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03/86

GEOPHYSICAL REPORT
on an
INDUCED POLARIZATION SURVEY
on the
CHALICE 1 and WALLY III CLAIMS
Vancouver Mining Division - British Columbia

Lat. 49° 45' N Long. 123° 58' W

N.T.S. 92F/16E, 92G/13W

for

CHALICE MINING INC.

by

Douglas R. MacQuarrie, B.Sc.

Vancouver, B.C. April 30, 1985

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ILLUSTRATIONS

SUMMARY

The Chalice Mining Inc. property has been the subject of an intensive exploration program over the last few years involving geological mapping, soil geochemistry, VLF electromagnetic surveys, wide spaced and detailed induced polarization surveys, hand, backhoe and cat trenching, and diamond drilling. This work has outlined and confirmed the presence of numerous mineralized showings containing high gold values (0.1 to 6.0 oz./ton Au). Mineralization consists of generally coarse marcasite ± chalcopyrite and minor molybdenite and is associated with quartz, chlorite and epidote. It occurs in: 1) shear - quartz veins, 2) pod-like massive marcasite lenses, 3) diffuse - disseminated to massive sulfides in fracture controlled zones associated with moderate alteration and 4) disseminated sulfides associated with quartz stringer stockwork zones.

CONCLUSION AND RECOMMENDATION

The present surveys were successful in increasing the size potential of both the WALLY III and the 3V showings. Recent drilling in the WALLY III showing area, has confirmed the presence of quartz-marcasite-epidote mineralization at depth. Further drilling is recommended to further evaluate this zone.

The 3V showing has an apparent strike length of eighty metres, however the response amplitudes are small indicating generally low sufide content. However, given the high gold values associated with the Chalice showings, a trench is recommended to test the anomaly.

The JR showing survey results show increased levels of sulfide mineralization over an area of some 40 X 50 metres. The anomaly appears to be pod-like in shape, however thickening overburden conditions to the west, may be masking the geophysical responses. Recently completed drilling in this area returned assays of .902 oz/ton Au over a core length of nine feet. Accurate compilation of all the drilling, geological and geophysical data is required to further evaluate the significance of this impressive drill result.

Further detailed prospecting of geochemical anomalies located in the area of the WALLY III showing is required, especially in the near vicinity of L200 N 3+00 E. The presence of eight soil samples with anomalous gold content in this area is highly encouraging. If ground prospecting is unduly hindered by overburden or thick ground cover then further induced polarization test lines are recommended.

INTRODUCTION

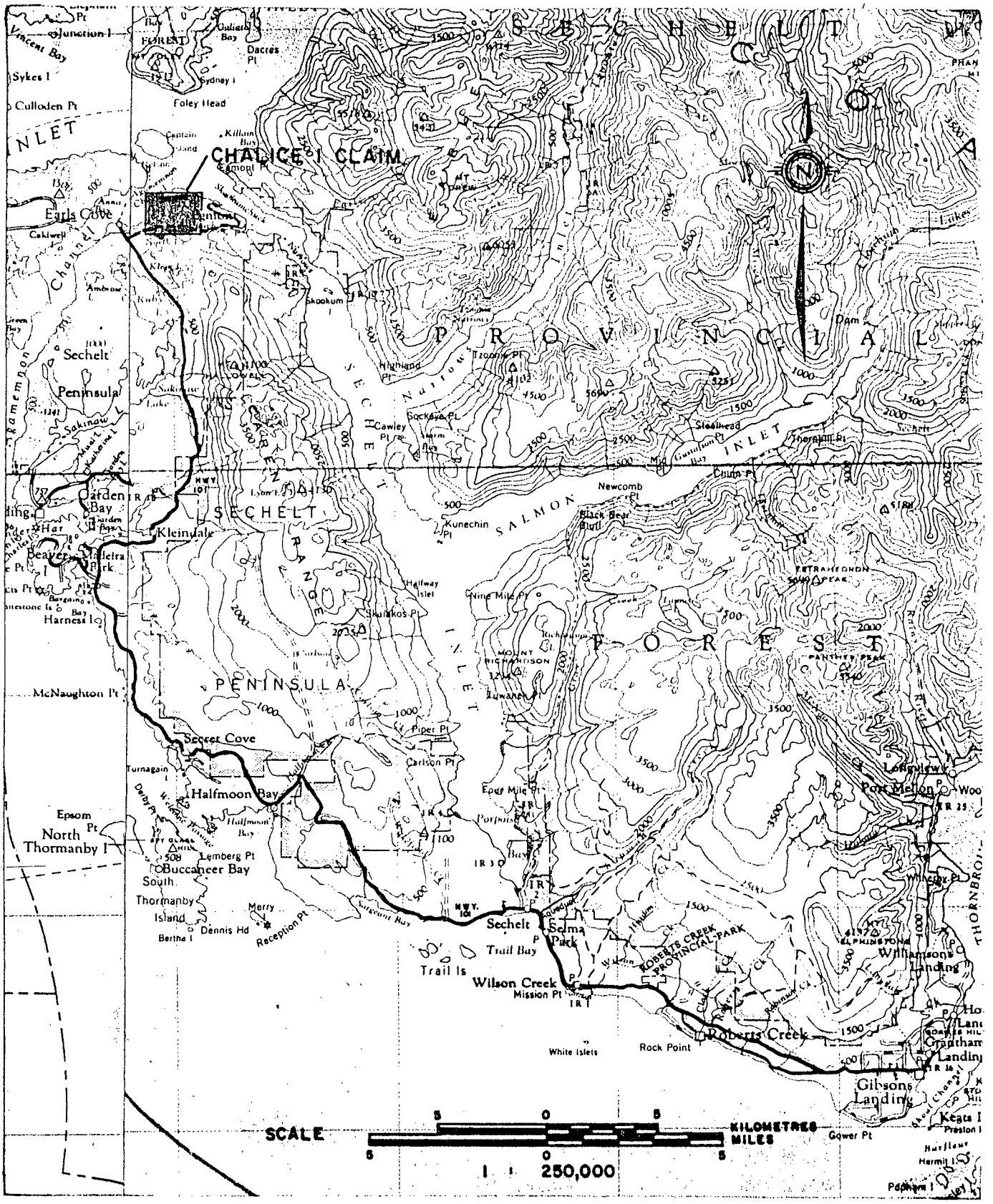
During the period March 6 to March 20, 1985, detailed induced polarization test lines were completed over selected areas of the CHALICE 1 and WALLY III claims. The claim area is located at the northern end of the Sechelt Peninsula near Earls Cove, some eighty kilometres north west of Vancouver, British Columbia (Figure 1).

