1992 GEOPHYSICAL REPORT
ON THE
HANK PROPERTY

LIARD MINING DIVISION

NTS: 104G/1W, 2E
LATITUDE: 57' 13'N
LONGITUDE: 130' 30'W

OWNED BY:

LAC MINERALS LTD.
#204 - 698 Seymour Street
Vancouver, BC V6B 3K6

OPERATED BY:

HOMESTAKE CANADA LTD.
#1000 - 700 West Pender Street
Vancouver, BC V6C 1G8

By: M.D. McPherson, P.Geo

January 8, 1993

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SUMMARY

The Hank property is situated in northwestern British Columbia approximately 25 kilometres northwest of Bob Quinn Lake. The property lies along a broad, northeast-trending ridge southeast of Ball Creek and varies in elevation from 900 metres in the northeast corner of the property to 2050 metres in the southwest. Access to the property is by helicopter from Bob Quinn Lake; the claims are served by a network of cat trails developed by Lac Minerals Ltd. between 1985 and 1989.

The property consists of four claims totalling 68 units, owned by Lac Minerals Ltd. and currently under option to Homestake Canada Ltd. Previous work on the property (1983 to 1990) includes geologic mapping at various scales, soil, rock and stream sediment sampling, IP, MAG and VLF-EM geophysical surveying and 12,983m of diamond drilling in 97 holes.

The Hank Property is underlain by Upper Triassic Stuhini Group andesitic to basaltic flows, pyroclastics, volcanic derived sediments and minor limestone, overlain unconformably by poorly indurated, well bedded sediments of Jurassic age. These rocks have been intruded by the Bald Bluff orthoclase megacrystic porphyry and a presumed younger dioritic intrusion. Three main alteration assemblages have been identified, and include: 1) the sericite-pyrite-carbonate assemblage of the Upper and Lower Alteration Zones, where gold is concentrated in narrow quartz-carbonate veinlets in the lower portions of the system, and becomes more disseminated in nature in the upper portions of the system; 2) intense pervasive multiphase silicification within a transitional zone of decreasing carbonate-sericite and increasing quartz-clay-pyrite alteration; and 3) variable quartz+/-clay+/-pyrite of the broad Felsite Hill, Rojo Chico and Rojo Grande alteration zones. This alteration may represent the upper levels of a low sulphidation epithermal system. Weak quartz-clay-pyrite+/-sericite alteration within the Bald Bluff Porphyry suggests that it intruded during the final phases of the mineralizing event, and was not the key progenitor.

As part of the 1992 exploration program on the Hank Property, 8.35 line km of pole-dipole IP geophysical surveying was completed. Results from this survey indicate higher than background resistivity measurements outline all of the known alteration zones. With the possible exception of Rojo Grande, anomalous IP readings also coincide with mapped alteration, particularly with the pyritic quartz-clay alteration phases. In the case of Rojo Chico, the resistive cap appears to be substantially larger in areal extent than the mapped alteration, and the resistive layer appears to be thickening towards the southwest, off of the surveyed area.

There are a number of other narrow IP and/or resistivity features detected by the present survey, which do not correspond to known alteration, and which should be evaluated using all available data. These trends could represent either metallic sulphides possibly associated with gold mineralization, and/or, argillic alteration products also possibly related to elevated gold values.

Recommendations for further work include diamond drill testing beneath the coincident quartz-clay-pyrite alteration zone and IP/resistivity anomaly at Felsite Hill, a more detailed study to incorporate the new IP and resistivity data with all available pre-existing geologic and geochemical data, and additional IP surveying east of Rojo Chico to investigate the apparent extension of the anomaly off of the survey area.

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1.0 INTRODUCTION

1.1 Location and Access

The Hank property is located within the Liard Mining Division in northern BC, approximately 135 km southwest of the town of Dease Lake, BC (Fig. 1.1). The claims lie on NTS map sheets 104G/1,2 and are centred at latitude 57'13'N , longitude 130'30'W. Access to the property is by vehicle or fixed wing aircraft to the Bob Quinn Airstrip on Highway 37, 400km north of Smithers, BC, and then by helicopter to the property, 25 km to the northwest.

1.2 Land Status

The Hank 92 Group consists of 4 claims totalling 68 units (see table 1.1), owned by Lac Minerals and Homestake Canada Ltd. Homestake currently has an option to earn 60% of the claims over a six year period. The claims are situated along a southwest tributary of Ball Creek, known as Hank Creek (Fig. 1.2).

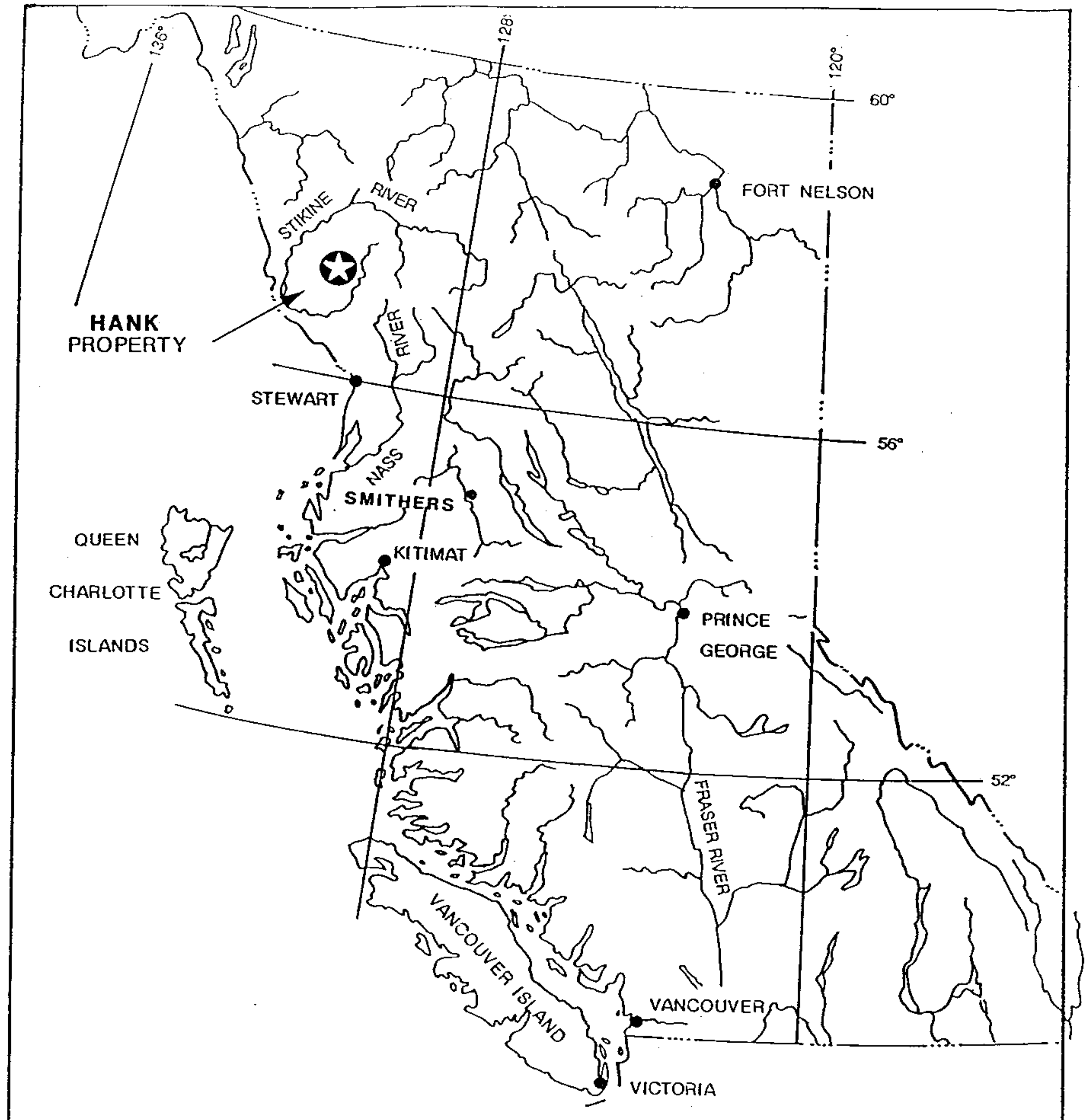
TABLE 1.1 - CLAIM STATUS

Claim	Units	Tenure #	Staking Date	Expiry Date*
Hank 1	18	222248	March 10, 1983	March 10, 2002
Hank 2	20	222249	March 10, 1983	March 10, 2002
Hank 3	20	222250	March 10, 1983	March 10, 2002
Hank 4	10	222389	Oct. 12, 1984	Oct. 12, 2002

* with the filing of this assessment work

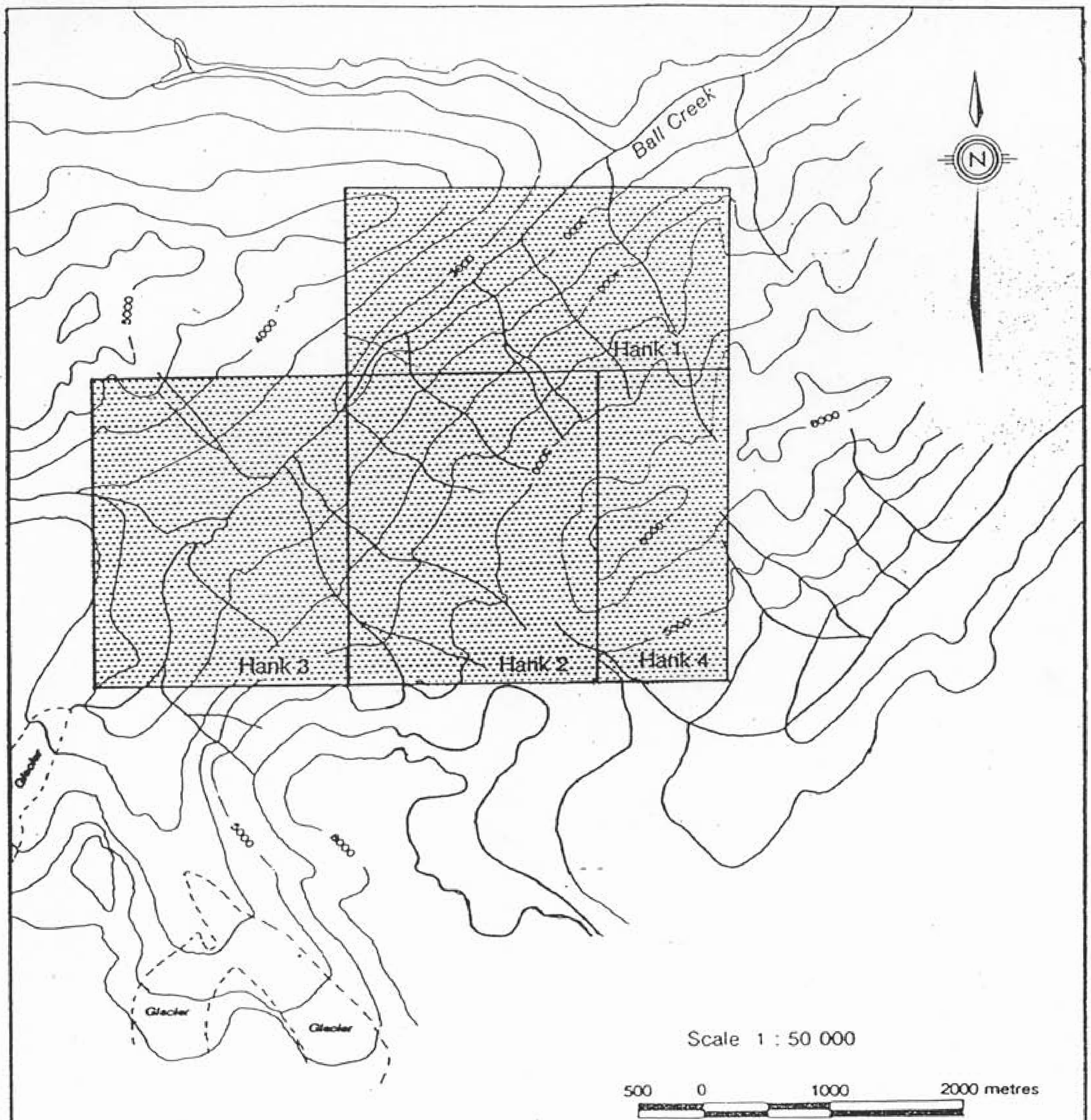
1.3 Physiography

The Hank property lies within the Boundary Ranges of the Coast Mountains. The property occupies a steep northeast trending valley along Hank Creek and the adjacent ridge to the east (Fig. 1.2). Local topographic relief is moderate to very steep with elevations ranging from 900m in Hank Creek to 1950m on Hank Ridge to the east. The area exhibits characteristics typical of glaciated physiography, with wide U-shaped, drift filled valleys flanked by steep rugged mountains, cirques and deeply incised V-shaped



SCALE 1: 7,500,000

HOMESTAKE CANADA LTD.			
HANK PROPERTY LOCATION MAP			
DRAWN AWK	DATE Nov.1991	NTS 104G/1,2	FIGURE 1.1
Revised MDM 01/93			



HOMESTAKE CANADA LTD.			
HANK PROPERTY			
Claim Location Map			
DRAWN JMH	DATE Nov 1991	NTS 104G/1,2	FIGURE 1.2

upland drainages. Rock exposure is best along the ridge tops and saddle area in the eastern part of the claims, and in the steeply incised drainages flowing northwest into Hank Creek.

Vegetation consists mainly of alder and forests of mature fir, spruce and hemlock with minimal underbrush. Above treeline, which lies at approximately 1500m, vegetation changes to isolated patches of scrub alpine spruce and juniper, and a variety of alpine grasses overlying extensive felsenmeer. There are several permanent snowfields and small glaciers on Hank Ridge and below Rojo Grande and Goat Peak. The area receives significant rainfall, and snow can lie on the higher elevations of the property until mid-July.

