CLIMB PATH (LIFTED BY PAUL J. COOPER)

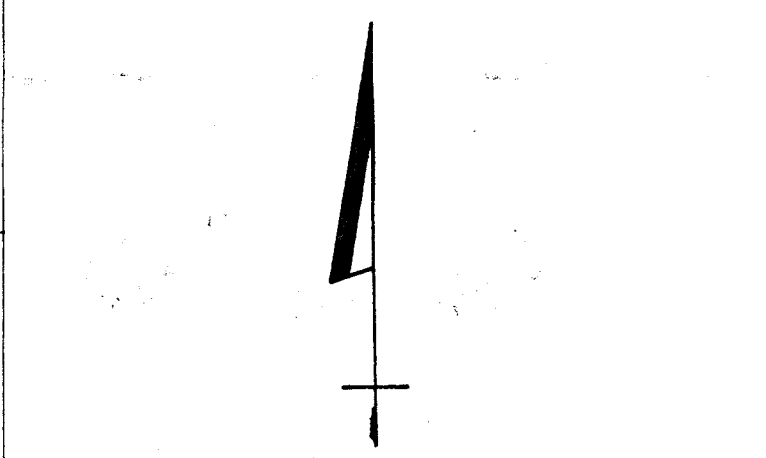
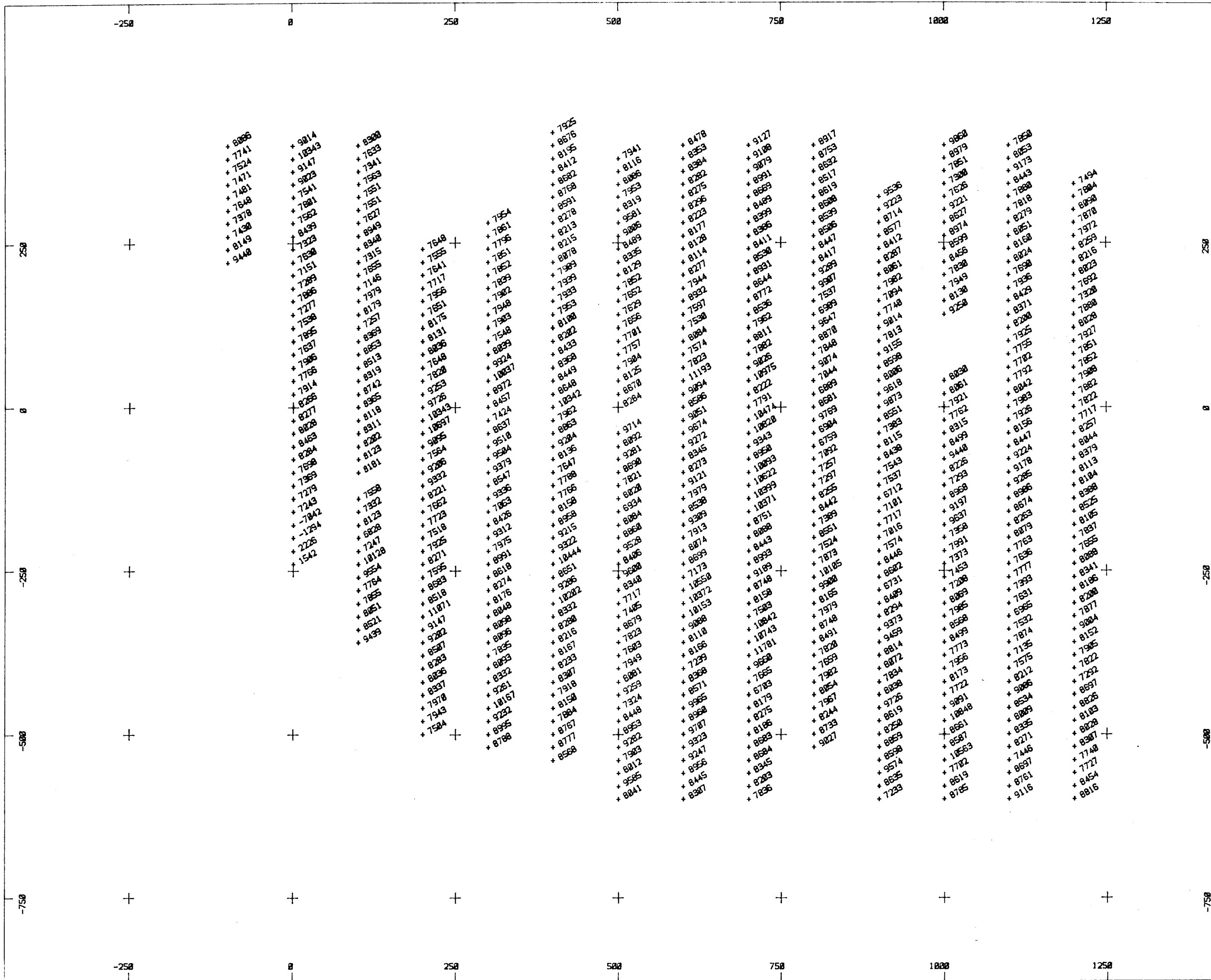
TRUE NORTH
MAGNETIC NORTH