The work was requested by Mr. Dieter Schindelhauer, President of Chalice Mining Inc. The program was supervised by the author and carried out by personnel supplied by Chalice Mining Inc.

CLAIM DATA

Chalice Mining Inc. is the recorded owner of the following modified grid claims, located in the Vancouver Mining Division (Figure 2):

Claim Name	Number of Units	Record No.	Expiry Date
CHALICE I	20	1146 (2)	Feb. 5, 1986
CHALICE II	20	1147 (2)	Feb. 12, 1986
CHALICE III	12	1160 (3)	March 9, 1986
WALLY I	9	1161 (3)	March 11, 1985
WALLY II	15	1162 (3)	March 11, 1985
WALLY III	18	1163 (3)	March 11, 1986
BACON I	20	1166 (3)	March 23, 1986
BACON II	20	1167 (3)	March 23, 1986
BACON III	20	1168 (3)	March 23, 1986
STEIN	4	1165 (3)	March 22, 1986



N.T.S. 92 G

CHALICE MINING INC.

ACCESS MAP

CHALICE 1 CLAIM

Vancouver Mining Division - British Columbia

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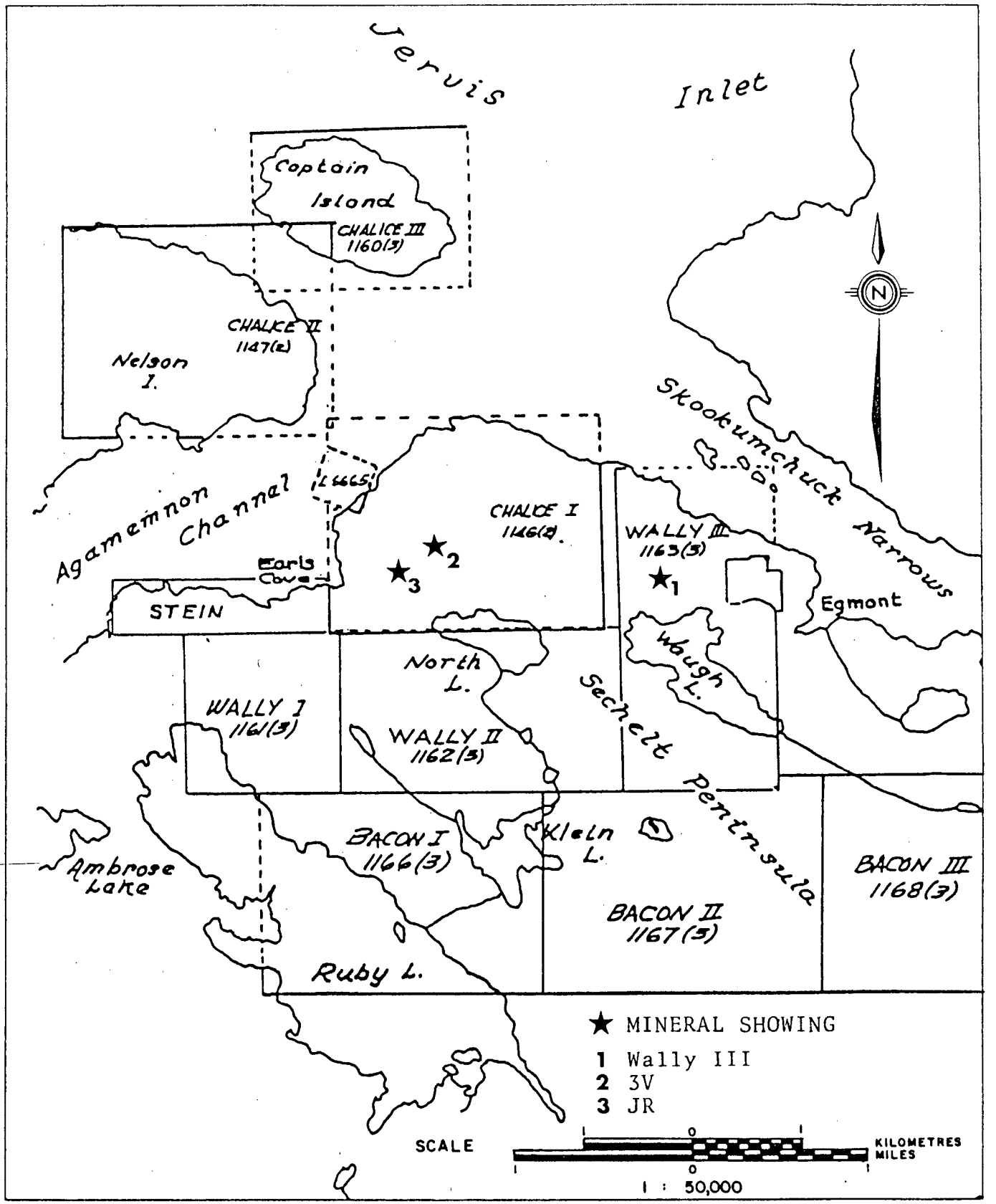
Figure 1



N.T.S. 92F/16E, 92G/13W

CHALICE MINING INC.

CLAIM MAP

CHALICE 1 CLAIM

Vancouver Mining Division - British Columbia

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Figure 2

Acceptance of this report for assessment purposes will extend the expiry dates of the WALLY I and WALLY II to March 11, 1986.

GEOLOGY

The regional geology was studied by Bacon (1957). He noted that the Sechelt Peninsula area is primarily underlain by batholitic rocks of the Coast Plutonic Complex which are generally of granodiorite composition. Northwesterly trending roof pendants, consisting of various volcanic and sedimentary units, are belived correlatable with the Upper Triassic Karmutsen Formation. These rocks are cut by younger feldspar porphyry, diorite and andesite dikes.