1.4 Exploration History

The Hank property was initially discovered and staked by Lac Minerals Ltd. in 1983, based on regional stream sediment geochemical anomalies and the presence of prominent gossans along the main ridge (Turna, 1985). Preliminary geologic mapping and sampling that year outlined several broad zones of anomalous gold and arsenic values. In 1984, Lac Minerals Ltd. completed more extensive geologic mapping, sampling, trenching and geophysical surveys resulting in the discovery of two sub-parallel, northeast trending sericite-carbonate-pyrite alteration zones, the Upper (UAZ) and Lower (LAZ) Alteration Zones. Work identified a zone of elevated gold mineralization of 3.3 g/t Au over 13m on surface, coincident with a broad Au > 300ppb soil anomaly within the UAZ (Turna, 1985). This area was tested by four diamond drill holes totalling 288.1m, of which drill hole DDH 84-2 returned 1.98 g/t Au over 18.0m. Lac completed additional mapping, trenching, sampling and geophysical surveys during 1985 and 1987 to 1989. Additional diamond drilling totalled 11,604.1m in eighty-eight holes, targeted on both the UAZ and LAZ, as well as several other less significant targets (Turna; 1986, 1988, 1989; Collins 1990). This drilling outlined a drill indicated geologic resource in the UAZ, of 245,000 tonnes of 4.0 g/t Au and 218,000 tonnes of 2.0 g/t Au in the "200" and "440" pits respectively (Collins, 1990), (Fig. 2.2).

In 1990, Carmac Resources optioned the Hank claims and drilled 1090.5m in five holes on the UAZ and LAZ, then terminated the option (Visagie, 1991).

1.5 1992 Exploration Program

Homestake Canada Ltd. optioned the Hank claims in 1992, and completed a program of soil and rock sampling, IP geophysical surveying and 1:2000 and 1:5000 scale geologic mapping. Work concentrated on exploring the extensive quartz-clay-pyrite alteration zones lying topographically and stratigraphically above the previously identified UAZ and LAZ (Fig. 2.2). These zones, known as Felsite Hill, Rojo Grande, Rojo Chico and the Silicifed Zone, had been subject to only cursory examination prior to the 1992 program. Only the results of the IP geophysical survey will be dealt with in this report.

2.0 GEOLOGY

2.1 Regional Setting

The Hank property lies within rocks of the Stikine Terrane along the western margin of the Intermontane Belt, and the eastern margin of the Skeena Fold Belt (Fig. 2.1). Regional mapping has been completed by both the GSC (Evenchick, 1991 and Souther, 1972) and the BC Geological Survey (Logan et al, 1992).

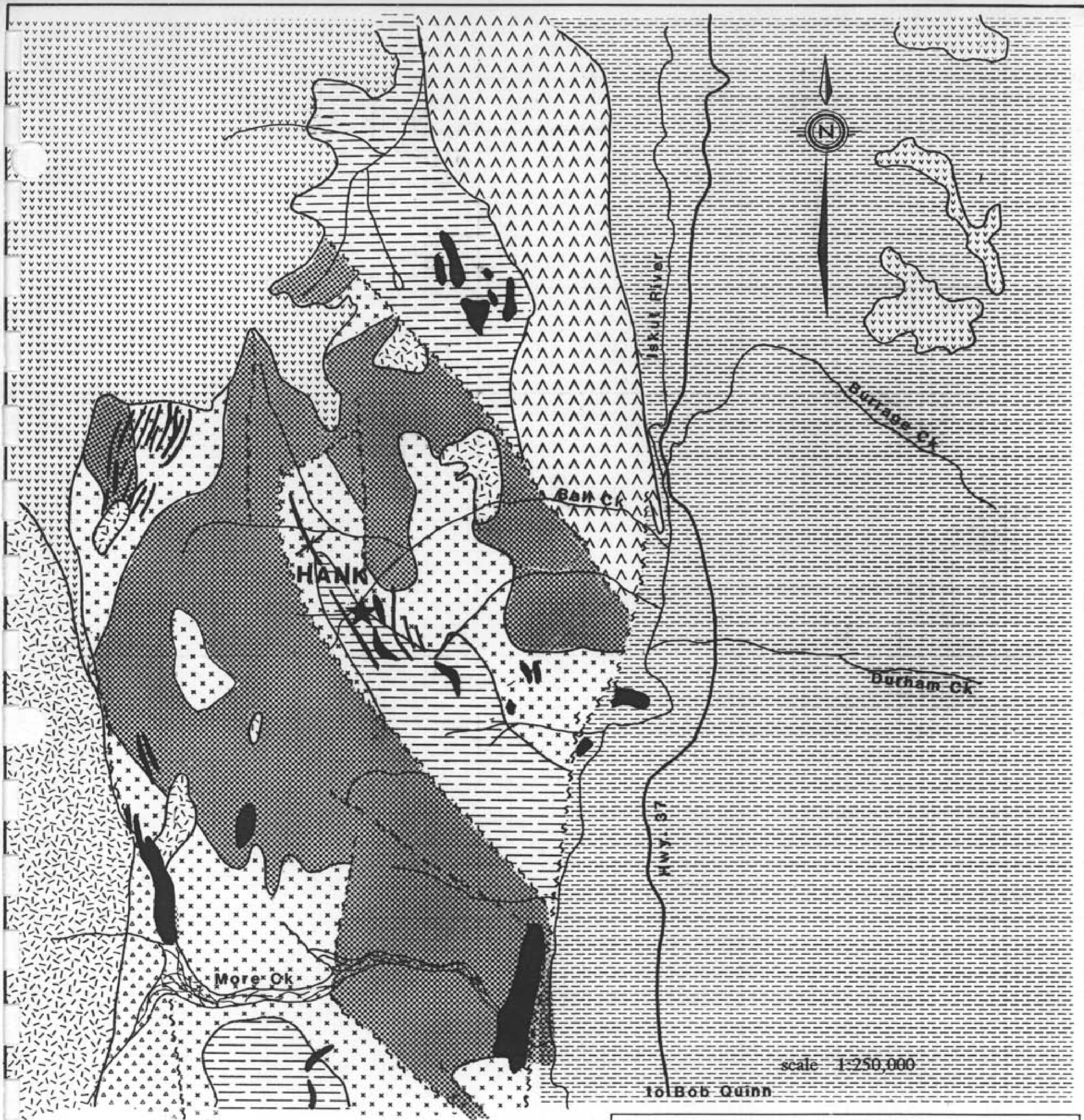
The oldest rocks in the region are complexly folded schists and gneisses of mid-Paleozoic age, which form the basement to the area and are exposed in More Creek south of the Hank property. Closer to the property, regional mapping has defined the stratigraphy surrounding the property as predominantly Upper Triassic Stuhini Group augite andesite flows, pyroclastics and volcanic derived sediments overlain by Lower Jurassic grits, conglomerates, greywackes and basaltic volcanics. The Jurassic sediments form a broad northwest trending syncline in the south-central portion of the Hank claims. East of the property, along the Iskut River, are sedimentary rocks of the Jurassic Ashman Fm. of the Bowser Lake Group (Evenchick, 1991). Chert pebble conglomerates, also of possible Bowser Lake Group, are exposed on the ridge north of Hank Creek (A. Kaip, pers. comm. 1992). Middle Jurassic pillow basalts and derived pyroclastics mapped by Souther (1972) northeast of Hank, may be correlative to Salmon River Fm. (Eskay Creek facies; Anderson and Thorkelson, 1990).

Both the Upper Triassic volcanic and sedimentary rocks and the Lower to Middle Jurassic sedimentary rocks are intruded in several places by Upper Cretaceous to Lower Tertiary "felsite" intrusions (Souther, 1972). These intrusions range in composition from Felsite to quartz-feldspar porphyry to orbicular rhyolite, and typically form narrow tabular bodies which cut stratigraphy. At Hank these "felsites" have been identified as quartz-clay-pyrite alteration zones.

The youngest rocks in the region are Tertiary to Quaternary basalt flows related to the Mount Edziza volcanic complex located approximately 15km northwest of the property.

Other than the "felsites", intrusive rocks are limited to small bodies of granodiorite and quartz diorite related to the Coast Plutonic complex. Goat Peak, on the southern edge of Hank, is underlain by diorite.

Structure in the region is dominated by the north-south trending Iskut River and Mess Creek valleys, believed to be controlled by major fault zones (Souther, 1972). Between the two valleys is a well developed set of northwest trending faults, some of which are truncated by re-activation along the north-south faults. One of these northwest trending faults lies at the head of Hank Creek, and brings Upper Triassic sandstone, greywacke and siltstone to the west in contact with slightly younger Upper Triassic andesitic volcanics and minor sediments to the east (Souther, 1972; Logan et al, 1992). A similar but smaller sub-parallel fault, the West Hank Fault, crosses the western part of the Hank claims and separates Upper Triassic aphyric andesite flows, pyritic flow banded rhyolite and minor sediments to the west from hornblende+/-feldspar phyric andesitic volcanics to the east.



LEGEND

Tertiary + Quaternary
Basalt, dacite, related pyroclastics

Upper Cretaceous + Lower Tertiary
Felsite, Qz-fs porphyry, orbicular rhyolite

sic + /or Cretaceous
Granodiorite, qz diorite

Mid. to Upper Jurassic
BOWSER LAKE GROUP; shale, siltstone, chert-pebble conglomerate, greywacke

Mid. Jurassic
Basalt, pillow lava and derived volcanoclastics

Lower and Mid. Jurassic
Sediments, basaltic volcanics

Upper Triassic
STUHINI GROUP; Augite andesite flows, pyroclastics, minor sediments

Upper Triassic
STUHINI GROUP; sediments

Permian and Older
Metamorphic basement

HOMESTAKE CANADA LTD.

HANK PROPERTY

Regional Geology

after Souther (1972)

DRAWN	DATE	NTS	
MDM	10/92	104G/1,2	Figure 2.1

Revised

2.2 Property Geology

2.2.1 Stratigraphy

The Hank property is underlain by a succession of andesitic flows, pyroclastic and minor sedimentary rocks divided into four informal units (Fig. 2.2; Units 1-4). On the east side of the West Hank Fault the stratigraphy consists of Upper Triassic Stuhini Group pyroxene phyric flows and breccias overlying hornblende +/- pyroxene phyric flows, pyroclastic rocks, siltstones, sandstones and biotite phyric flows and breccias. Unconformably overlying the volcanic succession are Lower Jurassic carbonaceous siltstones, sandstones, wackes and pebble conglomerates which locally contain fossilized wood fragments (Souther, 1972). On the west side of the West Hank Fault the stratigraphy is composed of Upper Triassic Stuhini Group interlayered aphyric flows and flow-banded rhyolites overlain by siltstone and fine-grained sandstone.

On the east side of the West Hank Fault, bedding strikes northeast and dips 20 to 40 degrees southeast. North of Hank Creek, bedding locally dips 20 degrees to the northwest. Within Unit 2b above Felsite Hill, bedding strikes northwest and dips 50 degrees to the southwest. Local bedding variations are also recorded within the siltstones of Unit 1b at the base of Creek 10 to 12. West of the West Hank Fault, bedding in Unit 3 typically strikes south and dips steeply to the west, except in the sediments adjacent the Fault along Hank Creek, where beds strike east and dip steeply to the south.

Two intrusive plugs are exposed on the property; (i) an orthoclase megacrystic, hornblende phyric monzonite which outlines the prominent knoll known as Bald Bluff, and (ii) a medium grained, hornblende diorite which outcrops on Goat Peak.

The following is a detailed description of each stratigraphic unit (see also legend, Fig. 2.2).

Upper Triassic Stuhini Group:

Unit 1a: On the northeast side of the West Hank Fault, the most volumetrically abundant unit on the property is green to maroon andesitic lapilli tuff and tuff breccia (Fig. 2.2). Rocks are poorly sorted and display weak normal grading from lapilli to breccia-sized fragments. Individual layers are difficult to identify, imparting an overall massive appearance to the rock. The fragments are feldspar-hornblende-pyroxene phyric, typically angular and vary in size from 2 to 50cm. Feldspar laths vary from 1 to 4mm and make up 20 to 35% (this and all subsequent mineral percentages are based on field estimates) of the fragments. Hornblende varies from 2 to 5mm and pyroxene from 1 to 2mm; together comprising 15% of the fragments. The matrix is a fine-grained mass of broken feldspar crystals and aphanitic ash. Outside of the main alteration zones, the rocks are fresh to weakly chlorite-carbonate altered, typical of regional low-grade metamorphism. Trace to 1% finely disseminated pyrite is common.

Within this sequence are isolated lenses of well-bedded epivolcaniclastic sediments. Well bedded dark green ash tuff beds, composed of broken feldspar laths and volcanic ash are exposed in Creeks 4 and 7 and on Camp Peak, and vary from 0.5 to 5m thick, but are limited in strike length. At the top of Creek 13, a 50m thickness of poorly indurated, well-bedded, maroon and green calcareous siltstones and volcanic sandstones are exposed.

Unit 1b: Interfingering with Unit 1a at the base of Creeks 8, 9 and 10 is a lens of dark grey to black feldspar-biotite phyric ash tuff to lapilli tuff (Fig. 2.2). On the ridge to the north the unit is interbedded with black feldspar-biotite phyric flows and breccias. Fragments are subrounded to rounded and vary in size from 2 to 20cm. The groundmass is composed of fine-grained ash and isolated shards of volcanic glass. The flow layers are 20 to 30m thick, massive to amygdaloidal, and medium-grained with 2 to 5mm euhedral biotite and feldspar phenocrysts.