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535

0 50 100 metres
1:1000

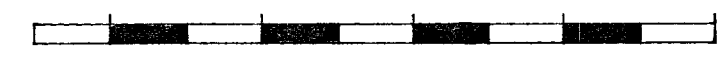
HOMESTAKE MINERAL DEVELOPMENT COMPANY		
ATLIN AREA BRITISH COLUMBIA SOUTH ATLIN PROPERTY GEOLOGY		
EAST SHEET		
DRAWN DM	DATE 10/87	FILE CODE 104N/12
REVISED	DATE	FILE CODE



LEGEND:
 50000 nT removed from all data
 Equipment: IGS (SciIntrex MP-4)

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

16,535



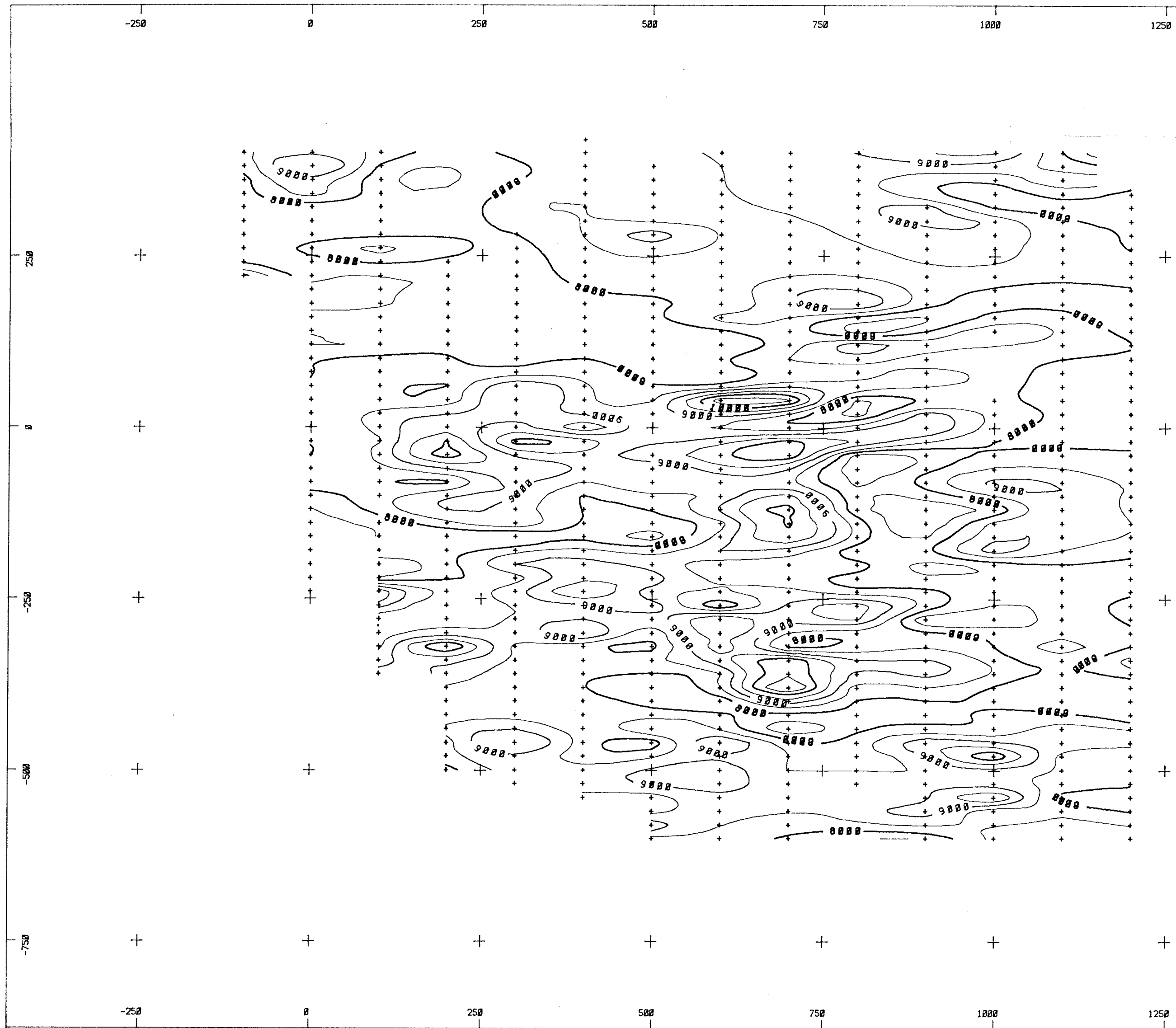
HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
 South Atlin Grid 1:5000