Geological mapping by Grove (1983), Fleming (1983), and S. Hodgson of Chalice Mining Inc., indicate that the major portion of the Chalice property is underlain by batholitic rocks comprised of hornblende and biotite-granodiorite, and diorite. Andesite, diorite and feldspar porphyry dikes are widespread and comprise up to 15% of the outcrop area.

Alteration is structurally controlled and generally occurs in irregular patches and/or associated with stringers containing quartz lined vugs, epidote, chlorite and sericite. Sulfide mineralization consists of marcasite and chalcopyrite $\pm$ molybdenite and is intimately associated with the alteration zones. Initial work by Groves (1983), indicates that the

gold is carried as sub-microscopic inclusions in marcasite as both native gold and as gold tellurides.

Many of the known quartz-marcasite-gold showings are spatially related to fine grained green coloured andesite dikes. These dikes generally exhibit chilled contacts and in drill hole WALLY III - 16 are observed to grade, over a distance of one metre, into a dioritic body. It is believed that most of the Chalice precious metal mineralization is associated with late phase dioritic intrusions.

INDUCED POLARIZATION SURVEY RESULTS AND DISCUSSION

Wally III Showing, Waugh Lake Grid

On March the 6th and 7th, 1985 a total of 65 stations were completed. A local grid was established with the co-ordinate zero at the WALLY III showing. A baseline was flagged at azimuth 120° and cross lines established at 30 metre intervals along the baseline. The induced polarization and apparent resistivity maps (Figures 5 and 6) are located at the back of the report.

A linear, induced polarization high was outlined by the survey. The zone trends at an azimuth of 150°, has a strike length exceeding 170 metres and an apparent width of 10 to 20 metres. Anomalous values range from 6 to 8 percent frequency effect (PFE) in a background of 5 PFE. These values are generally co-incident with high apparent resistivities (ranging between 10,000 to 30,000 ohm metres). Background resistivities of 1,000 to 5,000 ohm metres indicate very thin overburden conditions.

Recent diamond drilling in the vicinity of this anomaly by Chalice Mining Inc., indicates that the PFE high is caused by fracture controlled pyrite in altered granodiorite near the contact with a medium to fine grained diorite dike. Quartz, epidote and chlorite with variable amounts of pyrite, chalcopyrite, molybdenite and magnetite were observed at depths from 23 to 35.2 metres (end of hole). The strong resistivity high is related to the fine grained diorite intersected by DDH 17. Sulfide mineralization in the underlying, older, granodiorite appears intimately associated with this contact. (At the contact, the diorite is medium green in colour with a micro-granitic texture.)

The geophysical data suggests that the sulfide mineralization noted in DDH 17 is continuous from 0+65S on L30E to 0+15S on L60W and possibly as far as 0+15N on L90W, and based on positive assay results from DDH holes 16 and 17, should be further tested by diamond drilling.

The Wally III mineralization, located at station ON LOE, was detected by the survey. PFE values reach a maximum of 7.5 PFE and appear to be continuous between LO and L30W. The anomaly is flanked on the south by a 100 m. long, linear, apparent resistivity high (with values greater than 10,000 ohm metres). The showing, which has been trenched over a length of 15 m., consists of a 1-2 m. wide quartz-shear vein containing minor pyrite, 5 to 30% chalcopyrite in blebs and

disseminations, 2% molybdenite and minor coarse magnetite. Grab samples by Chalice personnel assay in the range 0.1 to 0.3 oz./per ton Au. The mineralization occurs immediately below a strong 10-20 cm. wide shear zone that strikes 120° and dips 54° W., roughly paralleling the resistivity high feature.

DDH 16, which was spotted to test the Wally III showing along strike and down dip, intersected 15 metres of fine grained diorite that graded over 60 cm. into a green andesitic contact zone containing sub angular inclusions of granodiorite. A 15 cm. wide quartz carbonate vein containing minor chalcopyrite, epidote and gypsum was noted at a depth of 23.4 m., which probably represents the extension of the Wally III showing to the north west. This data suggests that the observed weak I.P. response is related to the generally weak sulfide mineralization noted, and the high resistivities to a dike or sill like body of diorite sub-paralleling the baseline. The Wally III showing appears to have much lower tonnage potential than the mineralized zone tested by DDH 17.

The Geochemical Map, figure 4, for the Waugh Lake grid area is included at the back of this report. Soil samples were obtained by Chalice Mining Inc. and analyzed by atomic absorption at Chemex Labs. Values are plotted only for Au and Ag greater than, or equal to, 20 ppb and 0.4 ppm, respectively.

