RP/GP

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Texada Island Prop.
92F 10E/15E
92F 271,473?

SUPERINTENDENT OF BROKERS
AND
VANCOUVER STOCK EXCHANGE
(Venture Company)

JUN 5 1992

Geological Survey Branch
MEMPR

STATEMENT OF MATERIAL FACTS #38/92
EFFECTIVE DATE: MAY 21, 1992

VANANDA GOLD LTD.
Suite 705, 475 Howe Street, Vancouver, British Columbia V6C 2B3
Telephone: (604) 688-0323

NAME OF ISSUER, ADDRESS OF HEAD OFFICE AND TELEPHONE NUMBER

Suite 700, 625 Howe Street, Vancouver, British Columbia V6C 2T6

ADDRESS OF REGISTERED AND RECORDS OFFICES OF ISSUER

Montreal Trust Company
2nd Floor, 510 Burrard Street, Vancouver, British Columbia V6C 3B9

NAME AND ADDRESS OF REGISTRAR AND TRANSFER AGENT FOR ISSUER'S SECURITIES IN BRITISH COLUMBIA

OFFERING: 900,000 COMMON SHARES WITHOUT PAR VALUE CONSISTING OF 600,000 COMMON SHARES AT THE ESTIMATED PRICE OF $0.75 PER SHARE (THE "INITIAL SHARES") AND 300,000 COMMON SHARES WITHOUT PAR VALUE AT THE MINIMUM PRICE OF $0.75 PER SHARE ON A BEST EFFORTS BASIS (THE "REMAINING SHARES").

(Minimum) 600,000 Shares	Minimum Price to Public (1)	Minimum Commission	Minimum Proceeds to be received by the Issuer (2)
Per Share:	$ 0.75	$ 0.05625	$ 0.69375
Total:	$450,000.00	$33,750.00	$416,250.00

(Maximum) 900,000 Shares	Minimum Price to Public (1)	Estimated Commission	Estimated Proceeds to be received by the Issuer (2)
Per Share:	$ 0.75	$ 0.05625	$ 0.69375
Total:	$675,000.00	$50,625.00	$624,375.00

(1) The actual price to the public is to be determined by the Issuer and the Agent in accordance with the rules of the Vancouver Stock Exchange.

(2) Before deduction of the costs of this issue estimated to be $15,000.

LOG NO: JUN 10 1992 VAN 5
ACTION:
FILE NO:

This Statement of Material Facts qualifies for sale to the public through the facilities of the Vancouver Stock Exchange (the "Exchange") at the market price at the time of sale in accordance with the rules and policies of the Exchange the following shares of the Issuer:

1. A total of 600,000 common shares (the "Initial Shares") of the Issuer, at the minimum issue price of $0.75 per share;

2. A total of 300,000 common shares (the "Remaining Shares") at the minimum issue price of $0.75 per share;

3. A total of 600,000 common shares issued on January 21, 1992 by way of a private placement;

4. A total of 600,000 common shares issuable upon the exercise of share purchase warrants granted in connection with the private placement in paragraph 3 above.

The securities offered hereunder are speculative in nature. Information concerning the risks involved may be obtained by reference to this document; further clarification, if required, may be sought from a broker.

The Issuer is, under the Rules of the Vancouver Stock Exchange, a "Venture Company".

ADDITIONAL OFFERING: The Agent has agreed to purchase (the "Guarantee") any of the Initial Shares offered hereby which have not been sold at the conclusion of the Offering (see "Consideration to Agent"). Any of the Initial Shares acquired by the Agent under the Guarantee will be distributed under this Statement of Material Facts through the facilities of the Vancouver Stock Exchange at the market price at the time of sale.

AGENT

PACIFIC INTERNATIONAL SECURITIES INC.
Suite 1500, 700 West Georgia Street
Vancouver, B.C.
V7Y 1G1

Neither the Superintendent of Brokers nor the Vancouver Stock Exchange has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

1. PLAN OF DISTRIBUTION

A. The Offering

The Issuer by its Agents hereby offers (the "Offering") to the public through the facilities of the Vancouver Stock Exchange (the "Exchange") a total of 900,000 common shares without par value in its capital stock, consisting of:

(a) 600,000 common shares (the "Initial Shares") at a fixed price to be determined in accordance with the rules and policies of the Exchange, but in any event at a price not less than $0.75 per share; and

(b) 300,000 common shares (the "Remaining Shares") at the prevailing market price subject to the minimum price of $0.75 per share.

The Initial Shares and the Remaining Shares are hereinafter referred to as the Shares. The Offering of the Initial Shares will take place on a day (the "Offering Day") not more than 180 calendar days following the date of acceptance (the "Effective Date") of this Statement of Material Facts by the Exchange and the Superintendent of Brokers for the Province of British Columbia. The Remaining Shares will be sold on a best efforts basis after the completion of the Offering of the Initial Shares, but within a period of 180 calendar days following the Effective Date of this Statement of Material Facts.

B. Appointment of Agent

The Issuer by an agreement (the "Agency Agreement") dated November 30, 1991, as amended March 9, 1992, appointed Pacific International Securities Inc. as its agent (the "Agent") to offer the Shares to the public through the facilities of the Vancouver Stock Exchange.

The Issuer will pay the Agent a commission of 7.5% of the offering price of the Shares sold.

The Agent has agreed to purchase (the "Guarantee") any Initial Shares unsubscribed for at the conclusion of the Offering Day, at the Offering Price. In consideration therefor, the Issuer has agreed to allot and issue to the Agent immediately following the Offering Day, non-transferable share purchase warrants (the "Agent's Warrants") entitling the Agent to purchase up to 300,000 common shares of the Issuer at any time up to the close of business one (1) year from the Offering Day, at the minimum

price or prices permitted by the rules and policies of the Exchange. Any Shares acquired by the Agent under the Guarantee will be distributed under this Statement of Material Facts through the facilities of the Exchange at the market price at the time of sale.

The Agent's Warrants will contain provisions for the appropriate adjustment in the class, number and price of shares issuable upon the exercise thereof upon the occurrence of certain events, including any subdivision, consolidation or reclassification of the shares of the Issuer, the payment of stock dividends or the amalgamation of the Issuer.

The Issuer has granted the Agent a right of first refusal with respect to any future public equity financing it may require during the twelve month period following the Effective Date.

The Agent reserves the right to offer selling group participation in the normal course of the brokerage business to selling groups of other licenced dealers, brokers and investment dealers who may or may not be offered part of the commissions or bonuses derived from the Offering.

The obligations of the Agent under the Agency Agreement may be terminated prior to the Offering Day, at the Agent's discretion, on the basis of its assessment of the state of the financial markets and may also be terminated upon the occurrence of certain stated events.

Mr. Mark Jarvis, a registered representative for the Agent, owns 20,000 shares of the Issuer and is a shareholder participating in the Shareholder Offering disclosed in Item 1(C) herein.