Unit 1c: Conformably overlying Unit 1b are black, finely laminated siltstones interbedded with grey and brown fine to medium-grained sandstones (Fig. 2.2). Individual sandstone beds vary in thickness from 2 to 20cm and occasional load structures indicate that beds are upright. The thickness of this unit varies along strike from 20m to greater than 50m, and the unit is only exposed near the base of Creeks 10, 11 and 12.

Unit 1d: Interfingering with Unit 1a are maroon to grey, magnetic, hornblende-feldspar-pyroxene phyric flows (Fig. 2.2). On the west side of the property these flows are volumetrically minor, forming thin lenses which are discontinuous over 100m strike length, while on the east side of the property, a series of flows up to 70m thick dominates the stratigraphy. The flows are massive with amygdaloidal bases, which are best exposed in Creeks 6 and 7. Hornblende phenocrysts vary from 2 to 20mm in size and comprise up to 15% of the rock. Feldspars are commonly pale green and form single crystals or radiating masses with magnetite inclusions. Pyroxene occurs as equant crystals 2 to 4mm in size. The groundmass is maroon, aphanitic and contains disseminated magnetite.

Unit 2a: Overlying Unit 1 are andesitic to basaltic pyroxene and feldspar phyric, dark green to grey magnetic flows, interlayered with tuff breccias of Unit 2c, and best exposed along Hank Ridge (Fig. 2.2). The flows are massive and amygdaloidal and range in thickness from 5m to greater than 100m. Isolated limestone clasts are observed near the top of the section on Hank Ridge. Recessive weathering pyroxene crystals are equant, vary in size from 2 to 10mm and comprise 10 to 30% of the rocks. Feldspars occur as crowded white laths up to 3mm in size and 20 to 40% of the rock. The groundmass is aphanitic and contains fine-grained disseminated magnetite.

Unit 2b: A lens of partially recrystallized, bioclastic and silty limestone crops out near the top of the exposed section of Unit 2a on Hank Ridge (Fig. 2.2). The limestone contains bivalve and gastropod fossil fragments in strongly bioturbated layers interbedded with well-laminated, fine-grained silty limestone. At this exposure the limestone overlies tuff breccia and underlies pyroxene-feldspar-phyric flows, however the exact relationship between Units 2a, 2b and 2c is unknown.

Unit 2c: Interlayered with Unit 2a are maroon to green andesitic tuff breccias. They are poorly sorted and consist of angular to well rounded fragments up to 1.5m in size, predominantly derived from the adjacent pyroxene-feldspar phyric flows. The groundmass is aphanitic and weakly magnetic, trace to 10% broken feldspar laths.

Unit 3: Dark green to black amygdaloidal aphyric flows and flow breccias interlayered with rusty, pyritic, flow-banded rhyolites are exposed on the east flank of Goat Peak along the southwest side of the West Hank Fault (Fig. 2.2). These volcanic rocks underlie brown to black, well-bedded, calcareous siltstone and fine-grained sandstones bearing carbonaceous plant fragments along bedding planes. The sediments are exposed west of Creek 1 and at the base of Goat Peak on the southwest side of the West Hank Fault.

Lower Jurassic (Undefined):

Unit 4: Unconformably overlying Unit 2 are poorly indurated, maroon and green siltstones, brown and green well-bedded sandstones, and heterolithic pebble to cobble conglomerates (Fig. 2.2). Fossilized wood fragments up to 2m are common and rare *Weyla* are reported (Turna, 1985). Siltstones are well laminated and individual beds vary from 0.5 to 5m thick. The sandstones are calcareous and display low-angle, cross trough bedding with pebble lags along foresets. Clasts in the conglomerates are well rounded and vary in size from 0.5 to 10cm. Clasts are dominantly intraformational and derived from the underlying volcanic rocks. Bedding within the sediments is variable due to the doming effect caused by the intrusion of the Bald Bluff Porphyry, and folding along the east side of Rojo Grande. Along the margins of the intrusion, dips steepen from 30 to 60 degrees. Within Unit 4 on the east side of Rojo Grande, is an asymmetric syncline trending 115 degrees and plunging 15 degrees to the southeast. This structure probably corresponds to the regional syncline mapped by Souther (1972).

Intrusive Rocks:

Unit A: An orthoclase-megacrystic, hornblende porphyritic intrusive is exposed on Bald Bluff, and has been called the Bald Bluff Porphyry (Fig. 2.2). The intrusive is well foliated and locally flow banded with the strike of the foliation subparallel to the margins of the intrusive and dipping near vertical. On the top of Bald Bluff the foliation flattens and well-banded orthoclase-megacrystic intrusive underlies silicified breccia derived from it. A contact breccia with angular fragments of the foliated intrusive cemented by calcite, iron-bearing carbonate and grey to red silica is exposed on the margins of the intrusive. Breccia dykes, related to the Bald Bluff porphyry intrude sedimentary rocks adjacent to the intrusive contact. Minor hornfelsing of Unit 4 is observed in outcrop adjacent to the intrusion and represented by the occurrence of black, euhedral biotite and fine-grained, disseminated pyrite.

Unit B: A plug of relatively homogeneous, dark green to black medium-grained equigranular diorite underlies Goat Peak west of the West Hank Fault (Fig. 2.2). The intrusive is locally porphyritic, with hornblende phenocrysts to 1cm long. The diorite is fresh to moderately chlorite altered and locally weakly to moderately silicified with trace to 3% finely disseminated pyrite.

2.2.2 Structure

The West Hank Fault is the dominant structural feature on the property. It lies along the western margin of the property, and is probably the southeast extension of a similar fault mapped on the ridge to the northwest by Logan et al (1992; also A. Kaip, pers. comm). The fault trends north-northwest, dips sub-vertically and is marked by abundant white calcite veining, brecciation and contorted bedding in the sediments of Unit 3.

On the northwest side of Hank Ridge local faults have been identified in outcrop and drill core. These faults strike north-northwest, are thought to be vertically dipping, and record offsets of less than 100 meters.

Stratigraphy generally strikes northeast and dips gently to the southeast except within the sediments of Unit 4, as described earlier. This northeast trend is also repeated in the boundaries of the LAZ and UAZ alteration Zones as well as in numerous smaller scale fracture sets across the property.

2.3 Mineralization and Alteration

Seven main alteration zones were identified during mapping and examination of drill core: the Lower Alteration Zone, the Upper Alteration Zone, Felsite Hill, the Silicified Zone, Rojo Grande, the Flats Zone and the Quartz Stockwork Zone.

2.3.1 Lower Alteration Zone (LAZ)

The Lower Alteration Zone (LAZ) is a broad northeast trending zone of sericite-pyrite +/- carbonate alteration dipping steeply to the southeast and hosted within andesitic lapilli tuffs and tuff breccias of Unit 1a and hornblende +/- feldspar +/- pyroxene phyric magnetic flows of Unit 1d (Fig. 2.2). The Zone is 100 to 250m wide and extends for 2.4 km along strike. Surface exposure of the LAZ is lost to the northeast between Creeks 9 and 10, along the base of Hank Creek, and reconnaissance mapping on the ridge to the north indicates that the Zone does not continue across Hank Creek. To the southwest, the Zone appears to be cut-off by a steep northwest trending fault immediately southwest of Creek 3. This fault contact is visible in DDH 88-23, where strong sericite-pyrite-carbonate alteration is in contact with unaltered andesite hornblende-feldspar phyric lapilli tuffs.

Alteration in the LAZ is typically pale grey in colour and very uniform. Pyrite occurs as euhedral 1 to 10mm crystals up to 10 to 15%, and is commonly disseminated or concentrated within relict lapilli. Sericite is predominantly white and less commonly pale green to brown and comprises up to 80% of the alteration assemblage. The predominant carbonate mineral is fine-grained pervasive calcite up to 10%. Calcite veinlets up to 10% are common, and are typically associated with elevated gold values.

Footwall alteration increases from weak chlorite-pyrite-carbonate alteration to strong sericite-pyrite-carbonate alteration as the lower LAZ contact is approached. On surface, the contact is marked by a strong colour change to bright yellow gossanous material in Creeks 3 to 9, and an increase in pervasive carbonate alteration in the LAZ. The upper contact of the LAZ is gradational and marked by a gradual decrease in the intensity of alteration to weak chlorite-pyrite-carbonate +/- sericite. Several pods of LAZ-style alteration can be found above the main zone, but are typically less than 10m wide.

Hosted within the LAZ are several quartz-carbonate veins up to 50cm wide, that host sphalerite-galena-pyrite+/-chalcopyrite mineralization. In drill core these veins appear to be localized along dilational zones which pinch and swell, and on surface are discontinuous over tens of meters. The veins are locally zoned, with fine-grained, grey quartz at vein margins and coarse grained, white to pale pink calcite and sulphide mineralization in the cores. Alteration typically increases to soft, pyritic clay adjacent to the margins of these quartz-carbonate-sulphide veins.

Fine pyrite stringers are observed in core, parallel to and cross-cutting calcite stringers. Late pink to white carbonate veins up to 30cm wide are also observed in core cutting sulphide veins. Gypsum and anhydrite fill the latest set of fractures with crystal growth typically perpendicular to fracture walls.

2.3.2 Upper Alteration Zone (UAZ)

The Upper Alteration Zone (UAZ) is less continuous than the LAZ and is composed of a series of northeast trending zones extending from the head of Creek 4 to the west side of Creek 12 (Fig 2.2), and hosted within andesitic lapilli tuffs of Unit 1a and magnetic flows of Unit 1d. The Zones vary from 25 to 200m in width, and up to 1000m in strike length. The total strike length of the Zones is approximately 2000m.

Alteration in the UAZ varies from strong sericite-pyrite +/- carbonate to strong sericite-chlorite-pyrite-carbonate. In Creeks 10, 11 and 12 the footwall of the UAZ is very sharp, and in drill core in the 200 and 440 pits this contact terminates at the base of a thick pile of hornblende phyric flows. This suggests that the UAZ may be in part stratigraphically controlled. The alteration assemblage consists of apple green sericite-chlorite-pyrite-carbonate alteration with local pods of intense pale grey sericite-pyrite+/-carbonate alteration similar to the LAZ. Fine grained disseminated pyrite varies from 10% to 15% and appears to concentrate in relict lapilli fragments. Pyrite stringers up to 1cm in width are observed in core cross-cutting calcite stringers. Pervasive carbonate varies from 5 to 15% of the alteration assemblage with an increase along the margins of quartz-carbonate veins. Discontinuous zones of grey silicification up to 10m wide are seen in drill core, and correspond to an increase in the percentage and grain size of pyrite, and an increase in the amount of calcite veining.

Quartz-carbonate veins hosting sphalerite-galena-pyrite+/-chalcopyrite mineralization similar to those in the LAZ are present but less abundant. Cross-cutting these veins are late, coarse grained milky white to pale pink crustiform calcite +/- pyrite veins up to 50cm wide. Gypsum and anhydrite fill the latest set of fractures.

Lying between the UAZ and the quartz-clay-pyrite alteration zone on Felsite Hill is a poorly exposed zone of transitional alteration, best seen in drill core within and above the 200 pit. In drill core the zone is marked by a general decrease in silicification downward from quartz-clay-pyrite alteration to crumbly clay-pyrite +/- quartz to sericite-clay-pyrite +/- carbonate and finally to typical UAZ alteration. Within this transitional zone is an interval of diffuse silica flooding which may indicate the northeast strike extension of the Silicified Zone (see below).

2.3.3 Felsite Hill

Alteration on Felsite Hill forms a broad, north trending oval zone approximately 550m wide by 900m long, which cross-cuts stratigraphy (Fig. 2.2). Original lithologic textures are largely destroyed within the Zone, however along the margins are well preserved sedimentary rocks of Unit 4 and pyroxene-feldspar phyric flows of Unit 2a, the probably hosts of the alteration. The dominant alteration assemblage on Felsite Hill is intense quartz-clay-pyrite followed by quartz-clay +/- pyrite and clay+/- quartz. In the central part of Felsite Hill is a small isolated pod of quartz-pyrite alteration similar in appearance to the Silicified Zone (see below).

Quartz-clay-pyrite alteration is texturally destructive with relict feldspar and fragment outlines present only on weathered surfaces, or near alteration boundaries where the intensity of silicification decreases. This assemblage is composed of fine grained blue to grey silica, grey to white clay and up to 15% very fine grained disseminated pyrite. On the West side of Felsite Hill, a small pod of clay-quartz altered, fine grained sediments with carbonaceous partings is exposed within quartz-clay-pyrite alteration. This alteration varies from clay+/-quartz to a brown clay which appears more granular than the soft amorphous clay typically associated with this type of alteration elsewhere on Felsite Hill.

Quartz-clay+/-pyrite alteration varies from texturally destructive, vuggy, intense quartz-clay to more moderate alteration with relict primary textures and isolated pods of fine grained pyrite. In the former, the rock is made up of up to 70% fine grained white to buff quartz with abundant small cavities, possibly relict vugs from leached clay. Textures are better preserved with an increase in clay+/- pyrite alteration and a decrease in silica. Up to 25% disseminated pyrite occurs as fine grained euhedral crystals. Small pods of chalcedonic grey silica and white amorphous clay veinlets have been identified in outcrop.

Clay+/-quartz alteration varies dramatically in intensity along the southern margin of alteration on Felsite Hill. In this region, the primary textures of interfingered maroon siltstones and conglomerates are visible. Clay varies from green to maroon in colour and occurs initially as soft amorphous clay alteration of the matrix.

On the top of Bald Bluff are patchy zones of moderate quartz-clay-pyrite +/- sericite-chlorite alteration which display textural similarities to alteration on Felsite Hill and in the UAZ.