Ground Magnetometer Survey
 Total Field Data

DRAWN BY:	Jmt	DATE:	June 1987
-----------	-----	-------	-----------

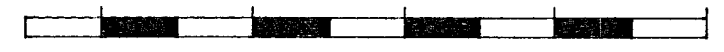
SCOTT GEOPHYSICS LTD.



LEGEND:
 50000 nT removed from all data
 Contour Interval: 500 nT
 Equipment: IGS (SciIntrex MP-4)

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

16,535

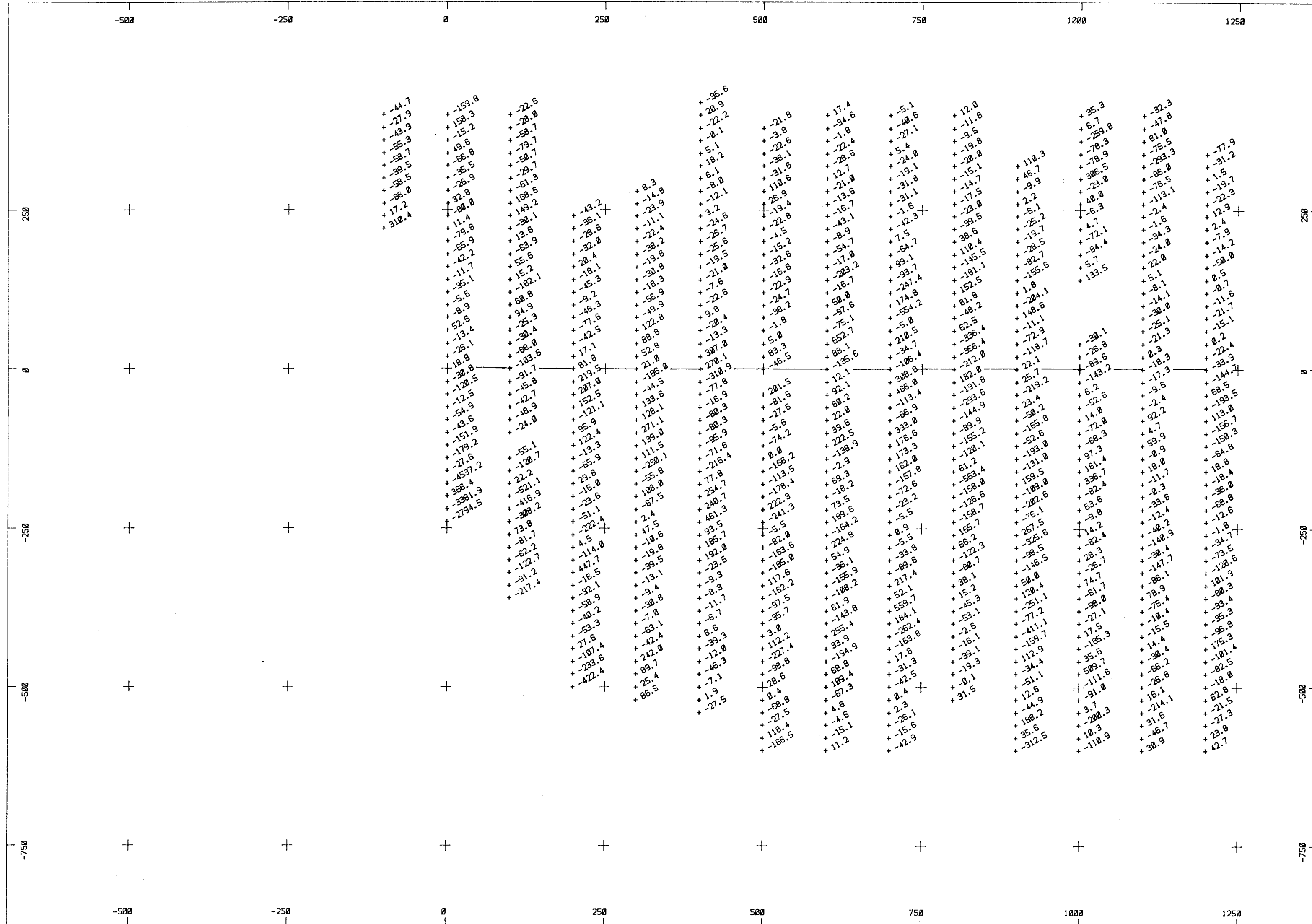


HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
 South Atlin Grid 1:5000
 Ground Magnetometer Survey
 Total Field Contour Plan

DRAWN BY: jmt DATE: June 1987

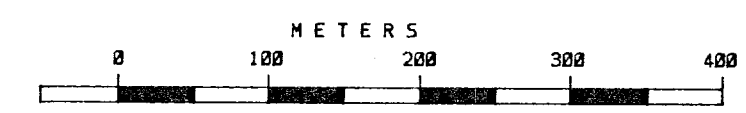
SCOTT GEOPHYSICS LTD.



LEGEND:
Equipment: IGS (SciIntrex MP-4)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535



HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
South Atlin Grid 1:5000

Ground Magnetometer Survey
Vertical Gradient Data

DRAWN BY: jmt DATE: June 1987

SCOTT GEOPHYSICS LTD.

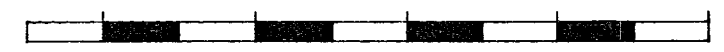
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535



LEGEND:

- Sensor separation: 1 meter
- Equipment: IGS (SciIntrex MP-4)
- Contours: +/- 0, 25, 50, 100, 200
400, 600, 800 nT/m