Pursuant to a Fiscal Agency Agreement dated June 1, 1991, the Agent received 40,350 shares of the Issuer in consideration for services rendered.

C. Shareholder Offering

This Statement of Material Facts also qualifies for sale, through the facilities of the Exchange at the market price at the time of sale, a total of 600,000 shares (and any shares to be issued on exercise of warrants to purchase an additional 600,000 shares) which were acquired by certain shareholders of the Issuer pursuant to private placements as disclosed in Items 8(C) and Item 9 herein (the "Shareholder Offering"):

Name of Shareholder	Number of Shares	Number of Warrants
Stanley L. Beale	160,000	160,000
Garth Albright	40,000	40,000
David Watkins	25,000	25,000
Mark Jarvis	20,000	20,000
Gordon Buchanan	70,000	70,000
Diane M. Kyle	30,000	30,000
William S. Beale	25,000	25,000
Michael Ryan	50,000	50,000
David Ashby	10,000	10,000
Corinne Hertel	105,000	105,000
Able Palace Limited	50,000	50,000
Charles Forster	15,000	15,000

The Shareholder Offering will proceed upon completion of the distribution of the Initial Shares and the Remaining Shares as set out in Item 1A herein, and continue for a period of 180 calendar days following the Effective Date.

Except as set out in this Statement of Material Facts there are no payments in cash, securities or other consideration being made, or to be made, to a promoter, finder or other person or company in connection with the Offering. The directors, officers and other insiders of the Issuer may purchase Shares from the Offering.

2. HOW THE NET PROCEEDS OF THE ISSUER ARE TO BE SPENT

The Issuer cannot estimate with certainty the price at which the Initial Shares will sell, but if all the Initial Shares are sold at a price of $0.75 per Share, the Issuer will receive gross proceeds of $450,000 which, after deduction of the commission of $33,750 will net the Issuer $416,250 (the "Minimum Offering"). If all of the Initial Shares and the Remaining Shares are sold at a price of $0.75 per Share, the Issuer will receive gross proceeds of $675,000 which, after deduction of the commission of $50,625 will net the Issuer $624,375 (the "Maximum Offering").

The principal purposes for which the estimated net proceeds from either the Maximum Offering or the Minimum Offering are to be spent are as follows:

		Minimum Offering	Maximum Offering
(a)	To pay the cost of this Statement of Material Facts:	$ 15,000	$ 15,000
(b)	To complete Phase I of a drilling program on the Sandy and Eagle Grid as recommended by Grant Hendrickson, P.Geoph., in his Engineering Report dated August 1991:	162,500	162,500
(c)	To complete Phase I of a drilling program on the Little Billie Mine as recommended by Grant Hendrickson, P.Geoph., in his Engineering Report dated August 1991:	100,000	200,000
(d)	For general corporate purposes:	138,750	250,000
	TOTAL:	$416,250	$627,500

As at April 30, 1992, the Issuer had a working capital deficiency of approximately $86,000.

None of the proceeds from the Offering will be used for the acquisition, exploration or development of other properties without obtaining (if required under the rules and regulations of the Exchange) the prior consent of the Exchange and filing, where necessary, engineering reports acceptable to the Exchange.

There are no provisions or arrangements for holding any part of the net proceeds received from the sale of the securities in trust or subject to the fulfillment of any conditions.

In the event of any material change in the affairs of the Issuer during the distribution of the Shares, an amendment to this Statement of Material Facts will be filed. Following completion of the distribution of the Shares offered by this Statement of Material Facts, shareholders will be notified of changes in the affairs of the Issuer in accordance with the requirements of the appropriate regulatory authorities.

Any monies received from the exercise of the Agent's Warrants will be used for the general corporate purposes of the Issuer.

3. MATERIAL NATURAL RESOURCE PROPERTIES

(A) Summary of Material Mining Properties

Group I — **Properties for which regulatory approval has been obtained under this Statement of Material Facts**

Group II — **Presently held properties which are currently producing or being explored, or upon which exploration is planned within the next year**

Group III — **Other presently held properties upon which the Issuer's acquisition and exploration costs to date exceed $100,000**

Group	Property Name	Issuer's Acquisition & Exploration Costs to Date (in $)	Shares Issued to Date	Planned Expenditure from Funds Available upon Completion of the Offering
I	N/A			
II	Texada Property	$1,624,123	60,000	$401,250
III	N/A			

Group I - Properties for which regulatory approval has been obtained under this Statement of Material Facts

The Issuer is not seeking regulatory approval under this Statement of Material Facts for any properties.

Group II - Presently held properties which are currently producing or being explored, or upon which exploration is planned within the next year

Texada Island Property

Pursuant to an Option Agreement dated June 30, 1986, the Issuer acquired from Cartier Resources Inc. and Marble Bay Holdings Ltd. (collectively the "Vendor") a 100% interest in and to a mineral lease covering various mineral properties located on Texada Island in the Nanaimo Mining Division of British Columbia, details of which are set out in the Engineering Report of Mr. Grant Hendrickson, P.Geoph., dated August 1991 (the "Hendrickson Report"), a copy of which is attached hereto and forms part of this

Statement of Material Facts (the "Texada Property"). In consideration therefor the Issuer expended a total of $425,000 as follows:

(a) cash payment of $25,000 and exploration and development expenditures on the Texada Property of no less than $150,000 on or before October 31, 1987, all of which were made; and

(b) further exploration and development expenditures on the Texada Property of no less than $250,000 on or before July 31, 1988, or equivalent cash payments to the Vendor, all of which were made.

The Vendor retained a 2 1/2% net smelter royalty interest in the Texada Property, not to exceed $2,000,000, or the Vendor could have re-acquired a 20% interest in the Texada Property by paying to the Issuer an amount equal to the aggregate of all the Expenditures incurred to bring the property to production. However, the Issuer has since bought out this royalty by a two stage payment of $10,000 down and $20,000 to be paid on or before May 31, 1992.

The Texada Property is also subject to payment to Holnam West Materials Ltd. as follows:

(a) an amount not exceeding $200,000 due during the twenty month period commencing on the second anniversary of commencement of production; and

(b) a 6% net profits interest, to be no less than $10,000 per annum.

Location and Access

The Texada Property lies between the villages of Vananda and Gillies Bay on Northern Texada Island, approximately 80 kilometers northwest of Vancouver, B.C., and covers approximately 6,000 acres. Access is by highway and ferry to Powell River and thereafter by ferry to Blubber Bay at the north end of the Island. Light aircraft can land at the airport near Gillies Bay. Numerous public and private roads provide ready access to most of the Texada Property.

Summary on Texada Property

The following was extracted from the Texada Report.

Since the Issuer's inception in 1987, it has spent or caused to be spent approximately $2,000,000 in direct exploration expenses on the Texada Property. Of this amount,

Freeport-McMoRan Gold Co. ("Freeport") spent $1,400,000 during their two year option period in 1988 and 1989. Freeport subsequently shut down its Canadian operations as part of the consolidation of its mineral exploration operations. The work was mainly focused on the Vananda Camp in the northern section and areas surrounding the Texada Iron Mine in the southern sector. To date, 34 diamond drill holes totalling 9,000 metres have been drilled, with soil sampling, airborne geophysics, ground magnetics, VLF, induced polarization and geological mapping completed on 80% of the land package.