2.3.4 Silicified Zone

The Silicified Zone is a 10 to 100m wide band of intense silicification +/- pyrite exposed at the base of Bald Bluff and along the northwest margin of Felsite Hill, and previously identified as chert (Turna, 1988). The Zone strikes approximately 100 degrees and dips shallowly to the south (< 30 degrees), wrapping gently around the east side of Bald Bluff as it follows the trace of topography (Fig. 2.2). Below Bald Bluff the Zone appears to be hosted within sedimentary rocks of Unit 4; moderately well preserved coarse sandstone and fine conglomerate textures are still visible. Elsewhere, especially in the vicinity of Felsite Hill, the intensity of silicification has destroyed all primary textures. The Silicified Zone is exposed at the head of Creek 3, but appears to pinch out further to the west. Along the western flank of Felsite Hill, several silicified outcrops mark the trace of the Silicified Zone however there is an absence of silica alteration in drill core below Felsite Hill, indicating a possible pinch and swell nature to the Zone. Bounding the Silicified Zone is a poorly exposed zone of strong sericite-clay-pyrite +/- quartz alteration of unknown width, best seen below Bald Bluff where it hosts druzy quartz lined cavities and quartz veins similar to those observed in the Flats Zone (see below).

Alteration in the Silicified Zone consists of pale grey to dark grey-blue very fine grained quartz. Pyrite occurs as very fine grained disseminations within grey quartz and coarse grained within blue quartz. At least three phases of brecciation can be distinguished within the Zone, in the vicinity of Bald Bluff. The earliest phase is characterized by white to grey angular fragments within a grey silica matrix. The second phase is characterised by re-brecciation and partial cementing by silica, with druzy cavities occurring at the interstices between angular fragments and chalcedonic veinlets The last phase is characterized by brittle fracturing of silicified outcrops and the presence of barite in open cavities.

2.3.5 Rojo Grande

Alteration on Rojo Grande forms a more irregular zone than on Felsite Hill, extending from Rojo Chico southeast to Rojo Grande and south onto Goat Peak. The style of mineralization is similar to that on Felsite Hill with quartz-clay-pyrite alteration as the dominant assemblage followed by quartz-clay+/- pyrite and minor clay+/-quartz alteration. The zones are thought to be hosted within pyroxene-feldspar phyric magnetic flows and tuff breccias of Unit 2a, and interbedded sediments of Unit 4, however most primary lithologic features have been destroyed by the alteration. On Rojo Grande, zones of intense quartz+/- pyrite alteration are more abundant and occur as narrow (<10m wide) north trending linears within a quartz-clay-pyrite alteration halo. Alteration consists of fine grained grey to blue quartz, white to pale grey amorphous clay and finely disseminated pyrite from 1 to 15%.

Rojo Chico is situated west-northwest of Rojo Grande and consists of quartz-clay-pyrite alteration within andesite lapilli tuffs of Unit 1a (Fig. 2.2). Alteration is typically massive and granular in appearance, and consists of fine grained, blue-grey quartz, 2 to 10% fine grained disseminated pyrite and white amorphous clay. The Zone forms a small, but prominent resistant red knob approximately 75m wide by 100m long and is completely surrounded by talus.

Along the northeast side of Goat Peak a prominent zone of quartz-clay-pyrite alteration similar to that at Rojo Grande and Rojo Chico occupies a steep narrow gully and appears to lie on strike with Rojo Chico. This linear cross-cuts the West Hank Fault at the base of Goat Peak with no apparent offset. Along the ridge crest, are quartz-clay-pyrite altered aphyric amygdaloidal flows of Unit 3, with bands of unaltered flow striking 170 degrees and dipping vertically.

Along the base of Goat Peak, adjacent to the West Hank Fault, are quartz-clay +/- pyrite altered rocks. Within this zone, white amorphous clay pods and veins up to 2cm wide are observed adjacent to a zone of brecciation 1m by 4m. The clasts in this breccia are altered to quartz-clay and cemented by fine grained grey quartz. A 1cm wide vein of light brown sugary crystals also occurs adjacent to the breccia, and XRD has identified it as a combination of natroalunite and dickite.

2.3.6 Flats Zone

On the broad plateau area at the heads of Creeks 1 to 3 is a poorly exposed zone of quartz-sericite-pyrite alteration known as the Flats Zone (Fig. 2.2). Alteration consists of pale grey fine grained quartz-sericite-pyrite with druzy milky-white quartz filled cavities and crustiform veining up to 3cm wide. Fine grained disseminated pyrite comprises 5 to 20% of the rock. Pods of clay-pyrite+/-quartz alteration are exposed near the top of Creek 3, and consist of crumbly white to grey rock with very fine grained disseminated pyrite, surrounded by a broad area of very pale yellow clay-soil. Several resistant pods of grey silica were also located within this area, but are typically very small (<5m wide). XRD work of DDH 87-7 (46.5m), has confirmed the presence of intervals of quartz-Kspar-pyrite alteration occurring within crumbly quartz-sericite-pyrite alteration. However the quartz-Kspar-pyrite assemblage has not been confirmed on surface.

2.3.7 Quartz Stockwork Zone

Below the LAZ in Creek 4, is a 10m by 75m, east-northeast trending zone of quartz stockwork hosted within chlorite-Fe carbonate-pyrite altered lapilli tuffs of Unit 1a (Fig. 2.2). The zone is cut-off east of Creek 4, and is covered by talus to the west. The zone consists of milky-white to colourless quartz veins up to 2cm wide within a 10m wide halo of moderate pervasive quartz-sericite alteration with 3 to 5% fine pyrite.

3.0 GEOPHYSICS

3.1 Introduction

As part of the 1992 exploration program on the Hank property, 8.35 line km of pole-dipole IP geophysical surveying was completed over the southern portion of the claim group. Lac Minerals had previously completed 33.0 line km of pole-dipole IP surveying over the UAZ and LAZ; 7.0 km of this was at a=50, n=2 in 1984, and 26.0 km was at a=25m n=4 in 1988 (where a=the inter-electrode spacing and n=the # of separations). The 1992 survey was designed to adjoin the previous Lac surveys and provide additional information over the quartz-clay-pyrite alteration zones south of the previous survey area. The contractor for the IP survey was Pacific Geophysical Limited of Vancouver, BC. They provided all necessary survey equipment and computer software, as well as a geophysicist and a trained technician. Two field assistants were provided by Homestake. The survey was completed between July 28 and August 8, and work was hampered by local deep snowdrifts and inaccessible steep terrain on Rojo Grande.

3.2 Survey Specifications

The IP survey was completed over a flagged and picketed grid put in by Homestake prior to the survey. The lines were run perpendicular to a cut and picketed tieline (16+00E) at 045 degrees. Grid lines were located with hipchain and compass and are flagged at 25m intervals, picketed at 50m intervals and spaced 100m apart; lines are not slope corrected. IP and resistivity surveying was completed over lines 7N, 9N, 11N, 13N, 16N, 17N, 19N, 21N, and 23N (Fig. 3.1).

The survey was completed using a pole-dipole array with an inter-electrode spacing of 25m. An EDA Model IP-6 induced polarization and resistivity receiver unit was used to make the measurements. Two separate transmitters, a Phoenix Model IPT-1 1.0 kw unit, and a Huntec Model Mk4 7.5 kw unit, were used to provide the 2 second on, 2 second off receiver signals, depending on the voltage levels required. Induced polarization values were recorded in milliseconds, using "mode 3", which employs an 80 msec time delay, followed by 10 logarithmically spaced measurement windows (80ms x 4, 160ms x 3, 320ms x 3), which were then combined into one cumulative reading. Apparent resistivity measurements were calculated in ohm-meter units.

To overcome the problems with snow, conductive pipe up to 10 feet long was used to obtain ground contact.

3.3 Results

The 1992 geophysical survey grid was designed to cover the alteration zones of Felsite Hill, Rojo Grande, Rojo Chico and the Silicified Zone. All of these zones gave rise to higher than background resistivity values, almost certainly due to the presence of heavy concentrations of quartz rich material in these zones. Well defined, moderate magnitude or greater, IP anomalies coincide with all of the alteration zones, with the possible exception of Rojo Grande, where there is only a marginal association between alteration and anomalous IP effects. Pyrite in varying amounts is present in all of the alteration zones, and is the most probable cause of the anomalous IP responses. The first separation (N=1) resistivity and IP plan maps illustrate the interpreted geophysical results (Figs. 3.2, 3.3).

Felsite Hill

At Felsite Hill, a region of much higher than normal resistivity measurements and high magnitude IP values (IP Zones A,B,B1,B2) outlines a resistive cap in the order of 25 meters thick, that correlates well with quartz-clay-pyrite alteration at surface (Figs. 3.2,3.3,3.9-3.12). This cap is split in half by a narrow, northeast trending zone of low magnitude resistivity and IP measurements, probably caused by an increase in clay content along the southern margin of a quartz-clay alteration zone that was mapped within the larger quartz-clay-pyrite alteration halo.

The principal cause of the anomalous IP effects recorded in the vicinity of Felsite Hill is, in all probability, the pyrite contained within the resistive alteration halo mentioned above. It is very difficult to accurately judge if any pyrite, or any other polarizable source, extends beneath this cap, due to the masking effects of the near-surface sulphides. However, IP Zones B1 and B2, which flank either margin of IP Zone B, could be caused by narrow, near vertical sources extending to depth (Fig. 3.3). IP Zone B2 is interpreted to extend to the southwestern corner of the grid.

Rojo Grande

The Rojo Grande quartz-clay-pyrite alteration zone appears to be well outlined as a deep seated resistivity high, where the base of the resistive layer is buried in excess of the 50 meter detection limit of the array used. This area of high resistivity is not directly accompanied by anomalous IP readings, but is largely enclosed by the anomalous IP effects that constitute IP Zone D (Figs. 3.3,3.6-3.9). Polarizable material within sediments apparently give rise to this IP response.

Rojo Chico

The Rojo Chico quartz-clay-pyrite alteration zone correlates directly with IP Zone E, which is itself set within a much wider area of elevated apparent resistivity values (Fig. 3.2-3.5). In this case, the resistive cap is thought to be considerably less than 25 meters thick under Line 7+00N, but increases in thickness away from the grid towards the southwest.

Silicified Zone

Marginally greater than background resistivity results coincide with the mapped position of the "Silicified Zone". In places, the response flip-flops over to be more conductive than resistive (Fig. 3.2). It is probable that the quartz to clay percentage varies along the length of the zone, with the former material causing a resistive component while the latter does the opposite.

Other Anomalies

IP Zone C lies on the western corner of the grid, and does not appear to correlate with any known alteration (Figs. 3.3,3.11,3.12). The best part of the zone lies within the volcanic rocks underlying the southeastern ends of Lines 23+00N and 21+00N. It is probably a relatively narrow, and resistive, tabular source.

Two other resistive features are also evident in the resistivity data from the Hank grid; the most prominent is the Bald Bluff feldspar megacrystic intrusive (Figs. 3.2,3.7,3.8), and the other is a small resistivity anomaly on Lines 17+00N and 16+00N, in the vicinity of station 23+50E. It's cause is unknown (Figs. 3.2,3.8,3.9).

4.0 CONCLUSIONS AND RECOMMENDATIONS

As part of the 1992 exploration program on the Hank Property, 8.35 line km of pole-dipole IP geophysical surveying was completed. Results from this survey indicate higher than background resistivity measurements outline all of the known alteration zones. With the possible exception of Rojo Grande, anomalous IP readings also coincide with mapped alteration. In the case of Rojo Chico, the resistive cap appears to be substantially larger in areal extent than the mapped alteration, and the resistive layer appears to be thickening towards the southwest, off of the surveyed area.

There are a number of other narrow IP and/or resistivity features detected by the present survey, which do not correspond to known alteration or sulphides, and which should be evaluated using all available data. These trends could represent either metallic sulphides possibly associated with gold mineralization, and/or, argillic alteration products also possibly related to elevated gold values.

Recommendations for further work include diamond drill testing beneath the combined quartz-clay-pyrite alteration zone and IP/resistivity anomaly at Felsite Hill, a more detailed study to incorporate the new IP and resistivity data with all available pre-existing geologic and geochemical data, and additional IP surveying east of Rojo Chico to investigate the apparent extension of the anomaly off of the survey area.

5.0 REFERENCES

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Turna, R., (1989): Report on Diamond Drilling and Trenching on the Hank Property in 1988, and in-house report for Lac Minerals Ltd.

Visagie, D.A., (1991): Diamond Drilling Report on the Hank Property, for Carmac Resources Ltd.; BC Ministry of Energy, Mines and Petroleum Resources, Assessment Report #19253.

6.0 STATEMENT OF COSTS

Salaries:

M. McPherson	Geologist July 27,1992; January 4-5, 1993	3 days @ $200	$ 600
R. Britten	Regional Manager August 25, 1992	1 day @ $400	$ 400
C. Downie	Field Assistant July 24-31; Aug. 1-3,6,7, 1992	12.75 days @ $100	$ 1,275
D. Denbhoer	Field Assistant July 24-31; Aug. 1-3,6,7, 1992	12.75 Days @ $100	$ 1,275

Geophysical Survey:

Pacific Geophysics Ltd.

8.75 days @ $985/day	July 28-31; Aug. 1-3,6,7 1992	$ 8,619
Mobilization/Demobilization		$ 675

Travel:

Central Mountain Air:	
4 Vancouver to Smithers @ $177	$ 708
Vancouver Island Helicopters:	
Hughes 500D; 3.2 hours @ $ 795/hr.	$ 2,544

Food and Accommodation:	
44 man days @ $30/day in Hank Base Camp	$ 1,320
Field Supplies: flagging, pickets, metal tags, spray paint, etc.	$ 150
sub-total	$17,566
10% administration fee	$ 1,757
TOTAL	$19,323

7.0 STATEMENT OF QUALIFICATIONS

I, Margaret D. McPherson, of 4083 Parkway Drive, Vancouver, BC DO HEREBY CERTIFY THAT:

1. I am a geologist currently employed by Homestake Canada Ltd., located at #1000-700 West Pender St., Vancouver BC, V6C 1G8.