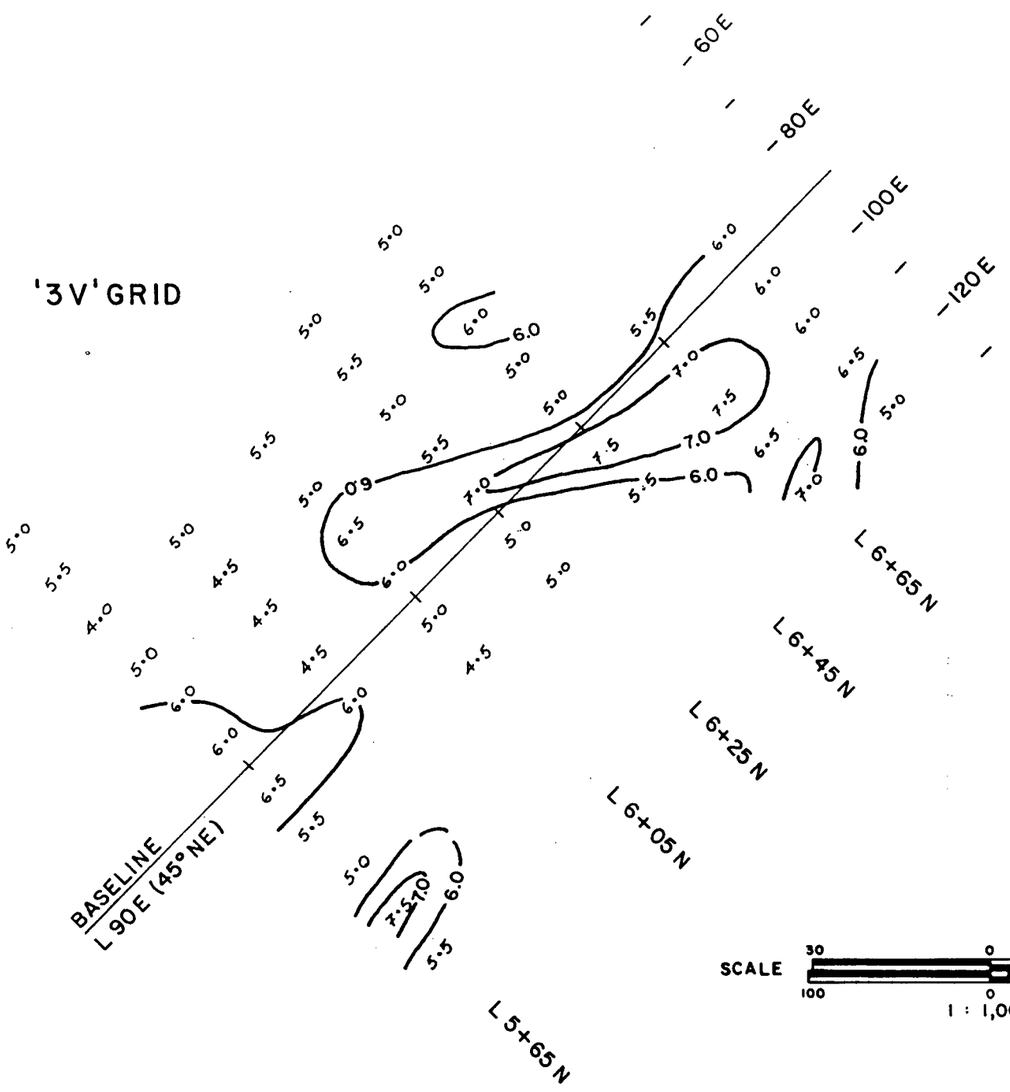
The grid is very coarse with grid lines at 100 m. intervals, and stations at 30 m. intervals. The largest value obtained, 3,500 ppb., is located at 1+00E on L200N on strike with the projection of the Wally III showing. Given the generally poor geochemical expression of the mineralization outlined in the Grid 3 area of figure 4, further detailed prospecting in the area of Grid 1-BL 3+75N, and 5+00N and especially within a 100 metre radius of L200N 3+00E is required (eight anomalous samples are located within the radius). If overburden and ground cover in the area does not allow thorough prospecting, then further induced polarization test lines will be required.

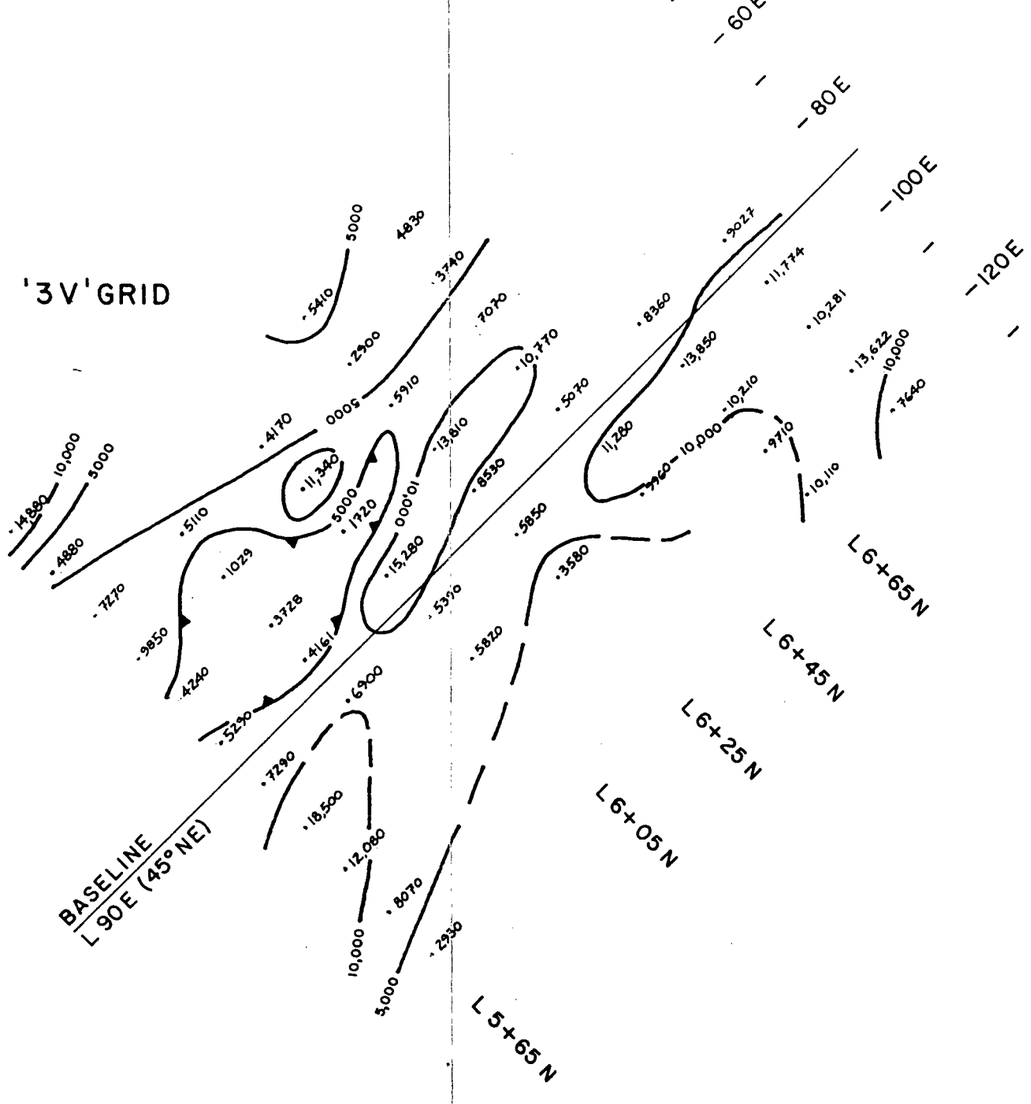
3V Showing, Chalice 1 Claim Area

A total of 46 induced polarization and apparent resistivity observations were completed in the 3V showing area on March 19, 1985. The dipole-dipole array with an 'a' spacing of 10 metres and 'n' equal to 1 was used throughout. The data is presented on figure 3, after this page.