During 1991, the Issuer spent $200,000 on diamond drilling and induced polarization ("IP"). At the Little Billie Mine area in the Vananda Camp, five holes totalling 1,300 metres were drilled to extend and confirm the mineral inventory outlined by the mine in 1951, and by Freeport in 1989. In addition, 10 km. of induced polarization was re-surveyed on the Little Billie Grid and 4.5 km. of new data was collected over the LaFarge Quarry, southeast of the Little Billie grid. In the southern area, 29.5 km. of induced polarization was completed on the Eagle Grid and detailed follow-up induced polarization was completed on the Sandy Grid.

Diamond drilling in 1991 at the Little Billie Mine located copper, gold skarn mineralization with significantly higher grades than the resource previously estimated in 1990 which graded 0.21 ounces gold per ton, 0.82 ounces silver per ton and 1.3% copper. The 1991 gradient array IP surveys appeared to correlate with the known copper, gold skarns. As such, the chargeability anomaly indicates a possible 500 metre strike extension of this mineralization. A gradient array depth profile on Line 5 also shows the chargeability anomaly to be steeply dipping, coincident to a resistivity low and flanking a resistivity and magnetic high indicative of the Little Billie quartz diorite.

A 1,000 meter by 600 meter chargeability anomaly on the Eagle Grid follows a north trending diorite body with chalcopyrite-bearing skarn along its western contact. The anomaly is in part on strike to the north of copper ore that was mined underground along the flat lying, volcanic-marble contact on the northern extension of the Texada mine. North of this anomaly four smaller chargeability highs within areas of low magnetic relief suggest the presence of pyrite, sphalerite mantos and chimneys similar to the Quarry Manto, 800 meters west of the grid, that grades 0.23 opt gold and 10% zinc.

On the Sandy Grid, an IP chargeability anomaly with dimensions of 700 meters by 500 meters extends north from the Lake Deposit, a magnetite-pyrrhotite deposit, into an area of low magnetic relief more indicative of pyrite, calcopyrite mineralization. Near the northern end of this anomaly, pyrite mineralization at surface in the Lake Fault returned a gold assay of 1.123 ounces per ton in a 0.6 meter chip sample. DDH 89-26 intersected 2.2 meters of 0.302 opt gold in silicified pyrite, 100 meters vertically below this surface mineralization.

Exploration Program and Recommendations

The Hendrickson Report recommends a Phase I test of the IP anomalies on the Sandy and Eagle Grids, consisting of diamond drilling totalling 2,900 meters with additional geophysics for a total cost of $352,500. At the Little Billie Mine, 2,500 meters of drilling and 10 days of IP are required to test the strike extension of the known deposit, at a cost of $260,000.

The Issuer has commenced Phase I drilling on the Eagle and Little Billie Grids as well as detailed IP follow-up of IP anomalies on the Eagle, Sandy and Little Billie Grids. To date, 11 drill holes totalling 3,000 metres (10,000 feet) have been completed and the Issuer has spent approximately $250,000.

The drilling on the Eagle Grid has located sulphides coincident to the IP targets in four of the six drill holes, demonstrating the ability of the IP system to detect sulphide mineralization up to 400 metres below surface. Although the intersections contained uneconomic precious and/or base metal values, an intersection of pyritic, silicified basalt with gold values to .003 oz/ton Au, in DDH 92-41, reveals a potential gold-bearing host that could have significant economic potential.

Drilling of the IP targets in the Little Billie Mine area failed to locate the source for the IP anomalies. However, an altered dyke assayed 0.154 oz/ton Au over 2.6 metres indicating the presence of a gold-bearing system in close proximity to the drill hole. Assays are pending on similarly altered dykes in the remaining two drill holes.

Risk Factors

The securities offered hereby must be considered speculative due to the nature of the Issuer's business. In particular:

1. To the knowledge of the Issuer, the properties described above are without a known body of ore and any program conducted on the Properties with the proceeds from the Offering would be an exploratory search for ore.

2. If the Issuer's exploration programs are successful in establishing ore of commercial tonnage and grade, additional funds will be required for the development of the ore body and to place it in commercial production. One source of future funds presently available to the Issuer is through the sale of equity capital. Another alternative for the financing of further exploration would be the offering by the Issuer of an interest in the Property to be earned by another party or parties carrying out further exploration or development thereof.

3. Resource exploration and development is a speculative business and involves a high degree of risk. The marketability of natural resources which may be acquired or discovered by the Issuer will be affected by numerous factors beyond the control of the Issuer. These factors include market fluctuations, the proximity and capacity of natural resource markets and processing equipment, government regulations, including regulations relating to prices, taxes, royalties,land tenure, land use, importing and exporting of minerals and environmental protection. The exact effect of these factors cannot be accurately predicted, but the combination of these factors may result in the Issuer not receiving an adequate return on invested capital.

4. Mining operations generally involve a high degree of risk. Hazards such as unusual or unexpected formations and other conditions are involved. The Issuer may become subject to liability for pollution, cave-ins or hazards against which it cannot insure or against which it may elect not to insure. The payment of such liabilities may have a material, adverse affect on the Issuer's financial position.

5. While the Issuer has obtained the usual standard title report with respect to properties in which it has an interest, this should not be construed as a guarantee of title. The properties may be subject to prior unregistered agreements or transfers or native land claims, and title may be affected by undetected defects.

6. Some of the Directors of the Issuer serve as directors of other public companies and, to the extent that such other companies may participate in ventures in which the Issuer may participate, the Directors of the Issuer may have a conflict of interest in such participation. From time to time, several companies may participate in the acquisition, exploration and development of natural resource properties thereby allowing for their participation in larger programs, permitting involvement in a greater number of programs and reducing financial exposure in respect of any program. It may also occur that a particular company will assign all or a portion of its interest in a particular program to another of these companies due to the financial position of the company making the assignment.

In accordance with the laws of British Columbia, the Directors of the Issuer are required to act honestly, in good faith and in the best interests of the Issuer. In determining whether or not the Issuer will participate in a particular program and the interest therein to be acquired by it, the Directors will primarily consider the degree of risk to which the Issuer may be exposed and its financial position at the time.

Group III - Other presently held properties upon which the Issuer's acquisition and exploration costs to date exceed $100,000

Other than as disclosed in Group II above, there are no properties presently held by the Issuer upon which the acquisition and exploration costs to date exceed $100,000.

4. PARTICULARS OF NON-RESOURCE ASSETS

The Issuer does not own any interests in non-resource assets.

5. CORPORATE INFORMATION

The Issuer was incorporated on April 18, 1986 by Memorandum and Articles under the Company Act of British Columbia.