2. I graduated from the University of British Columbia in 1987, with a Bachelor of Science degree in Geology.

3. I am Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

4. I have been employed in the mineral industry since 1985.

5. I participated in, and supervised the work described in this report.

Margaret D. McPherson, P.Geo

January 5, 1993
Vancouver, BC

APPENDIX I: IP REPORT
(from Pacific Geophysical Limited)

PACIFIC GEOPHYSICAL LIMITED

REPORT ON THE

INDUCED POLARIZATION & RESISTIVITY SURVEY

ON THE

HANK PROPERTY

LIARD
~~ATLIN~~ MINING DIVISION, BRITISH COLUMBIA
MWf

FOR

HOMESTAKE CANADA LTD.

N.T.S. 104G/1,2

BY

PAUL A. CARTWRIGHT, P.Geo.

Geophysicist

DATED: December 10, 1992

TABLE OF CONTENTS

1. SURVEY and INSTRUMENT SPECIFICATIONS

Induced polarization and resistivity surveys have been carried out on the Hank Property, ~~Atlin~~ Liard M.D. Mining Division, B.C. Pole-dipole array was utilized to make all measurements, with an inter-electrode spacing of 25 meters being used to survey all of the grid lines.

An EDA Model IP-6 induced polarization and resistivity receiver unit was utilized to make the measurements. Two separate transmitters, a Phoenix Model IPT-1 1.0 kw unit, and a Huntec Model Mk4 7.5 kw unit, were used to provide the 2 second on, 2 second off receiver signals, depending on the voltage levels required. Induced polarization values were recorded as milliseconds, using " mode 3", which employs a 80 msec delay time, followed by 10 logarithmically spaced measurement windows(80ms x 4, 160ms x 3, 320ms x 3), which were then combined into one cumulative reading. Apparent resistivity measurements were calculated in ohm-meter units.

2. DISCUSSION OF RESULTS

All of the alteration zones mapped on the 1992 Hank Property geophysical grid give rise to higher than background resistivity values, almost certainly due to the presence of heavy concentrations of quartz rich material in these zones. Well defined, moderate magnitude or greater, IP anomalies are also noted coincident with all of the alteration zones, with the possible exception of Panky Peak(Rojo Grande), where there is only a marginal association with anomalous IP effects. Pyrite in varying amounts is noted to be present in all of the alteration zones, and is the most probable cause of the anomalous IP responses. The first separation (N=1) resistivity and IP plan maps (File:MHR1MY, File:MHI1MY) illustrate the interpreted geophysical results.

At Felsite hill, a region of much higher than normal resistivity measurements, and high magnitude IP values(IP Zones A,B,B1,B2) outlines a resistive cap in the order of 25 meters thick, that correlates well with the known alteration. This cap is split in half by a narrow zone of low magnitude resistivity and IP measurements, which is probably caused by an increase in clay content along the southern margin of a quartz-clay alteration zone mapped within the larger quartz-clay-pyrite alteration halo.

The principal cause of the anomalous IP effects recorded in the vicinity of Felsite Hill is, in all probability, the pyrite contained within the resistive alteration halo mentioned above. It is very difficult to accurately judge if any pyrite, or any other polarizable source, extends beneath this cap, due to the masking effects of the near-surface sulphides. However, IP Zones B1 and B2, which flank either margin of IP Zone B, could be caused by narrow, near vertical sources extending to depth. IP Zone B2 is interpreted to extend to the southwestern corner of the grid.

Rojo Chico alteration zone correlates directly with IP Zone E, which is itself set within a much wider area of elevated apparent resistivity values. In this case, the resistive cap is thought to be considerably less than 25 meters thick under Line 700N, but is increasing in thickness away from the grid towards the southwest.

The Panky Peak (Rojo Grande) alteration appears to be well outlined as a deep seated resistivity high, where the base of the resistive layer is buried in excess of the 50 meter detection limit of the array used. This area of high resistivity is not directly accompanied by anomalous IP readings, but is largely enclosed by the anomalous IP effects that constitute IP Zone D. Polarizable material within sediments apparently give rise to this IP response.

Marginally greater than background resistivity results can be discerned coincident with the mapped position of the "Silicified Zone". In places, the response flip-flops over to be more conductive than resistive. It is probable that the quartz to clay percentage varies along the length of the zone, with the former material causing a resistive component while the latter does the opposite.

IP Zone C is detected on the western corner of the grid, and does not appear to correlate with any known alteration. The best part of the zone lies within volcanics mapped underlying the southeastern ends of Lines 2300N and 2100N. The source is indicated to be a relatively narrow, and resistive, tabular source.

Two other resistive features are also evident in the resistivity data from the Hank grid; the most prominent is the Bald Bluff Intrusive, while the other is a small resistive event seen in the data recorded on Lines 1700N and 1600N, in the vicinity of Station 2350E. Its cause is unknown.

3. CONCLUSIONS AND RECOMMENDATIONS

Higher than background resistivity measurements outline all of the known alteration zones on the 1992 Hank Property geophysical grid. With one possible exception (Panky Peak), anomalous IP readings also mark the mapped alteration. In the case of the Rojo Chico area, the resistive cap appears to be substantially larger in areal extent than the mapped alteration. Also, the resistive layer appears to be thickening towards the southwest.

There are a number of other narrow IP and/or resistivity features of unknown origin detected by the present survey, which should be evaluated using all available data. These trends could represent either metallic sulphides possibly associated with gold mineralization, and/or, argillic alteration products also possibly related to elevated gold values.

It is recommended that all other data be correlated with the geophysical results before assigning priorities for follow-up work.

Pacific Geophysical Ltd.

Paul A. Cartwright, P.Geo.

Dated: December 10, 1992

4. CERTIFICATE

I, Paul A. Cartwright, of the City of Vancouver, Province of British Columbia, do hereby certify:

1. I am a geophysicist residing at 4508 West 13th Avenue, Vancouver, British Columbia.

2. I am a graduate of the University of British Columbia, with a B.Sc. degree (1970).

3. I am a member of the Society of Exploration Geophysicists, the European Society of Exploration Geophysicists and the Canadian Society of Exploration Geophysicists.

4. I have been practising my profession for 22 years.

5. I am a Professional Geophysicist licensed in the Province of Alberta, and I am a Professional Geoscientist registered in the Province of British Columbia.

Dated at Vancouver, British Columbia this 10th day of December, 1992.

Paul A. Cartwright

Paul A. Cartwright, P.Geo.

5. CERTIFICATE

I, Grant D. Lockhart, of the City of Vancouver, Province of British Columbia, do hereby certify:

1. I am a geophysicist residing at 301 - 2232 West 5th Avenue, Vancouver,B.C.

2. I am a graduate of the University of British Columbia, with a B.Sc. degree (1987).

3. I am a member of the Society of Exploration Geophysicists, and the Canadian Society of Exploration Geophysicists.

4. I have been practicing my profession for 4 years.

Dated at Vancouver, British Columbia this 10th day of December, 1992.

Grant D. Lockhart

GRANT D. LOCKHART, B.Sc.

HOMESTAKE CANADA LTD.

HANK PROPERTY

1992 Geophysical Survey Grid

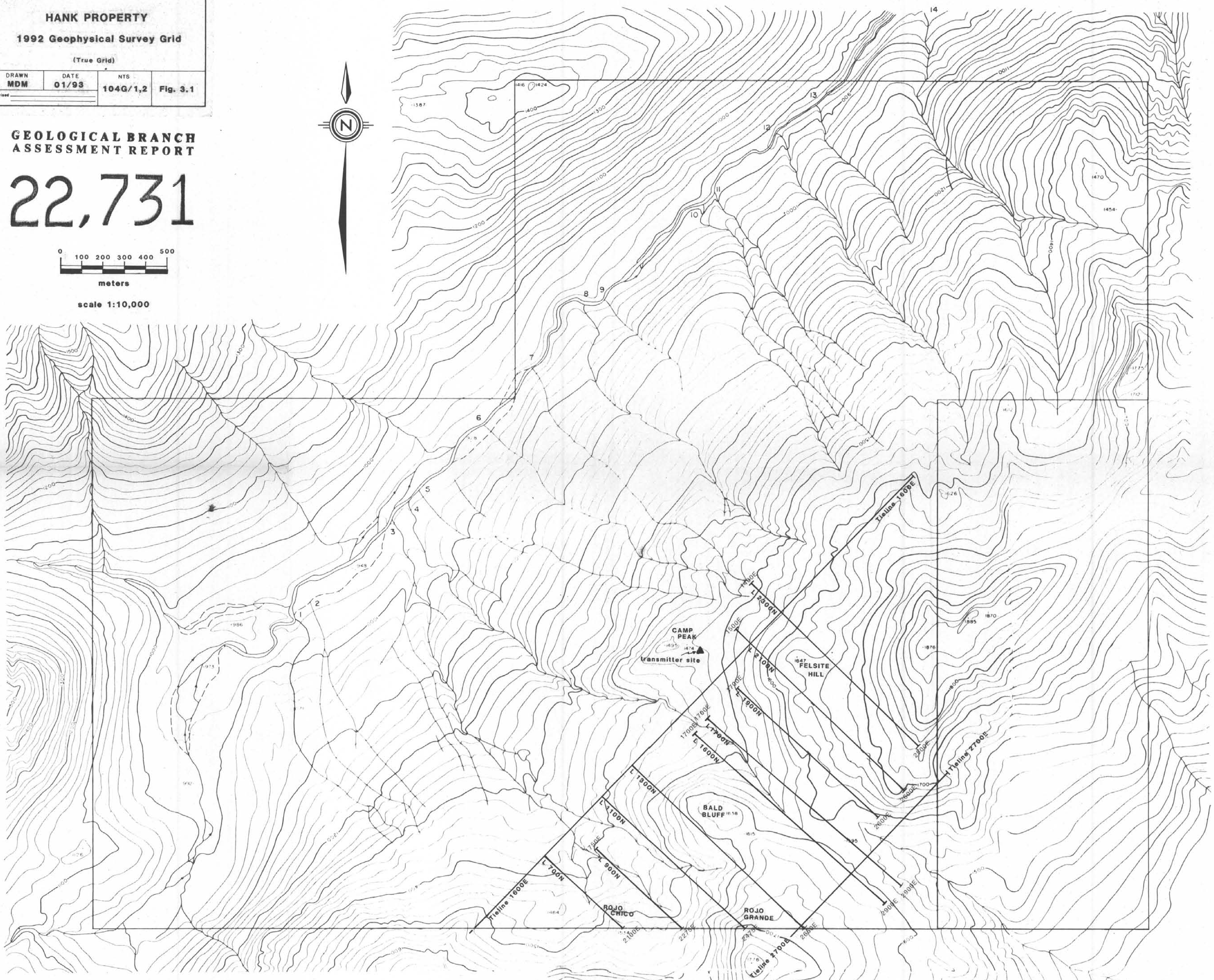
(True Grid)

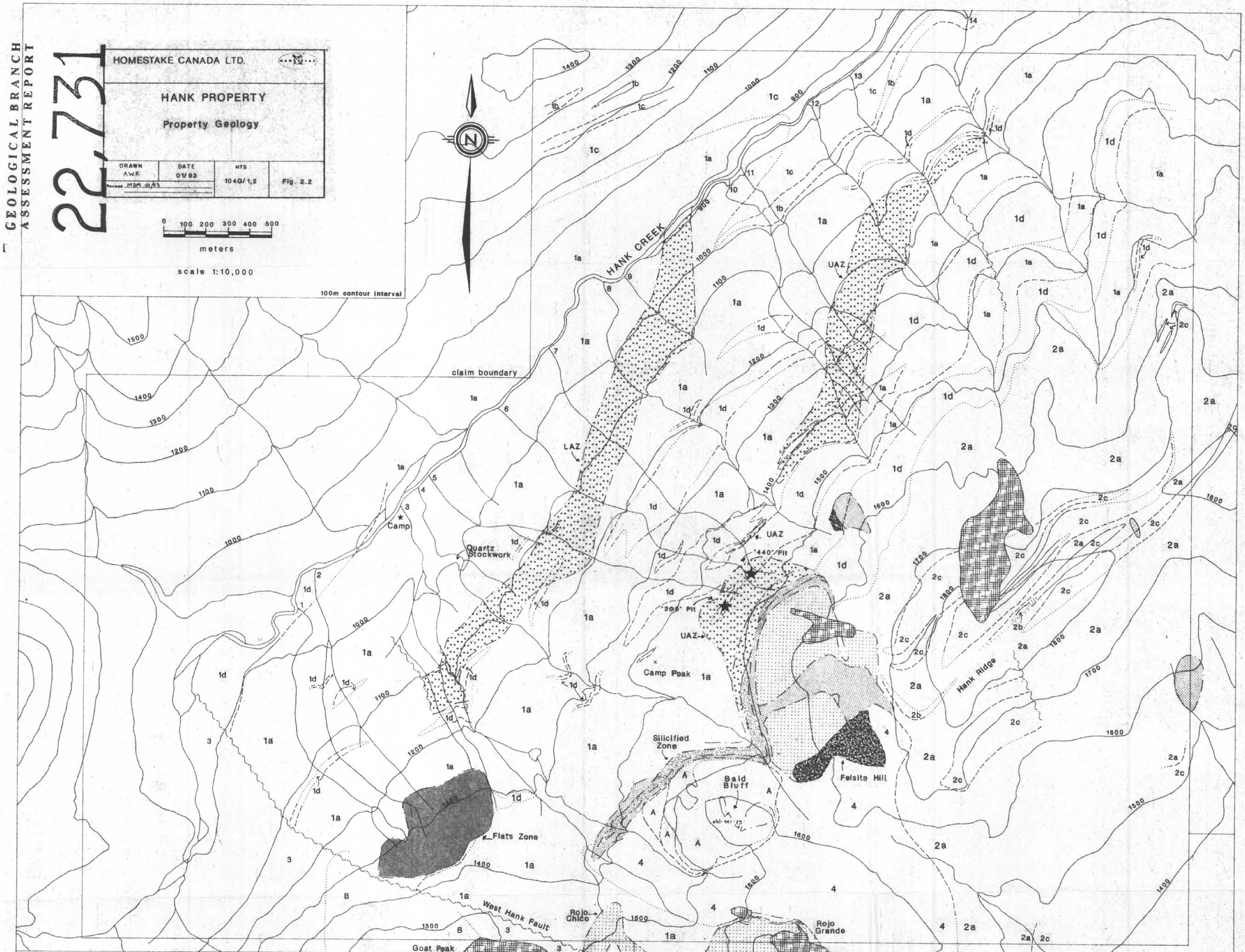
DRAWN	DATE	NTS	
MDM	01/93	104G/1,2	Fig. 3.1