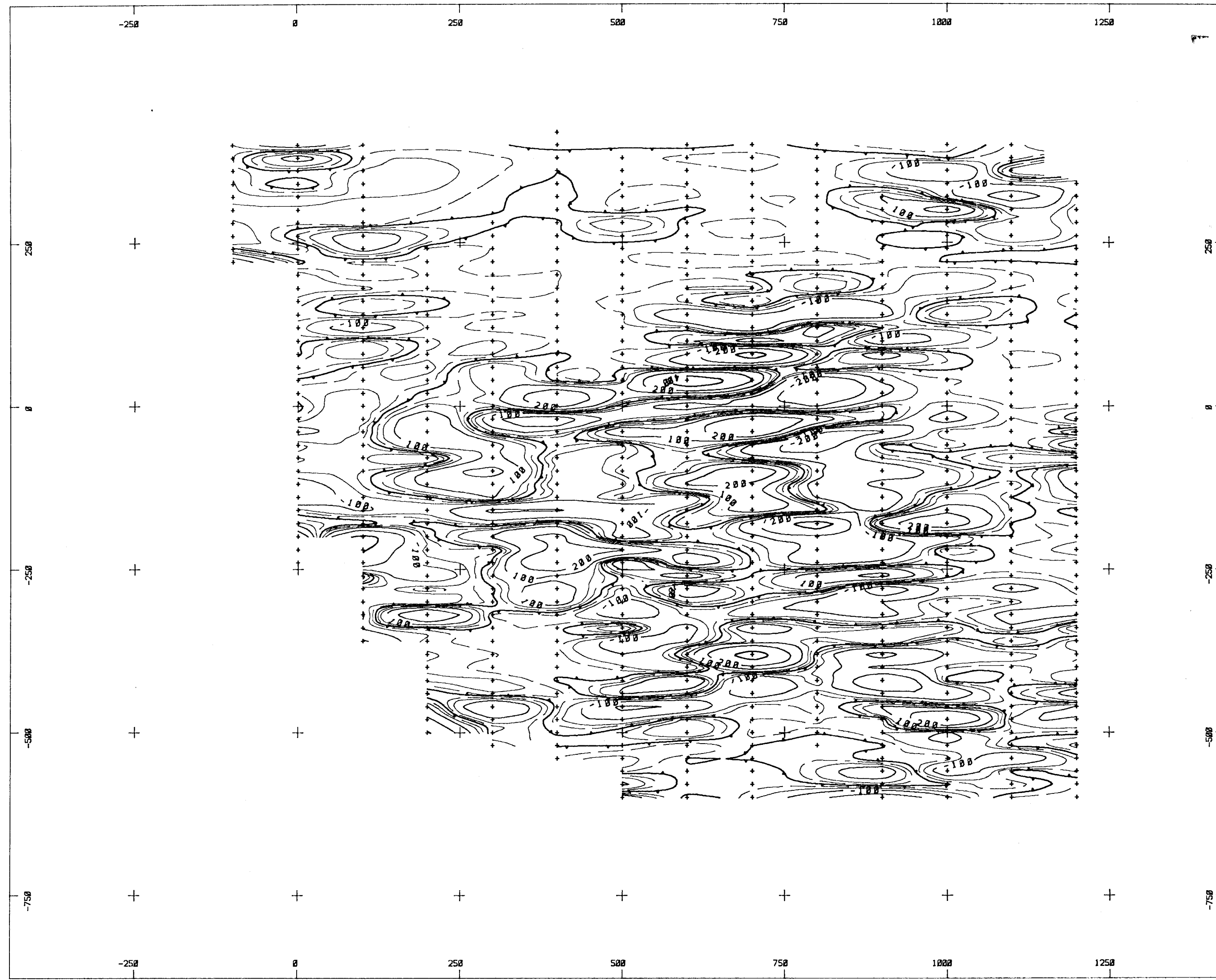


HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
South Atlin Grid 1:5000
Ground Magnetometer Survey
Vertical Gradient Contour Plan

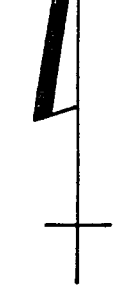
DRAWN BY: Jst DATE: June 1987

SCOTT GEOPHYSICS LTD.



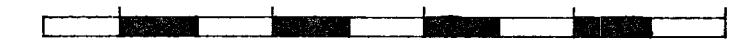
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535



LEGEND:

- Sensor separation: 1 meter
- Equipment: IGS (SciIntrex MP-4)
- Contours: +/- 0, 50, 100, 200
300, 400, 600 nT/m