By Special Resolution passed November 17, 1988, the Issuer increased its authorized capital shares from 10,000,000 common shares to 100,000,000 common shares without par value, of which 5,854,878 common shares are issued and outstanding as fully paid and non-assessable as of May 12,

1992. After taking into account the issuance of a total of 900,000 shares which are the subject of this Offering there will be 6,754,878 common shares issued and outstanding.

All the Issuer's shares, including those offered by this Statement, are common shares. They are not subject to any future call or assessment and they all have equal voting rights. There are no special rights or restrictions of any nature attached to any of the shares and they all rank pari passu, each with the other, as to all benefits that might accrue to the holder thereof.

Since December 31, 1991, being the date of the Issuer's unaudited financial statements, a copy of which is attached to and forms a part of this Statement of Material Facts, the Issuer has issued the following shares:

(a) 600,000 common shares at $0.70 per share pursuant to the private placement disclosed in Item 8(C) herein;

(b) 40,350 at a deemed price of $0.75 per share pursuant to Fiscal Agency Agreement.

The Issuer's audited financial statements for the year ending March 31, 1991 are also attached to and for a part of this Statement of Material Facts.

6. DIRECTORS, OFFICERS, PROMOTERS AND PERSONS HOLDING MORE THAN 10% OF THE ISSUED EQUITY SHARES

The following information about each director, officer and promoter of the Issuer is as at April 30, 1992:

Name, Address and Position	Chief Occupation	Number of Shares
STANLEY L. BEALE * 4497 Belmont Avenue Vancouver, B.C. V6R 1C3 **PRESIDENT AND DIRECTOR**	Prospector and Businessman in the mining business since 1983.	406,750 free-trading
NEIL MAEDEL Suite 902 2190 Bellevue Avenue West Vancouver, B.C. V7V 1C4 **VICE-PRESIDENT, PUBLIC RELATIONS**	Editorial writer with the Vancouver StockWatch.	92,500 free-trading

GARTH ALBRIGHT 4397 Cheviot Road North Vancouver, B.C. V7B 3T3 **SECRETARY/TREASURER**	Certified Management Accountant, Cominco Engineering Services Ltd.	122,500 free-trading
MICHAEL RYAN * 1245 Oxford Victoria, B.C. V8V 2V6 **DIRECTOR**	Prospector and Management Consultant.	338,750 free-trading
DAVID WATKINS 54 Palomino Crescent Toronto, Ontario M2K 1W3 **DIRECTOR**	Geologist; President of Minnova Inc.	121,000 free-trading
WILLIAM S. BEALE * 5775 Toronto Road Vancouver, B.C. V6T 1X4 **DIRECTOR**	Retired since 1983; President and Director of Ideal Cement Company (B.C.) Ltd.; Consultant to North American and international mining companies.	19,501 free-trading

* Member of Audit Committee.

Mr. David Watkins, a Director of the Issuer, is currently a director, officer or promoter of three other reporting companies.

A list of the names of companies which the directors and officers of the Issuer are directors and officers is available for inspection at Suite 700, 625 Howe Street, Vancouver, British Columbia during the primary distribution of the securities offered hereby and for a thirty day period thereafter.

None of the Directors, Officers or current promoters of the Issuer are, or have been within the past three years, a director, officer or promoter of any other reporting company whose securities were, during the period he was a director, officer or promoter of the company, struck off the Register of Companies by the British Columbia Registrar of Companies, or other similar authority, or whose securities were the subject of a cease trade or suspension order for a period of more than 30 consecutive days.

The directors and officers of the Issuer are also the promoters of the Issuer. There has been no remuneration or other consideration paid to the directors, officers or promoters during the past year other than as disclosed elsewhere in this Statement of Material Facts.

To the knowledge of the Issuer's directors, only the following persons (excluding directors, officers and promoters of the Issuer) beneficially own, directly or indirectly, more than 10% of the equity shares of the Issuer:

Name and Address	No. of Shares	Percentage
West Canada Depository Trust Company P.O. Box 10338 609 Granville Street Vancouver, B.C. V7Y 1J9	3,285,754*	56.12%
Cede & Co. P.O. Box 20 Bowling Green Station New York, N.Y. 10274	597,055 *	10.20%

* Of record only. The directors of the Issuer are unaware of the beneficial owners of these shares.

7. OPTIONS TO PURCHASE SECURITIES OF THE ISSUER

Since the year ended March 31, 1991, the following Directors and/or Employees of the Issuer were granted incentive stock options to purchase shares of the Issuer:

Optionee	Type of Option	Number of Shares	Exercise Price	Expiry Date
Mary Anne Walsh	Employee	145,000	$0.32	Feb.12/93
Garth Albright	Employee	148,000	$0.54	Mar.26/93
Debbie Findlay	Employee	60,000	$0.51	Mar.21/93
Neil Maedel	Employee	200,000	$0.57	May 16/93
Michael Ryan	Director	230,000	$0.83	July 14/93
William S. Beale	Director	70,600	$0.81	Nov.25/93
Philip Penner*	Employee	100,000	$0.84	Jan.8/94
Stanley Beale	Director	250,000	$0.87	Jan/29/94

* Philip Penner's employment with the Issuer ended on March 16, 1992.

Of the outstanding options of the Issuer, the following were exercised since the year ended March 31, 1991:

Optionee	Number of Shares	Date of Exercise
Mary Anne Walsh	145,000	July 15/91
William S. Beale	60,000	June 4/91
Garth Albright	148,000	May 16/91
Debbie Findlay	60,000	May 16/91
Michael Ryan	50,000	Dec. 11/91
Neil Maedel	40,000	Dec. 11/91

Granting of the above stock options were approved by the shareholders of the Issuer at its Annual General Meeting held on September 9, 1991.

Other than disclosed herein, there are no treasury shares or other securities of the Issuer which are now the subject of any transaction, sale or option agreement or of any proposed transaction, sale or option agreement.

8. SECURITIES OF THE ISSUER HELD IN ESCROW, IN POOL OR SUBJECT TO HOLD RESTRICTIONS

A. Pooled Shares

There are no shares of the Issuer held in pool.

B. Escrowed Shares

There are no shares of the Issuer held in escrow.

C. Private Placement Shares

Pursuant to the terms and conditions of Flow-Through and Non Flow-Through Private Placement Agreements dated November 26, 1991, a total of 600,000 common shares, together with any shares to be issued on exercise of warrants to purchase a further 600,000 common shares, are to be held by the placees until November 25, 1992. These private placement shares and warrants are to be held only if not sold under this Statement of Material Facts pursuant to the Shareholder Offering disclosed in Item 1(C) herein.

9. PARTICULARS OF ANY OTHER MATERIAL FACTS

9.1 There are no actual or pending material legal proceedings to which the Issuer is or is likely to be a party or of which any of its property is or is likely to be the subject.