Revised

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,731





West of the West Hank Fault

Lower Jurassic:

4 Undivided siltstone, well bedded sandstone, heterolithic conglomerate

Upper Triassic Stuhini Group:

2c Andesitic pyroxene-feldspar phyric tuff breccia

2b Bioclastic and silty limestone

2a Andesitic to basaltic magnetic pyroxene-feldspar phyric flows

1d Maroon hornblende+/-feldspar+/-pyroxene phyric magnetic flows

1c Feldspar+/-biotite phyric ash tuffs and biotite phyric flows and breccias

1b Interbedded siltstone and well bedded sandstone

1a Undivided feldspar+/-pyroxene phyric ash tuff, lapilli tuff, tuff breccia, and volcanic derived siltstone and sandstone

East of the West Hank Fault

3 Undivided aphyric flows, rusty pyritic flow-banded rhyolite, minor siltstone and sandstone

INTRUSIVE ROCKS

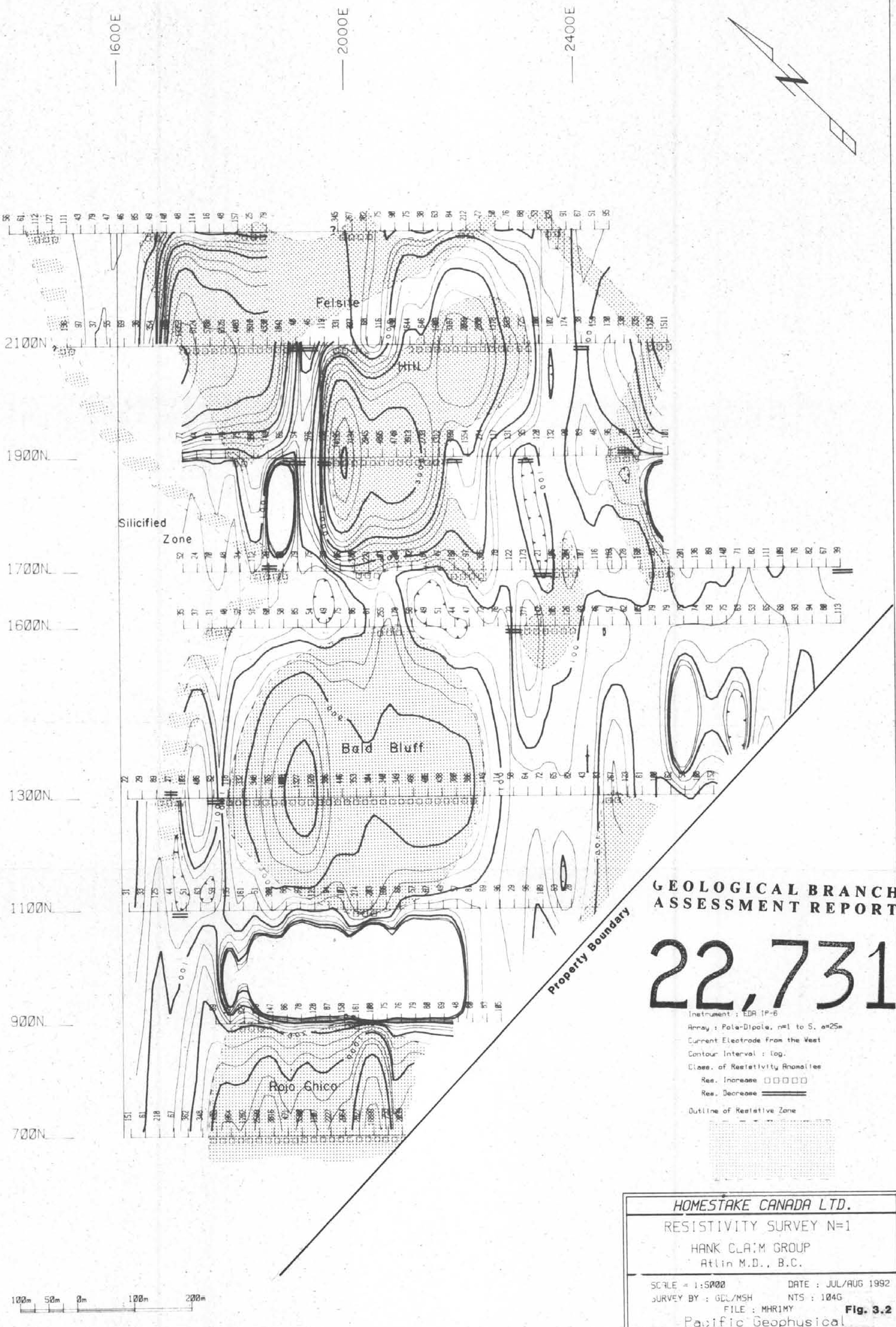
A Bald Bluff Porphyry: Orthoclase megacrystic hornblende phyric monzonite

B Medium grained hornblende diorite

ALTERATION

- quartz-clay-pyrite
- quartz-clay+/-pyrite
- quartz+/-pyrite
- clay+/-quartz
- sericite-pyrite-carbonate
- quartz-sericite-pyrite

- snowfield
- fault (defined, approximate, inferred)
- geologic contact (defined, approximate, inferred)
- alteration contact
- 2 Creek Name



GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,731

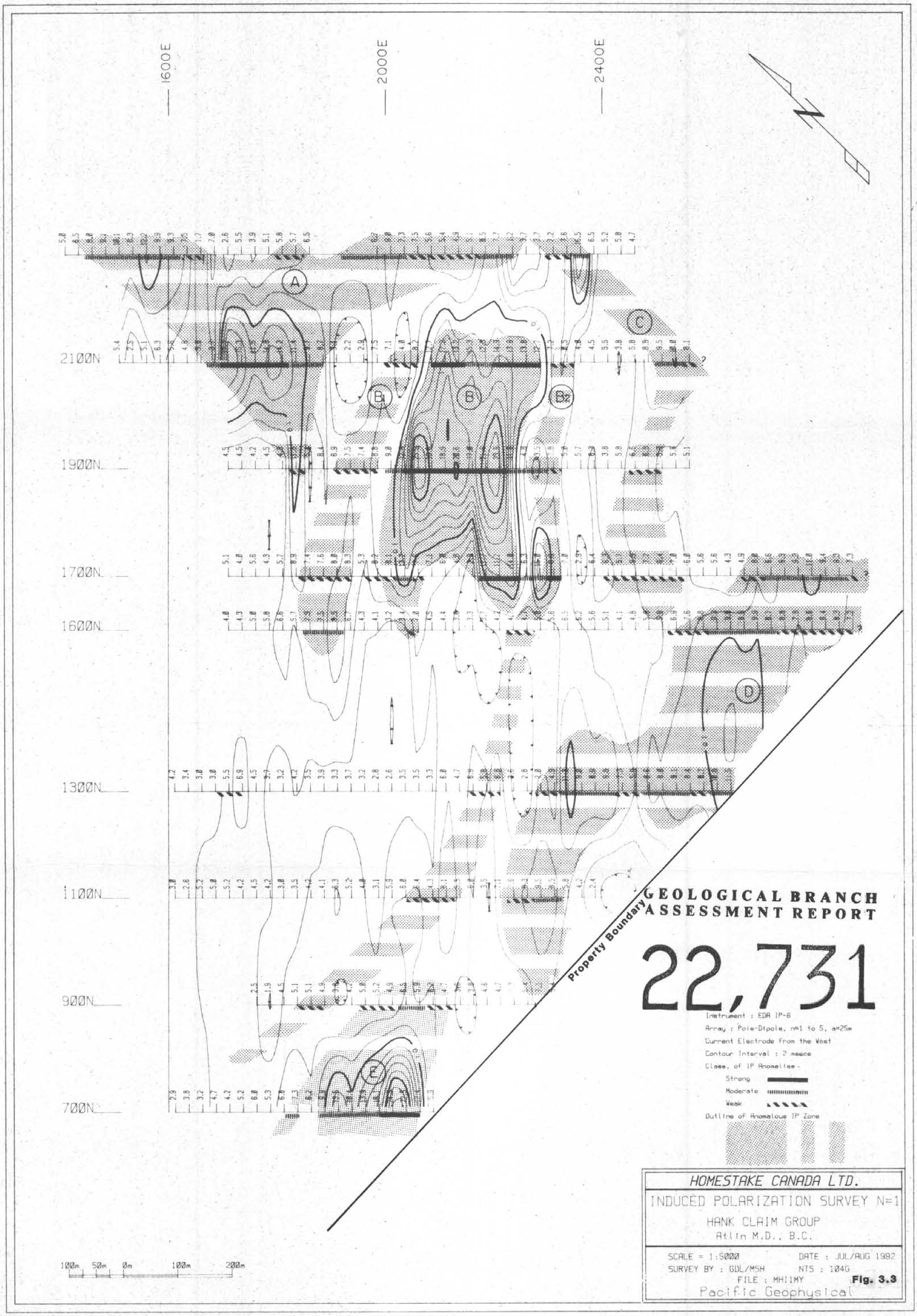
Instrument : EDA IP-6
Array : Pole-Dipole, n=1 to 5, a=25m
Current Electrode from the West
Contour Interval : log.
Class. of Resistivity Anomalies
Res. Increase □□□□□
Res. Decrease ═══════
Outline of Resistive Zone

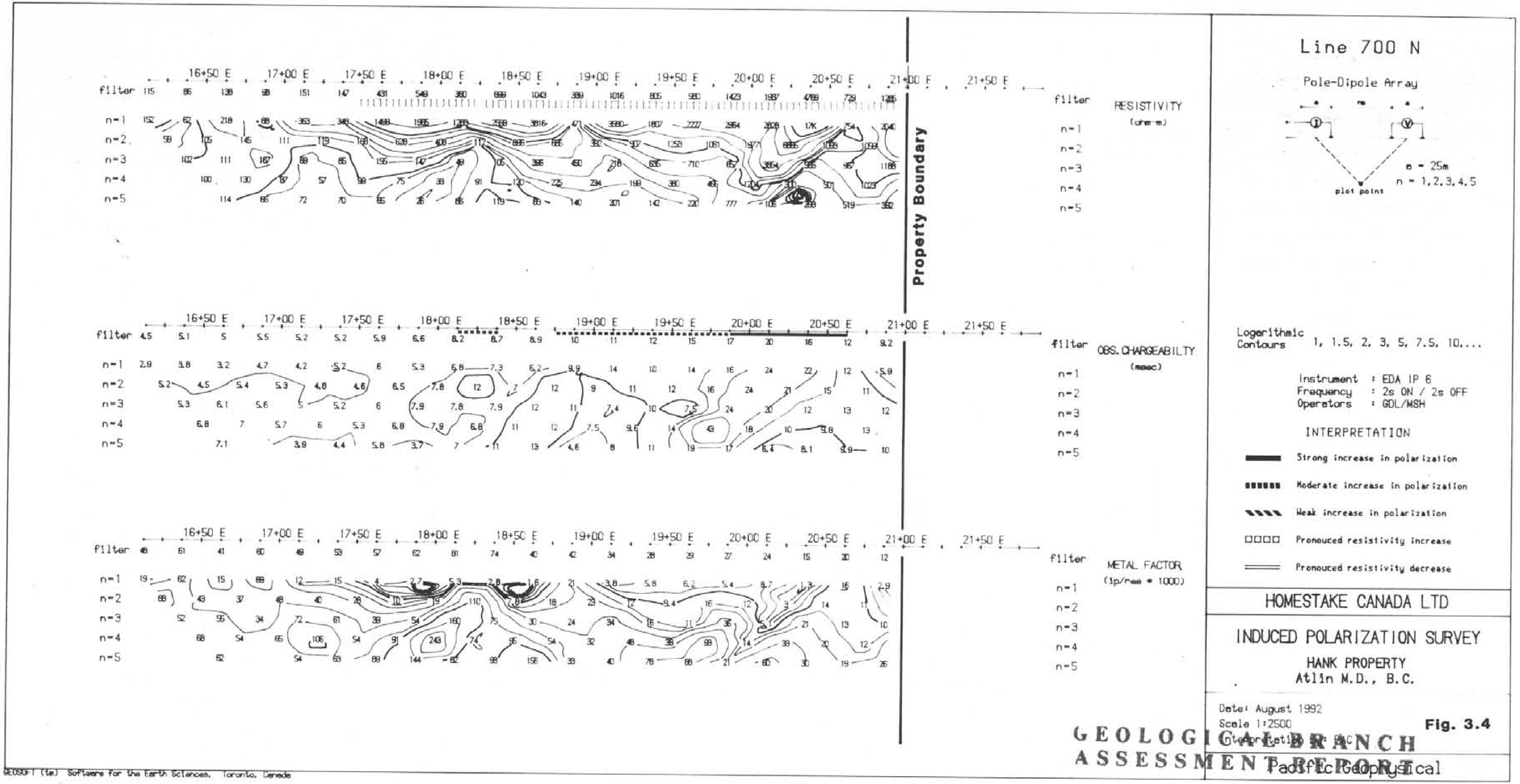
HOMESTAKE CANADA LTD.