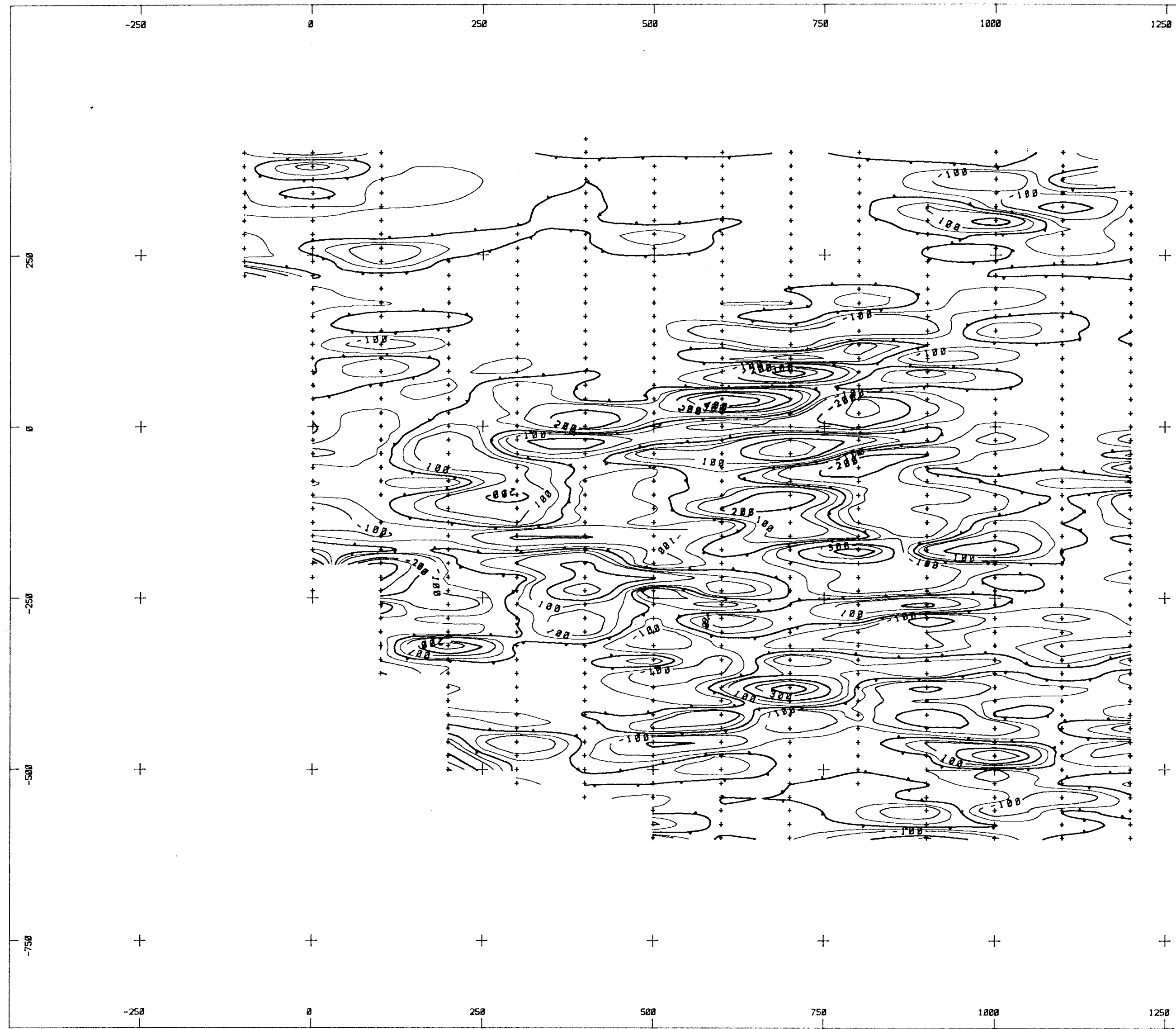


HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
South Atlin Grid 1:5000
Ground Magnetometer Survey
Vertical Gradient Contour Plan

DRAWN BY: jst DATE: June 1987

SCOTT GEOPHYSICS LTD.



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535

LEGEND:

- Station NPM (Hawaii) - 23.4 kHz
- .◇ In Phase - 20% / cm
- .X Quadrature - 20% / cm
- Zero % on line
- Positive values to west
- Anomaly locn: point of max slope
- . positive values to the north