9.2 The Issuer is seeking regulatory approval to the following material transactions, other than as disclosed in this Statement of Material Facts:

(a) The Issuer entered into a Management Agreement dated January 1, 1992 with Stanley L. Beale, President of the Issuer, whereby the Issuer agreed to pay Mr. Beale $3,500 per month in consideration for management services provided to the Issuer by him.

(b) The Issuer has entered into a Private Placement Agreement dated February 28, 1992 pursuant to which the placee has subscribed for a total of 400,000 Units, each Unit consisting of one common share and one non-transferable share purchase warrant, at a price of $0.65 per Unit. The warrants will entitle the holder to purchase up to an additional 400,000 common shares, exercisable for a period of two (2) years at a price of $0.80 per share in the first year and $0.90 per share in the second year. The shares and warrants are to be held by the placee until February 28, 1993. The Issuer has agreed to use its best efforts to qualify these shares and any shares issued on exercise of the warrants for resale. Upon completion of this private placement, the Issuer shall amend this Statement accordingly.

9.3 There are no bonds, debentures, notes or other debt obligations outstanding.

9.4 The Issuer's liabilities have not significantly increased or altered subsequent to the date of the financial statements included in this Statement of Material Facts.

9.5 To the best of the knowledge of the Directors of the Issuer, there are no other material facts not previously disclosed herein.

Inspection of Documents

The material contracts described herein may be inspected at at the offices of Maitland & Company, Barristers and Solicitors, Suite 700, 625 Howe Street, Vancouver, British

Columbia, during normal business hours, during the primary distribution of the shares hereby and for 30 days after completion of primary distribution.

The solicitor responsible for the preparation of this Statement of Material Facts, nor any of the partners of the responsible solicitor's firm, are directors or officers of the Issuer and, together, they do not have a material beneficial interest, direct or indirect, in any securities or in the properties of the Issuer other than Mr. David G. Ashby, the solicitor responsible for the preparation of the Statement of Material Facts, who owns 10,000 common shares in the capital stock of the Issuer and is a shareholder participating in the Shareholder Offering disclosed in Item 1(C) herein.

10. STATUTORY RIGHTS OF RESCISSION

The British Columbia Securities Act provides purchasers with the right to rescind a contract for the purchase of securities where the Statement of Material Facts and any existing amendments thereto either contain a misrepresentation or are not delivered to the purchaser before delivery of the written confirmation of sale. For further information concerning these rights, and the time limits within which they must be exercised, refer to Sections 66, 114 and 118 of the Securities Act or consult a lawyer.

VANANDA GOLD LTD.

Balance Sheet
December 31, 1991

ASSETS

	December 31 1991	December 31 1990
CURRENT		
Cash	$177,031	$1,443
Prepaid expenses	-	-
Deposit	3,750	1,250
Share Subscription Receivable	23,597	-
Accounts Receivable	7,529	-
	211,907	2,693
MINERAL PROPERTY (Note 4)	-	40,000
DEFERRED COSTS (Note 3)	1,353,398	825,449
	$1,565,305	$868,142

LIABILITIES AND SHAREHOLDERS' EQUITY

CURRENT LIABILITIES		
Accounts payable and accrued liabilities	$46,476	$40,852
Due to Director	39,700	8,652
Advance deposits on Private Placements	237,220	-
	323,396	49,504
CAPITAL STOCK (NOTE 5)	1,340,909	818,638
DEFICIT, per accompanying statement	(99,000)	-
	1,241,909	868,142
	$1,565,305	$917,646

See accompanying notes to Financial Statements.

VANANDA GOLD LTD.

Statement of Loss and Deficit
For the Period Ending December 31, 1991

	December 31 1991	December 31 1990
DEFICIT, BEGINNING OF YEAR	$90,000	-
NET LOSS FOR THE PERIOD	9,000	-
DEFICIT, END OF THE PERIOD	$99,000	-

VANANDA GOLD LTD.

Schedule of Deferred Costs
For the Period Ending December 31, 1991

	December 31 1991	December 31 1990
EXPLORATION AND DEVELOPMENT		
Consulting	$38,739	$575
Engineering	5,274	-
Prospecting and surveying	34,345	96,570
Travel and transportation	22,862	615
Equipment	1,505	-
Field Supervision	24,400	500
Miscellaneous	7,424	93
	134,549	98,353
ADMINISTRATION		
Office and general	53,404	15,232
Legal and audit	17,066	6,629
Filing and Transfer Agent Costs	14,103	2,217
Management fee (note 7)	19,500	18,000
Promotion, Travel and Shareholders Mailings	174,011	36,655
Miscellaneous	2,986	-
	281,070	78,733
DEFERRED COSTS FOR THE YEAR	415,619	177,086
Deduct: Interest income	983	-
	414,636	177,086
TOTAL DEFERRED COSTS, BEGINNING OF YEAR	938,762	648,363
TOTAL DEFERRED COSTS, END OF PERIOD	$1,353,398	$825,449

See accompanying notes to Financial Statements.

VANANDA GOLD LTD.

Statement of Changes in Financial Position
For the Period Ending December 31, 1991

	December 31 1991	December 31 1990
CASH PROVIDED BY (USED FOR)		
INVESTING ACTIVITIES		
Mineral property acquisition	($54,000)	($40,000)
Prepaid expenses	-	23,630
Share Subscription receivable	(23,597)	-
Accounts Receivable	1,077	-
Deferred Costs	(414,636)	(177,086)
Accounts payable and accrued liabilities	(19,575)	27,993
	(510,731)	(165,463)
FINANCING ACTIVITIES		
Advance deposits on Private Placement	237,220	-
Repayment of Shareholders Advances	(22,034)	(2,926)
Issue of capital stock for cash	353,021	112,500
Issue of capital stock for mineral property	39,000	40,000
Sale of Mineral Property	45,000	-
	652,207	149,574
INCREASE (DECREASE) IN CASH DURING THE PERIOD	141,476	(15,889)
CASH, BEGINNING OF THE YEAR	35,555	17,332
CASH, END OF THE PERIOD	$177,031	$1,443
CASH REPRESENTED BY:		
Cash	$177,031	$1,443
Term Deposit	-	-
	$177,031	$1,443

See accompanying notes to Financial Statements.

VANANDA GOLD LTD.

Notes to Financial Statements
December 31, 1991

1. INCORPORATION:

Vananda Gold Ltd. was incorporated on April 18, 1986, pursuant to the Company Act of British Columbia.

2. NATURE OF OPERATIONS:

The Company is in the process of exploring and developing its mineral property but, on the basis of information to date, has not yet determined whether this property contains ore reserves that are economically recoverable. The recoverablility of the amounts shown for mineral property and related deferred costs is entirely dependent on the existence of economically recoverable reserves, the ability of the Company to obtain the necessary financing to complete development and upon future profitable production.

3. SIGNIFICANT ACCOUNTING POLICIES:

Deferred Costs

Exploration and development costs, including administrative costs relating to the mineral property are deferred until such time as the mineral property is brought into production, abandoned or sold, at which they are amortized on the unit-of-production basis or written off.