The induced polarization survey outlined a PFE high zone with values ranging from 6 to 7.5 PFE in a background of 4.0 to 5.0 PFE . The weakly anomalous zone is coincident with the 3V showing at L6+05N 0+73E and extends north easterly (bearing 070^{o}) a distance of 90 metres.

The apparent resistivity data indicated overburden conditions to be thin, say less than 5 metres.





INDUCED POLARIZATION

Readings in % Frequency Effect

APPARENT RESISTIVITY

Readings in ohm-metres

Instrument : Sabre Frequency Domain, dipole-dipole array. a=10m, n=1.

Survey date: March 19, 1985.

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3V GRID

CHALICE MINING INC.

CHALICE I CLAIM

SECHELT PENINSULA AREA

VANCOUVER MINING DIVISION - BRITISH COLUMBIA

April 2, 1985 Figure 3

In general, areas underlain by induced polarization highs are co-incident with apparent resistivity highs (greater than 8,000 ohm metres). Based on survey results in the Wally III showing area, this data suggests that the induced polarization high is related to an underlying dioritic intrusive. A program consisting of 20 to 30 metres of backhoe trenching across the strike of the high I.P. zone is recommended to evaluate the economic significance of this anomaly.

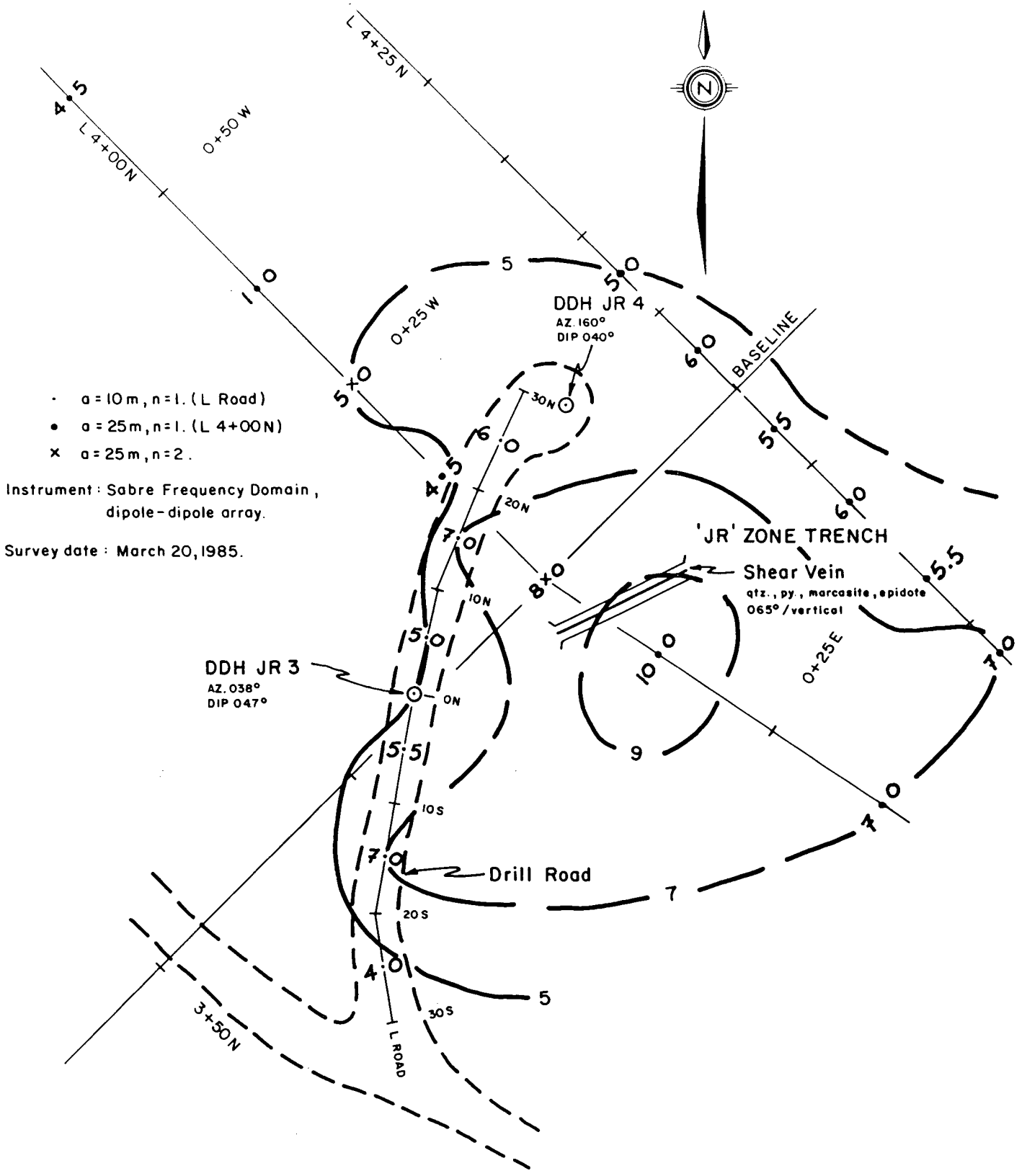
JR Showing, Chalice 1 Claim Area

Detailed surveying in the area of the JR Showing was completed on March 20, 1985. The I.P. Plan Map, figure 7, is located after this page.