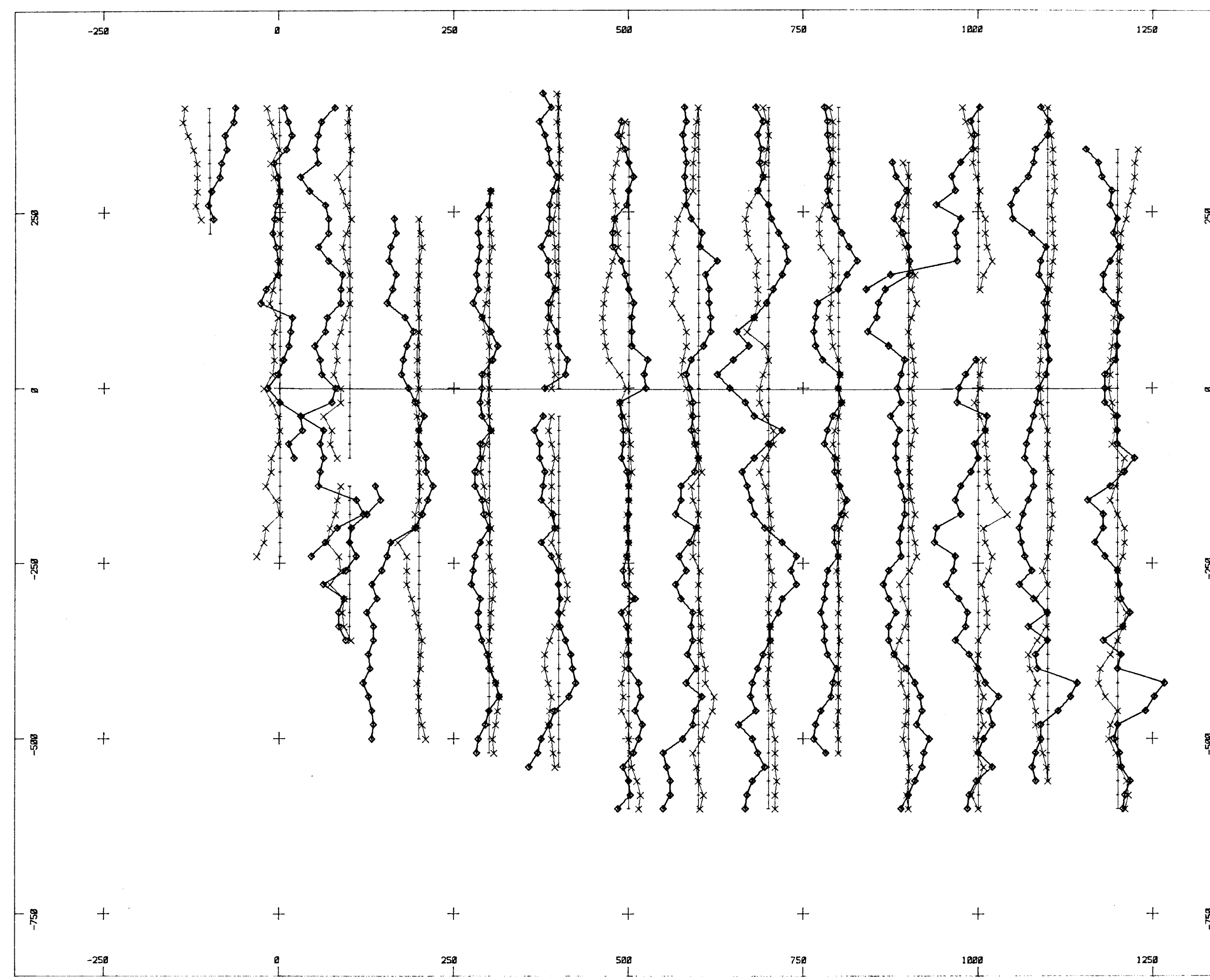


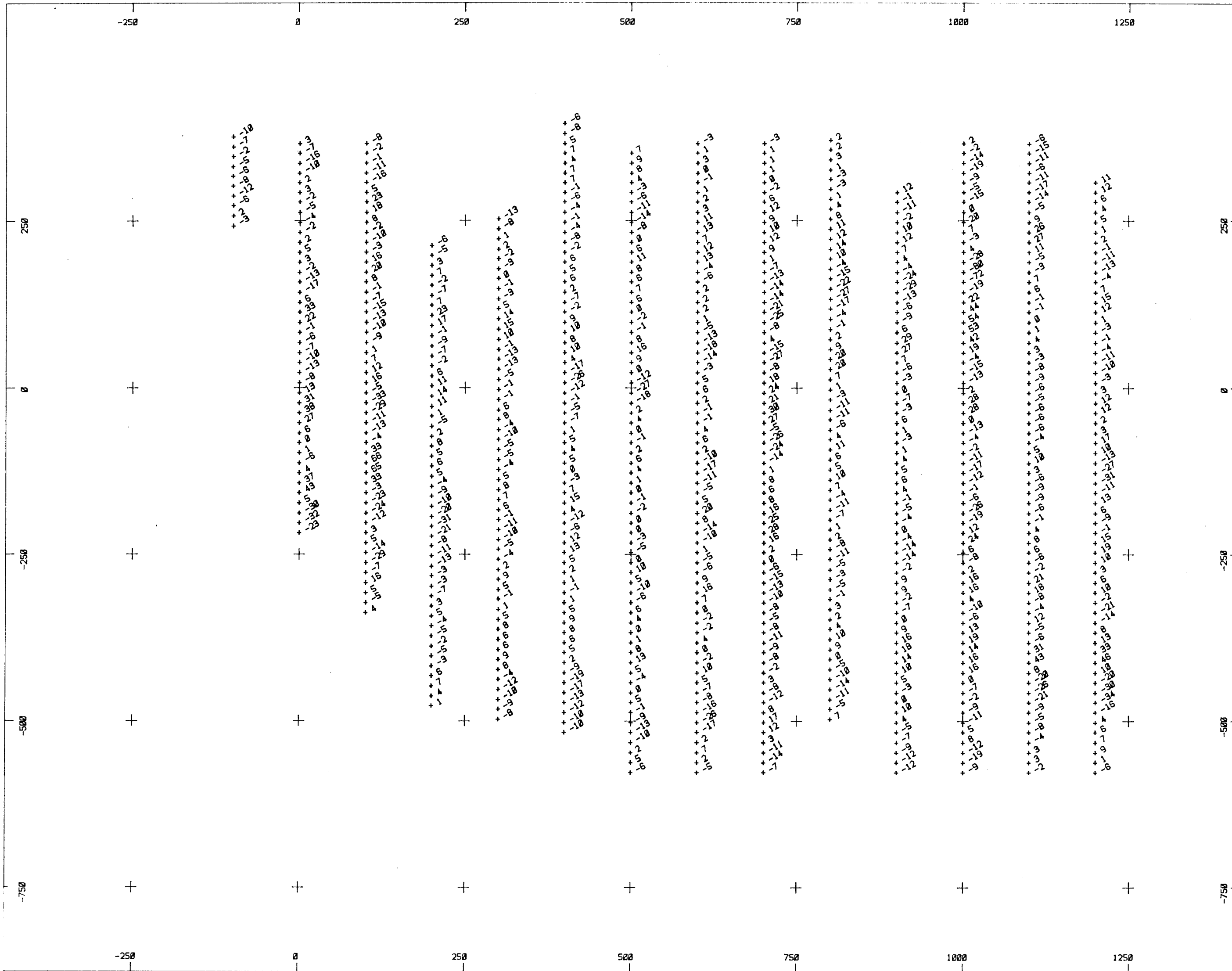
HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
South Atlin Grid 1:5000
VLF-EM Survey

DRAWN BY: jat DATE: June 1987

SCOTT GEOPHYSICS LTD.

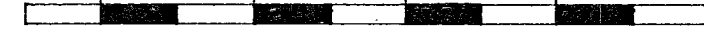




LEGEND:
 Station: NPM (Hawaii) - 23.4 kHz
 Equipment: IGS (SciIntrex VLF-4)
 Note: Data re-sampled at 15 meter
 intervals before computing values

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

16,535



HOMESTAKE MINERAL DEV. CO.	
Atlin B.C. South Atlin Grid 1:5000	
VLF-EM Survey Fraser Filter Data	
DRAWN BY: jmt	DATE: June 1987
SCOTT GEOPHYSICS LTD.	

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,535

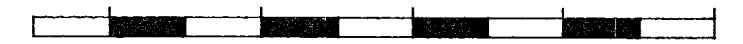


LEGEND:

Station: NPM (Hawaii) - 23.4 KHz
Equipment: IGS (SciIntrex MP-4)

Contours: 0, 5, 10, 15, 20, 30, 40, 60

Note: Data re-sampled at 15 meter
Intervals before computing values



HOMESTAKE MINERAL DEV. CO.

Atlin B.C.
South Atlin Grid 1:5000
VLF-EM Survey
Fraser Filter Contour Plan

DRAWN BY: jmt DATE: June 1987

SCOTT GEOPHYSICS LTD.