OPTION PAYMENTS

Transactions pursuant to the terms of option agreements are exercisable entirely at the discretion of the optionee. Accordingly related amounts are not recorded as a purchase or sale until such time as the option payments are made.

VANANDA GOLD LTD.

Notes to Financial Statements
December 31, 1991

4. MINERAL PROPERTY:

PROPERTY	EXPENDITURES	DISPOSITION/ WRITE-DOWN	BALANCE
Nanaimo Mining Division,			
Texada Island			
Acquisition	$25,000	-	$25,000
Less recoveries	(60,032)	-	(60,032)
Exploration and development	551,366	-	551,366
Deferred Administrationn	831,977	-	831,977
	1,348,311	-	1,348,311

a) Texada Island - Nanaimo Mining Division, B.C.

Under an option agreement dated June 30,1986, the Company was granted the right to acquire up to a 100% interest in a mineral lease (the lease) covering various mineral properties located on Texada Island in the Nanaimo Mining Division of British Columbia. The option agreement requires aggregate expenditures of $425,000 due as follows:

1) a cash payment of $25,000 and exploration and development expenditures on the property of no less than $150,000 on or before October 31, 1987, all of which were made; and

2) further exploration and development expenditures on the property of no less than $250,000 on or before July 31, 1988, or equivalent cash payments to the vendor, all of which are made.

The vendor has retained a 2 1/2% royalty interest in the lease based on net smelter returns, not to exceed $2,000,000. Alternatively, the vendor may reacquire up to 20% interest in the lease by making prescribed payments to the Company.

4. MINERAL PROPERTY (CONT'D)

The lease is also subject to payment to the original lessor as follows:

1) an amount not exceeding $200,000 due during the twenty month period commencing on the second anniversary of commencement of production; and

2) a 6% net profits interest, to be no less than $10,000 per annum.

At September 30, 1991 the Company has earned a 100% interest in the lease.

b) Eagle Claims - Nanaimo Mining Division, B.C.

By an agreement dated April 5, 1991, the Company acquired the Eagle Mineral Claims located in the Nanaimo Mining Division of B.C. and paid $15,000 and issued 60,000 shares of the Company's capital stock at a deemed value of $0.65 per share to the vendors of the claims. The Eagle claims were sold for $45,000 in May, 1991. The net loss on disposition has been written off to deficit.

5. CAPITAL STOCK:

Authorized 100,000,000 common shares without par value:

Issued share capital comprises the following:

	Shares	Amounts
Balance March 31, 1991	4,133,878	$948,888
Issued during Nine Months Ending December 31, 1991		
-For mineral property	60,000	39,000
-Exercise warrants	517,650	112,001
-Exercise of options	503,000	241,020
	5,214,528	$1,340,909

5. CAPITAL STOCK (CONT'D)

Issued Shares:

The Company issued 60,000 shares to acquire the Eagle claims mineral property at a deemed value of $0.65 per share.

Stock Options were exercised as follows:

148,000 shares @ $0.43
60,000 shares @ $0.51
60,000 shares @ $0.33
145,000 shares @ $0.32
40,000 shares @ $0.57
50,000 shares @ $0.83

Warrents were exercised as follows:

400,000 shares @ $0.18
117,650 shares @ $0.34

The Company has reserved 340,000 shares for the exercising of options as follows:

Directors
- 180,000 shares exercisable at $0.83 per share expiring July 25, 1993.

Employees
- 160,000 shares exercisable at $0.57 per share expiring May 16, 1993.

The Company received advance deposits on a Private Placement Share offerring of 600,000 shares @ $0.70 per share. The shares were issued on January 31, 1992.

6. INCOME TAXES

The Company has made certain resource related expenditures for which no future tax benefits have been recognized in the financial statements. No tax benefits are available to the Company on resource related expenditures financed by issue of Flow through shares, totalling $251,265.

7. RELATED PARTY TRANSACTIONS:

During the first nine months of the year, to December 31, 1991, the Company incurred $17,500 as Management Fee expense to a Director of the Company and a further $28,400 for exploration site supervision and management services to a second Director.

The amount of $34,700 due to a Director is unsecured, non interest bearing and has no fixed terms of repayment.

8. LEASE COMMITMENTS:

The Company is required to make equipment rental payments under operating leases in the amount of $3,040 during the year ending March 31,1992.

BISHOP & WALLACE

CHARTERED ACCOUNTANTS

A Partnership of Professional Corporations

602 - 5811 Cooney Road
Richmond, BC V6X 3M1
(604) 273-1477
FAX (604) 273-0434

AUDITORS' REPORT

To the Directors of **Vananda Gold Ltd.**:

We have audited the balance sheet of **Vananda Gold Ltd.** as at March 31, 1991 and the statement of loss and deficit and changes in financial position for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Company as at March 31, 1991 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.

Bishop & Wallace

Richmond, B.C.
August 6, 1991

Chartered Accountants

VANANDA GOLD LTD.
Balance Sheet
March 31, 1991

	1991	1990
Assets		
CURRENT		
Cash	$ 35,585	17,332
Prepaid expenses	-	23,630
Deposits	3,760	1,250
GST receivable	8,506	-
	47,911	42,212
MINERAL PROPERTIES AND RELATED DEFERRED COSTS (Notes 2 and 3) (Schedule)	938,762	648,363
	$ 986,673	690,575
Liabilities and Shareholders' Equity		
CURRENT		
Accounts payable and accrued liabilities	$ 66,051	12,859
Due to Director (Note 6)	61,734	11,578
	127,785	24,437
CAPITAL STOCK (Note 4)	948,888	666,138
DEFICIT, per accompanying statement	(90,000)	-
	858,888	666,138
	$ 986,673	690,575

COMMITMENTS (Notes 3 and 7)
SUBSEQUENT EVENTS (Notes 3, 4 and 8)

On behalf of the Board:

Director

Director

See accompanying notes to financial statements.

BISHOP & WALLACE
CHARTERED ACCOUNTANTS

VANANDA GOLD LTD.

Statement of Loss and Deficit
For the Year Ended March 31, 1991

	1991	1990
MINERAL PROPERTIES WRITTEN-OFF (Note 3)	$ 90,000	-
NET LOSS FOR THE YEAR	90,000	-
DEFICIT, BEGINNING OF YEAR	-	-
DEFICIT, END OF YEAR	$ 90,000	-

See accompanying notes to financial statements.

VANANDA GOLD LTD.