The survey has outlined a 40 m. diameter, roughly circular zone, of increased PFE's. Anomalous values range from 7.0 to 10.0 PFE in a background of less than 5.0 PFE . The peak of the anomaly is at 0+12.5E on L4N, immediately adjacent to the JR Showing. It is apparently cut off to the west by thickening overburden conditions.

The showing consists of a 10 cm. to 1.5 m. wide zone of sub-parallel quartz-marcasite-epidote stringers. The zone strikes 065^{o} and has an apparent near vertical dip.

The approximate location of diamond drill holes JR3 and 4 are shown on figure 7. DDH JR3 intersected a nine foot section of heavy sulfide material associated with quartz and sericite. This section assayed 0.902 oz./ton Au.



'JR' ZONE
IP PLAN MAP

APPROXIMATE DDH & ROAD LOCATIONS

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Figure 7

Further induced polarization surveys will not be effective in tracing the JR showing to the west and north west of the base-line as a result of the deep overburden conditions interpreted in that area from the previous, deeper sounding, induced polarization work (MacQuarrie, 1983).

Detailed compilation of the geological and diamond drill hole data obtained in this area will be required to evaluate the potential of this zone to host significant tonnages of mineralization. If the data suggests that the structure controlling the mineralization is continuous and gaining strength to the west of the known showing, then perhaps several angle holes should be spotted at 30 m. intervals along strike to the west. Evidence for a major structure is readily apparent considering the near vicinity of a major topographic linear and the linear series of induced polarization highs located along strike to the north east.

Respectfully submitted,

D.R. MacQuarrie, B.Sc.
Geophysicist

REFERENCES

Bacon, W.R. (1957): Geology of Lower Jervis Inlet, British Columbia; Bull. No. 39, B.C. Dept. of Mines.

Fleming, David (1983): Geology and Structure of the CHALICE I and STEIN mineral claims, March 31, 1983.

Grove, Edward W. (1982): Geological Report and Work Proposal on the Chalice Claims in the Lower Jervis Inlet Area; June 28, 1982

(1982): Supplement to Geological Report and Work Proposal on the Chalice Claims in the Lower Jervis Inlet Area; August 30, 1982.

Grove, Edward W. (1983): Report and Work Proposal on the Chalice Property, December 6, 1983.

MacQuarrie, Douglas R. (1983): Geophysical Report on Induced Polarization, Magnetometer, and VLF-EM Surveys on the CHALICE I Claim, Sechelt Peninsula Area, Vancouver MD, April 14, 1983.

CERTIFICATE

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

1. I am a Consulting Geophysicist of A & M Exploration Ltd., with offices at #614 - 850 West Hastings Street, Vancouver, B.C., V6C 1E1.

2. I am a graduate of the University of British Columbia with a degree in Geology and Geophysics (B.Sc., 1975).

3. I have been practising my profession since 1975 and have been active in the mining industry since 1971.

4. I am an active member of the Canadian Institute of Mining and Metallurgy and a member of the British Columbia Geophysical Society.

5. This report is based on fieldwork supervised by myself during March, 1985 and on information listed under References.

6. I hold no interest, nor do I expect to receive any, in the Chalice Mining Inc. properties, or in Chalice Mining Inc.

April 30, 1985
Vancouver, B.C.

Douglas R. MacQuarrie,
B. Sc.

AFFIDAVIT OF EXPENSES

I, Douglas R. MacQuarrie, hereby certify that work was completed on the properties of Chalice Mining Inc., in the Vancouver Mining Division, near Egmont B.C., during the period December 5, 1984 to April 30, 1985, to the value of the following:

CHALICE 1 Claim, Record No. 1146 (2)

Induced Polarization Survey, utilizing a four man crew, including instrument rental charges, wages, room and board, consummables and vehicle rental,

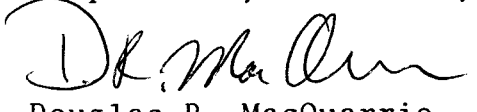
2.0 days @ $1450/day	$2,900.00	
Mob-Demob Van to Sechelt at 50% of $650.00	325.00	
Geophysical Report 50% of $1856.77	928.39	
	$4,153.39	$4,153.39

WALLY III Claim, Record No. 1163 (3)