RESISTIVITY SURVEY N=1

HANK CLAIM GROUP
Atlin M.D., B.C.

SCALE = 1:5000 DATE : JUL/AUG 1992
SURVEY BY : GCL/MSH NTS : 104G
FILE : MHR1MY
Fig. 3.2
Pacific Geophysical


1600E
2000E
2400E
N
2100N
1900N
1700N
1600N
1300N
1100N
900N
700N
A
B
B1
B2
C
D
E
Property Boundary
GEOLOGICAL BRANCH
ASSESSMENT REPORT
22,731
Instrument : EDA IP-6
Array : Pole-Dipole, n=1 to 5, a=25m
Current Electrode from the West
Contour Interval : 2 msecs
Class. of IP Anomalies -
Strong
Moderate
Weak
Outline of Anomalous IP Zone
HOMESTAKE CANADA LTD.
INDUCED POLARIZATION SURVEY N=1
HANK CLAIM GROUP
Atlin M.D., B.C.
SCALE = 1:5000
DATE : JUL/AUG 1992
SURVEY BY : GDL/MSH
NTS : 104G
FILE : MH11MY
Fig. 3.3
Pacific Geophysical
100m 50m 0m 100m 200m

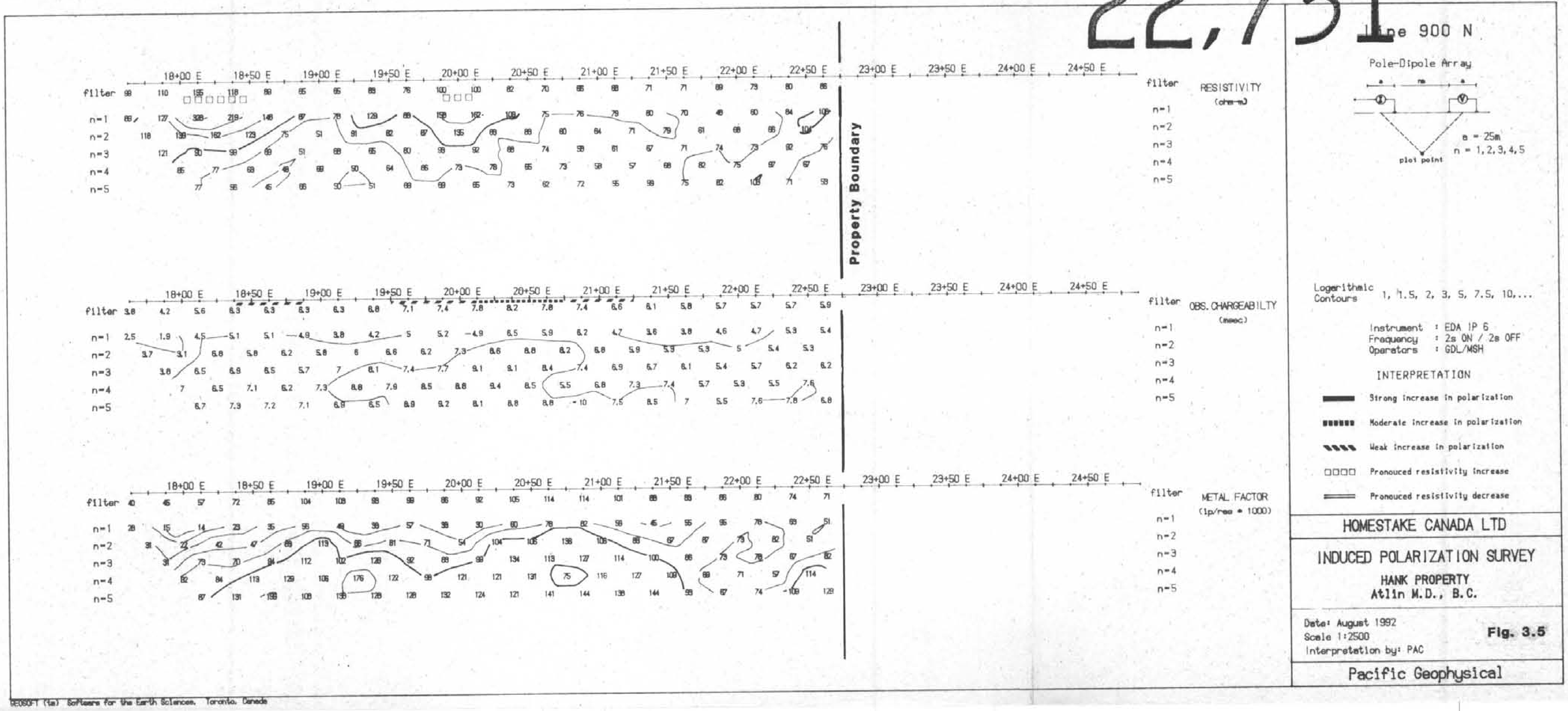


Line 700 N
Pole-Dipole Array
a = 25m
n = 1,2,3,4,5
plot point
RESISTIVITY (ohm-m)
OBS. CHARGEABILITY (msec)
METAL FACTOR (ip/res * 1000)
Property Boundary
Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...
Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH
INTERPRETATION
Strong increase in polarization
Moderate increase in polarization
Weak increase in polarization
Pronouced resistivity increase
Pronouced resistivity decrease
HOMESTAKE CANADA LTD
INDUCED POLARIZATION SURVEY
HANK PROPERTY
Atlin M.D., B.C.
Date: August 1992
Scale 1:2500
Fig. 3.4
Pacific Geophysical
GEOSOFT (tm) Software for the Earth Sciences, Toronto, Canada
GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,731

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,731



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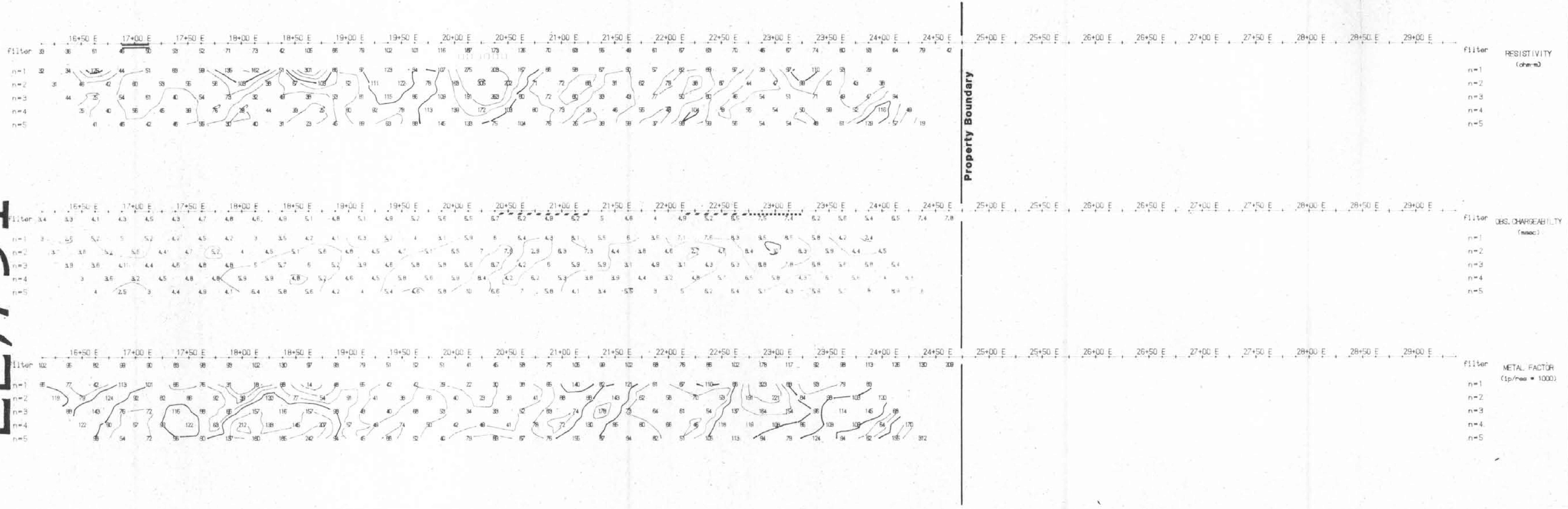
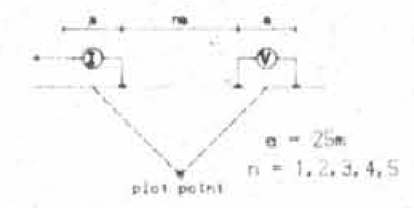


Line 1100 N

Pole-Dipole Array



Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument : EDA IP E
Frequency : 2s ON / 2s OFF
Operators : SDL/MSH

INTERPRETATION

- Strong increase in polarization
- Moderate increase in polarization
- Weak increase in polarization
- Pronounced resistivity increase
- Pronounced resistivity decrease

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Fig. 3.6

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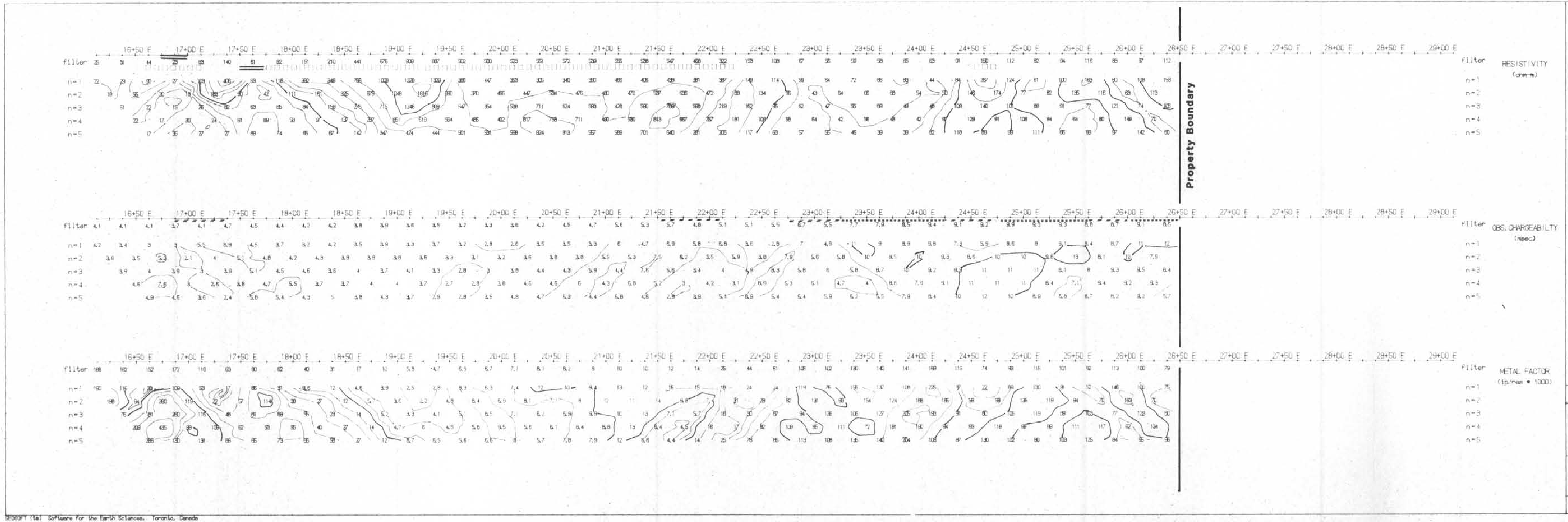

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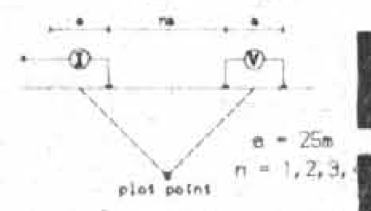
Line 1300 N

Pole-Dipole Array



Logarithmic Contours: 1, 1.5, 2, 3, 5, 7.5, 10,...

Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH

INTERPRETATION

- Strong increase in polarization
- Moderate increase in polarization
- Weak increase in polarization
- Pronounced resistivity increase
- Pronounced resistivity decrease

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Fig. 3.7

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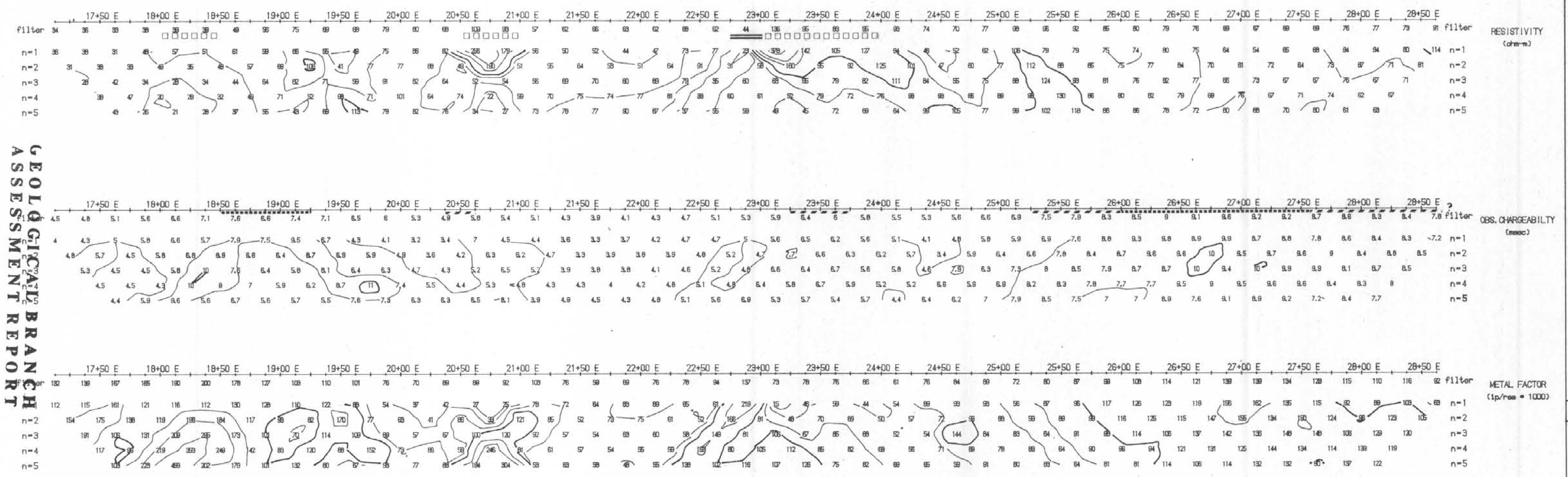

Line 1600N

Pole-Dipole Array

a = 25m
n = 1,2,3,4,5

plot point

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH

INTERPRETATION

Strong increase in polarization
Moderate increase in polarization
Weak increase in polarization
Pronouced resistivity increase
Pronouced resistivity decrease

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Fig 3.8

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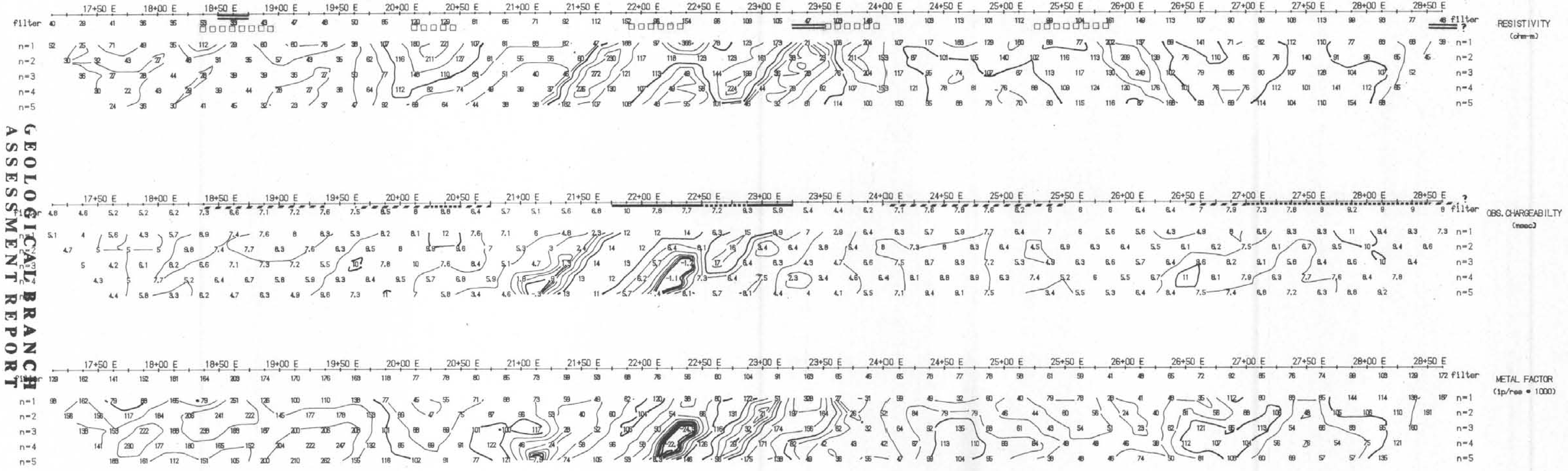
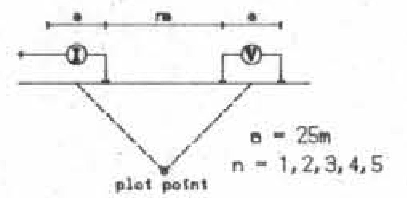


Line 1700 N

Pole-Dipole Array



Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH

INTERPRETATION

- Strong increase in polarization
- Moderate increase in polarization
- Weak increase in polarization
- Pronounced resistivity increase
- Pronounced resistivity decrease

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Fig. 3.9

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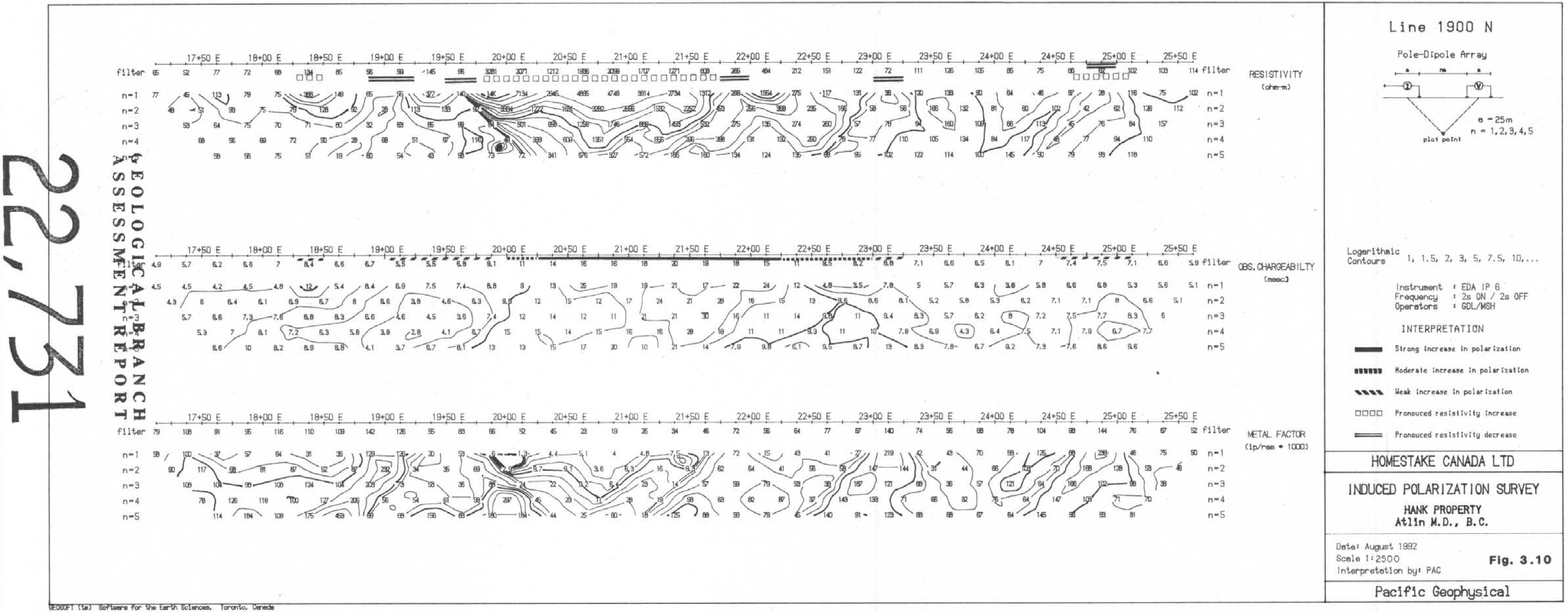

Line 1900 N
Pole-Dipole Array
a = 25m
n = 1,2,3,4,5
plot point
RESISTIVITY
(ohm-m)
OBS. CHARGEABILITY
(msec)
METAL FACTOR
(ip/res * 1000)
filter
n=1
n=2
n=3
n=4
n=5
17+50 E
18+00 E
18+50 E
19+00 E
19+50 E
20+00 E
20+50 E
21+00 E
21+50 E
22+00 E
22+50 E
23+00 E
23+50 E
24+00 E
24+50 E
25+00 E
25+50 E
Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...
Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH
INTERPRETATION
Strong increase in polarization
Moderate increase in polarization
Weak increase in polarization
Pronounced resistivity increase
Pronounced resistivity decrease
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Fig. 3.10
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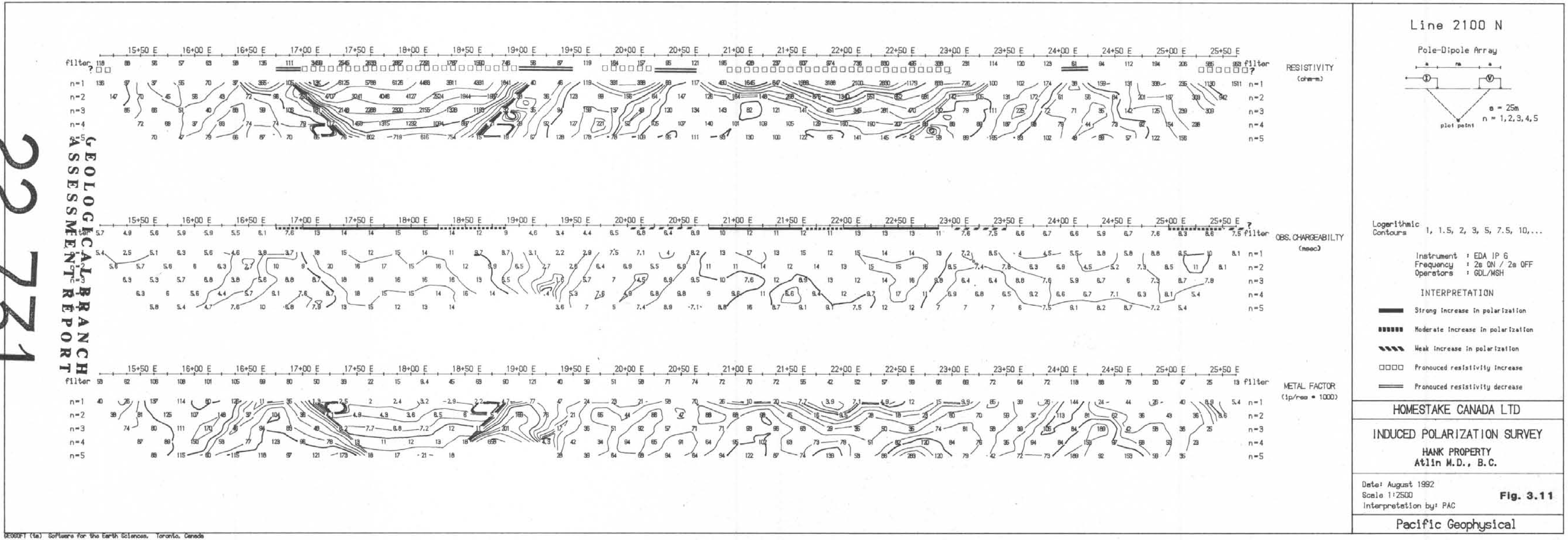

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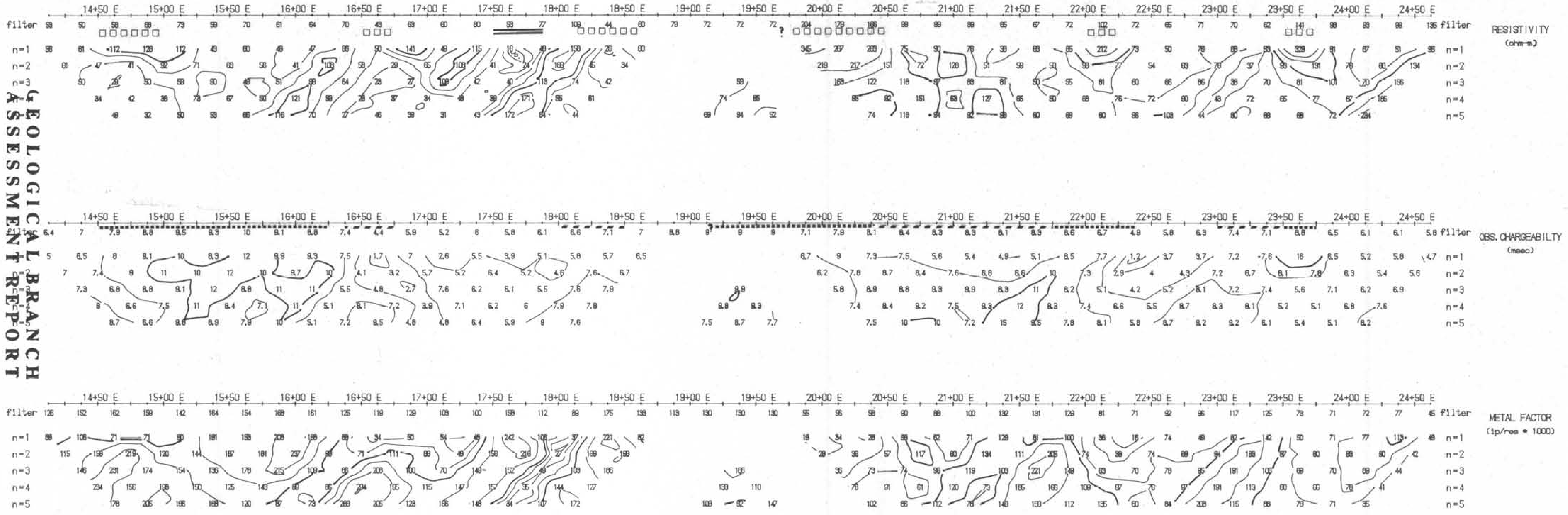

Line 2300 N

Pole-Dipole Array

a = 25m
n = 1,2,3,4,5
plot point

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Instrument : EDA IP 6
Frequency : 2s ON / 2s OFF
Operators : GDL/MSH

INTERPRETATION

- Strong increase in polarization
- Moderate increase in polarization
- Weak increase in polarization
- Pronounced resistivity increase
- Pronounced resistivity decrease

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Fig. 3.12

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