Statement of Changes in Financial Position
For the Year Ended March 31, 1991

	1991	1990
CASH PROVIDED BY (USED FOR):		
OPERATING ACTIVITIES		
Net loss for the year	$ (90,000)	-
Add item not requiring cash:		
Mineral properties written-off	90,000	-
	-	-
INVESTING ACTIVITIES		
Mineral property acquisition	$ (95,000)	(90)
Prepaid expenses	23,630	(23,630)
Subscription receivable	-	11,000
Damage deposits	(2,500)	(1,250)
GST receivable	(8,606)	-
Mineral property payments received	-	50,000
Deferred costs	(285,399)	(162,254)
Accounts payable and accrued liabilities	53,192	(4,088)
	(314,683)	(130,312)
FINANCING ACTIVITIES		
Advances from a Director	50,156	11,578
Issue of capital stock for debt	22,500	-
Issue of capital stock for cash	170,250	137,250
Issue of capital stock for mineral properties	90,000	-
	332,906	148,828
INCREASE IN CASH DURING THE YEAR	18,223	18,516
CASH (OVERDRAFT), BEGINNING OF YEAR	17,332	(1,184)
CASH, END OF YEAR	$ 35,555	17,332

See accompanying notes to financial statements.

VANANDA GOLD LTD.

Schedule of Mineral Properties and Related Deferred Costs
For the Year Ended March 31, 1991

	1991	1990
EXPLORATION AND DEVELOPMENT		
Acquisition	$ 95,000	25,000
Consulting	2,365	15,171
Engineering	5,509	390
Prospecting and surveying	100,119	406
Travel and transportation	8,579	3,947
Equipment	1,746	1,357
Field supervision	16,727	-
Miscellaneous	3,730	564
	233,775	46,835
Less recoveries	-	(60,032)
	233,775	(13,197)
ADMINISTRATION		
Office and general	26,863	34,714
Filing and transfer agent fees	12,172	12,346
Legal and audit	21,001	16,951
Management fee (Note 6)	24,000	24,000
Promotion	58,563	47,639
Travel and auto	2,574	5,378
Miscellaneous	1,484	661
	146,657	141,689
DEFERRED COSTS FOR THE YEAR	380,432	128,492
Less: Interest income	(33)	(1,270)
	380,399	127,222
TOTAL DEFERRED COSTS, BEGINNING OF YEAR	648,363	521,141
MINERAL PROPERTIES WRITTEN-OFF (Note 3)	(90,000)	-
TOTAL DEFERRED COSTS, END OF YEAR	$ 938,762	648,363

See accompanying notes to financial statements.

1. NATURE OF OPERATIONS:

The Company is in the process of exploring and developing its mineral property but, on the basis of information to date, has not yet determined whether this property contains ore reserves that are economically recoverable. The recoverability of the amount shown for deferred costs is entirely dependent on the existence of economically recoverable reserves, the ability of the Company to obtain the necessary financing to complete development, and upon future profitable production.

2. SIGNIFICANT ACCOUNTING POLICIES:

Deferred Costs

Exploration and development costs, including administrative costs, relating to the mineral property are deferred until such time as the mineral property is brought into production, abandoned or sold, at which time they are amortized on the unit-of-production basis or written-off.

Option Payments

Transactions pursuant to the terms of option agreements are exercisable entirely at the discretion of the optionee. Accordingly, related amounts are not recorded as a purchase or sale until such time as the option payments are made.

3. MINERAL PROPERTY:

	Expenditures	Write-down	Balance
Nanaimo Mining Division, B.C.			
Texada Island			
Acquisition	$ 25,000	-	25,000
Less recoveries	(60,032)	-	(60,032)
Exploration and development	417,800	-	417,800
Deferred Administration	550,994	-	550,994
	933,762	-	933,762
Trail Creek Mining Division, B.C.			
Jewel claims			
Acquisition	40,000	(40,000)	-
	40,000	(40,000)	-
Nelson Mining Division, B.C.			
Kit claims			
Acquisition	50,000	(50,000)	-
	50,000	(50,000)	-
Nanaimo Mining Division, B.C.			
Eagle claims			
Acquisition	5,000	-	5,000
	5,000	-	5,000
	$ 1,028,762	(90,000)	936,762

3. MINERAL PROPERTY (CONT'D):

a) Texada Island - Nanaimo Mining Division, B.C.

Under an option agreement the Company was granted the right to acquire up to a 100% interest in a mineral lease (the lease) covering various mineral properties located on Texada Island in the Nanaimo Mining Division of British Columbia. The option agreement required aggregate expenditures of $ 425,000 due as follows:

1) a cash payment of $ 25,000 and exploration and development expenditures on the property of no less than $ 150,000 on or before October 31, 1987, all of which were made; and

2) further exploration and development expenditures on the property of no less than $ 250,000 on or before July 31, 1988, or equivalent cash payments to the vendor, all of which are made.

The vendor has retained a 2 1/2% royalty interest in the lease based on net smelter returns, not to exceed $ 2,000,000. Alternatively, the vendor may reacquire up to 20% interest in the lease by making prescribed payments to the Company.

The lease is also subject to payment to the original lessor as follows:

1) an amount not exceeding $ 200,000 due during the twenty month period commencing on the second anniversary of commencement of production; and

2) a 6% net profits interest, to be no less than $ 10,000 per annum.

At March 31, 1991 the Company has earned a 100% interest in this mineral lease.

b) Jewel Claims - Trail Creek Mining Division, B.C.

By an agreement dated January 30, 1990, the Company acquired an option to earn a 100% interest in 78 claims located in the Trail Creek Mining Division by issuing 100,000 shares of the Company's capital stock at a deemed value of $ 0.40 per share. During the year ended March 31, 1991 these claims were allowed to lapse and accordingly the Company has written off the related costs.

c) Kit Claims - Nelson Mining Division, B.C.

By an agreement dated July 4, 1990, the Company acquired an option to earn a 50% interest in three claims located in the Nelson Mining Division, B.C. by issuing 100,000 shares of the Company's capital stock at a deemed value $ 0.50 per share. During the year ended March 31, 1991 these claims were allowed to lapse and accordingly the Company has written off the related costs.

d) Eagle Claims - Nanaimo Mining Division, B.C.

By an agreement dated March 28, 1991, the Company signed a letter of intent to acquire the Eagle Mineral Claims located in the Nanaimo Mining Division of B.C. and paid a $ 5,000 non-refundable deposit to the vendors of these claims.

Subsequent to March 31, 1991, the Company acquired these claims by paying $ 10,000 and issuing 60,000 shares of the Company's capital stock at a deemed price of $ 0.80 per share to the vendors of the claims.

4. CAPITAL STOCK:

Authorized share capital consists of 100,000,000 common shares without par value.

Issued share capital comprises the following:

	Shares	$
Balance March 31, 1990	2,858,875	666,138
Issued during the year:		
For mineral properties	200,000	90,000
For cash pursuant to flow through agreements	750,000	112,500
For exercise of options	175,000	57,750
For debt	150,000	22,500
	1,275,000	282,750
	4,133,875	948,888

The shares issued for mineral property acquisitions were issued at deemed values ranging from $ 0.40 to $0.50 per share. The shares issued for the retirement of debt were issued at a deemed value of $ 0.15 per share.

The Company has reserved 430,000 common shares for the exercising of options as follows:

Directors
- 230,000 shares exercisable at $ 0.83 per share expiring July 25, 1993.