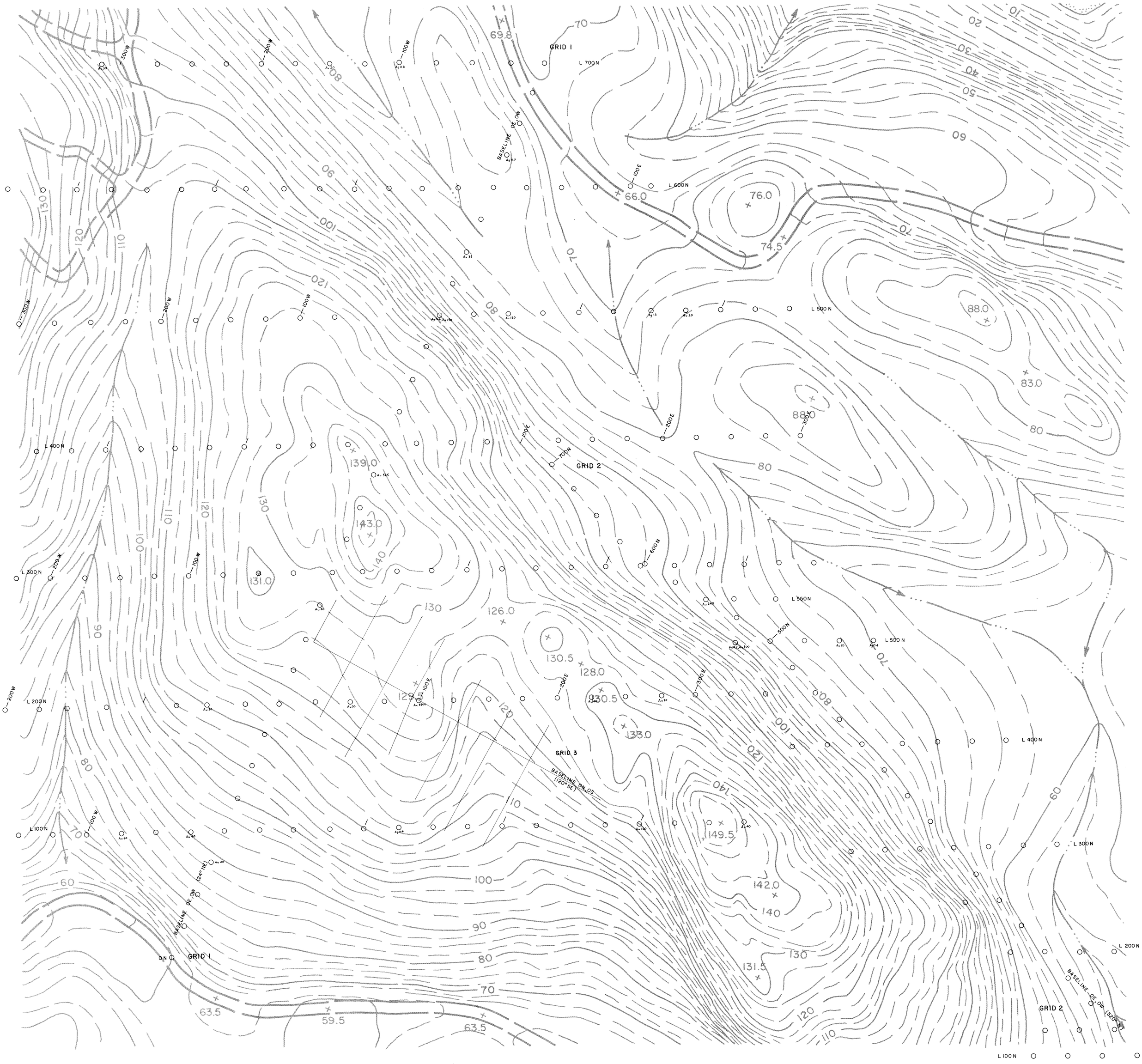
Induced Polarization Survey, as above

2 days @ $1450/day	$2,900.00	
Mob-Demob Sechelt to Van at 50% of $650.00	325.00	
Geophysical Report 50% of $1856.77	928.39	
	$4,153.39	$4,153.39
	GRAND TOTAL	$8,306.78

Respectfully submitted,



Douglas R. MacQuarrie,
Geophysicist



LEGEND

- Soil sample site, ppm Ag, ppb Au.
- Sample grid line, line number.
- Topographic contours, elevation in metres.
- Spot elevation in metres.
- Road
- Creek

Note: Analytical results plotted where ppm Ag ≥ 0.4, ppb Au ≥ 20.

CHALICE MINING INC.

WALLY III CLAIM

SECHELT PENINSULA AREA

VANCOUVER MINING DIVISION – BRITISH COLUMBIA

GEOCHEMICAL MAP

WAUGH LAKE GRIDS

SCALE 1 : 1,000

GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,264

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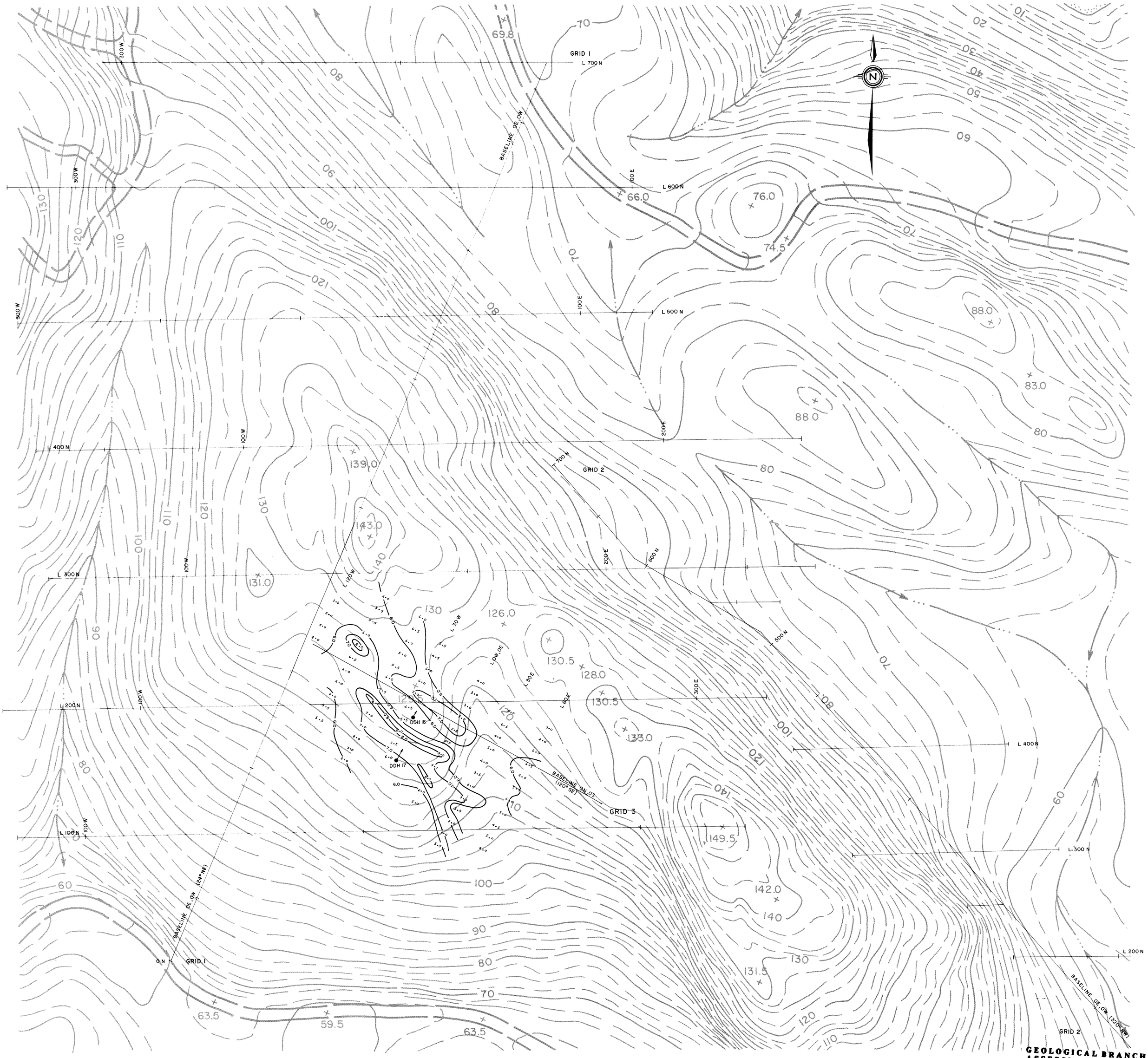
March 27, 1985

Figure 4



LEGEND

Isometric Contours — Reading of Percent Frequency Effect (%) — Survey grid line

Topographic contours, elevation in metres.

Spot elevation in metres.

Road

Creek

DDH Collar

Instrument : Sabre Frequency Domain, dipole – dipole array.
n=1, a=10 metres.

Survey date : March 6-7, 1985

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,264
PART
2 OF 2

CHALICE MINING INC.
WALLY III CLAIM
SECHELT PENINSULA AREA
VANCOUVER MINING DIVISION – BRITISH COLUMBIA

WAUGH LAKE GRIDS
INDUCED POLARIZATION MAP

SCALE 1 : 1,000 — 30 0 30 METRES / 100 0 100 FEET

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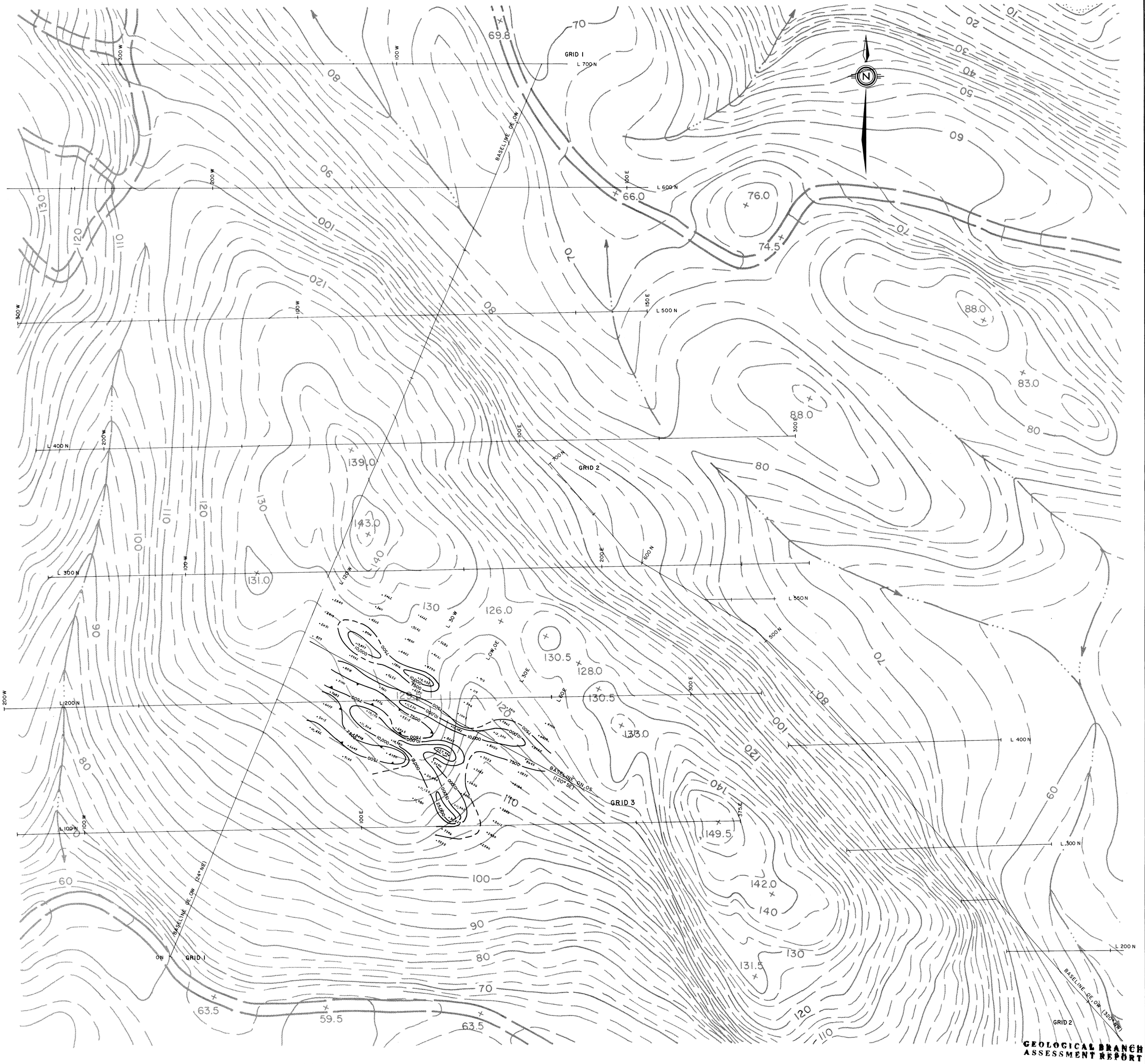
March 27, 1985

Figure 5



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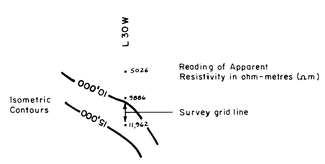

Topographic contours, elevation in metres.

131.0 Spot elevation in metres.

Road

Creek

Instrument: Sabre Frequency Domain, dipole – dipole array.
n=1, a=10 metres.

Survey date: March 6-7, 1985

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,264
PART 2 OF 2

CHALICE MINING INC.
WALLY III CLAIM
SECHELT PENINSULA AREA
VANCOUVER MINING DIVISION – BRITISH COLUMBIA

WAUGH LAKE GRIDS

APPARENT RESISTIVITY MAP

SCALE 30 0 30 METRES
100 0 100 FEET
1 : 1,000

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March 27, 1985

Figure 6