Employees
- 200,000 shares exercisable at $ 0.57 per share expiring May 16, 1993.

The Company has reserved 517,647 shares for the exercise of warrants which are exercisable within a two year period from date of issue at a conversion rate of one warrant for one share as follows:

	Year 1	Year 2
1) December, 1989 share issue, 400,000 warrants	$ 0.16	$ 0.19
2) March, 1990 share issue, 117,647 warrants	$ 0.34	$ 0.37

Subsequent to March 31, 1991 the Company issued the following shares:

	Shares	$
For exercise of options	413,000	191,240
For mineral properties (Note 9)	60,000	48,000
	473,000	221,760

The shares issued for mineral property acquisitions subsequent to March 31, 1991 were issued at a deemed price of $ 0.80 per share.

5. INCOME TAXES:

The Company has made certain resource related expenditures for which no future tax benefits have been recognized in the financial statements. No tax benefits are available to the Company on resource related expenditures financed by issue of flow-through shares, totalling $ 251,265.

6. RELATED PARTY TRANSACTIONS:

During the year ended March 31, 1991 the Company incurred $ 24,000 as management fee expense and $ 6,500 as field supervision expense to directors of the Company. The amount of $ 61,734 due to a director is unsecured, non-interest bearing and has no fixed terms of repayment.

7. LEASE COMMITMENTS:

The Company is required to make equipment rental payments under operating leases in the amount of $ 3,040 during the year ended March 31, 1992.

8. SUBSEQUENT EVENTS:

a) By an agreement dated April 15, 1991 the Company sold the Eagle mineral claims for $ 45,000.

b) The Company intends to offer 600,000 common shares to the public subsequent to March 31, 1991. The proceeds from this offering are estimated to be $ 465,000.

9. GOING CONCERN:

At March 31, 1991, the Company has a working capital deficiency of $ 79,124. The Company's ability to continue as a going concern is dependent upon its ability to obtain additional debt or equity financing.

TEXADA ISLAND MINERAL PROPERTY

Nanaimo Mining Division

N.T.S. 92F/10E, 15E

Latitude 49° 44' N
Longitude 124° 32' W

by

Grant A Hendrickson, P. Geoph.

for

Vananda Gold Ltd.

Vancouver, B.C. August 1991

SUMMARY

Vananda Gold Ltd., since its inception in 1987, has spent or caused to be spent ca. $2 million in direct exploration expenses on their 6,000 acre, Texada Island property. Of this amount, Freeport-McMoRan Gold Co. spent $1.4 million during their two year option period in 1988 and 1989. The work has mainly focused on the Vananda Camp in the northern section and areas surrounding the Texada Iron Mine in the southern sector. To date, 34 diamond drill holes totalling 9,000 metres (29,000 feet) have been drilled with soil sampling, airborne geophysics, ground magnetics, VLF, induced polarization and geological mapping completed on 80% of the land package.

During 1991, Vananda Gold spent $200,000 on diamond drilling and induced polarization. In the Vananda Camp, at the Little Billie Mine area, 5 holes, totalling 1,300 metres, were drilled to extend and confirm the mineral inventory outlined by the mine in 1951 and by Freeport in 1989. In addition, 10 km. of induced polarization was re-surveyed on the Little Billie Grid and 4.5 km. of new data was collected over the LaFarge Quarry, southeast of the Little Billie grid. In the southern area, 29.5 km. of induced polarization was completed on the Eagle Grid and detailed, follow-up induced polarization was done on the Sandy Grid.

As a result of 1991 drilling at the Little Billie Deposit, the 171,000 ton resource grading 0.21 ounces gold per ton, 0.82 ounces silver per ton and 1.3 % copper calculated in 1990, has been upgraded. Induced polarization anomalies trend southeast for 500 metres from the deposit, indicating potential for a significant increase in tonnage.

In the southern sector on the Eagle and Sandy Grids, induced polarization surveys located chargeability anomalies coincident to possible extensions of sulphide skarns from the Texada iron, copper deposit.

On the Eagle grid, a 1,000 metre by 600 metre chargeability anomaly follows a north trending diorite body with chalcopyrite-bearing skarn along its western contact. The anomaly is also, in part, on strike to the north of copper ore that was mined underground along the flat lying, volcanic-marble contact on the northern extension of the Texada Mine. North of this anomaly, four smaller chargeability highs within areas of low magnetic relief, suggest the presence of sulphide mantos and chimneys similar to the Quarry Manto, 800 metres west of the grid, that grades 0.23 opt gold. Ranging in strike length from 200 metres to 300 metres with possible thicknesses of ten to fifty metres, the mantos represent significant targets.

On the Sandy Grid, an IP chargeability anomaly with dimensions of 700 metres by 500 metres, extends north from the Lake Deposit, a magnetite-pyrrhotite deposit, into an area of low magnetic relief perhaps more indicative of pyrite, chalcopyrite mineralization. Near the northern end of this anomaly, pyrite mineralization at surface in the Lake Fault returned a gold assay of 1.123 ounces per ton in a 0.6 metre chip sample. DDH 89-26, intersected 2.2 metres of 0.302 opt gold in silicified pyrite, 100 metres vertically below this surface mineralization.

A Phase 1 test of the IP anomalies in the southern sector is recommended. Diamond drilling totalling 4,050 metres in conjunction with additional geophysics to fully delineate the targets, would cost approximately $360,000. At the Little Billie, 2,500 metres of drilling and 10 days of IP are required to test the strike extension of the known deposit. Cost for this work would be $200,000.

Assuming the anomalies are shown to have economic significance, Phase II drilling and geophysics would require 18,800 metres of diamond drilling costing $1,500,000.

TABLE OF CONTENTS

List of Tables:

List of Figures:

1.0 Introduction:

This report has been written with the assistance of C.N.Forster, F.G.A.C., who was the field manager responsible for Freeport-McMoRan Gold Company's work on the property and is now a geologist for Vananda Gold Ltd. The sections of the report describing the location, accessibility, climatic conditions of the property as well as the claim holdings, underlying agreements and the historical exploration and mining activities have been provided by Mr. Forster. Similar descriptions of the property are also published in an earlier Engineering Report by Peatfield, (Ph.D., P.Eng.) 1986. The geological and mineral deposit descriptions are also in part from Forster and Peatfield as well as from Ettlinger, (Ph.D., F.G.A.C.) 1990. Diamond drill results from the Little Billie and the assay data from the Paxton open pit were compiled by Forster. All of the above has been reviewed for accuracy and completeness.

The geophysical work in 1989 and 1991 was done by Delta Geoscience for Freeport-McMoRan Gold Co. and Vananda Gold Ltd., respectively. The descriptions of the geophysical surveys on the Eagle Grid, the Sandy Grid and the Little Billie areas are based on this work. The conclusions and recommendations of this report are the responsibility of G.A. Hendrickson based upon these geophysical studies and the geological work of C.N. Forster.

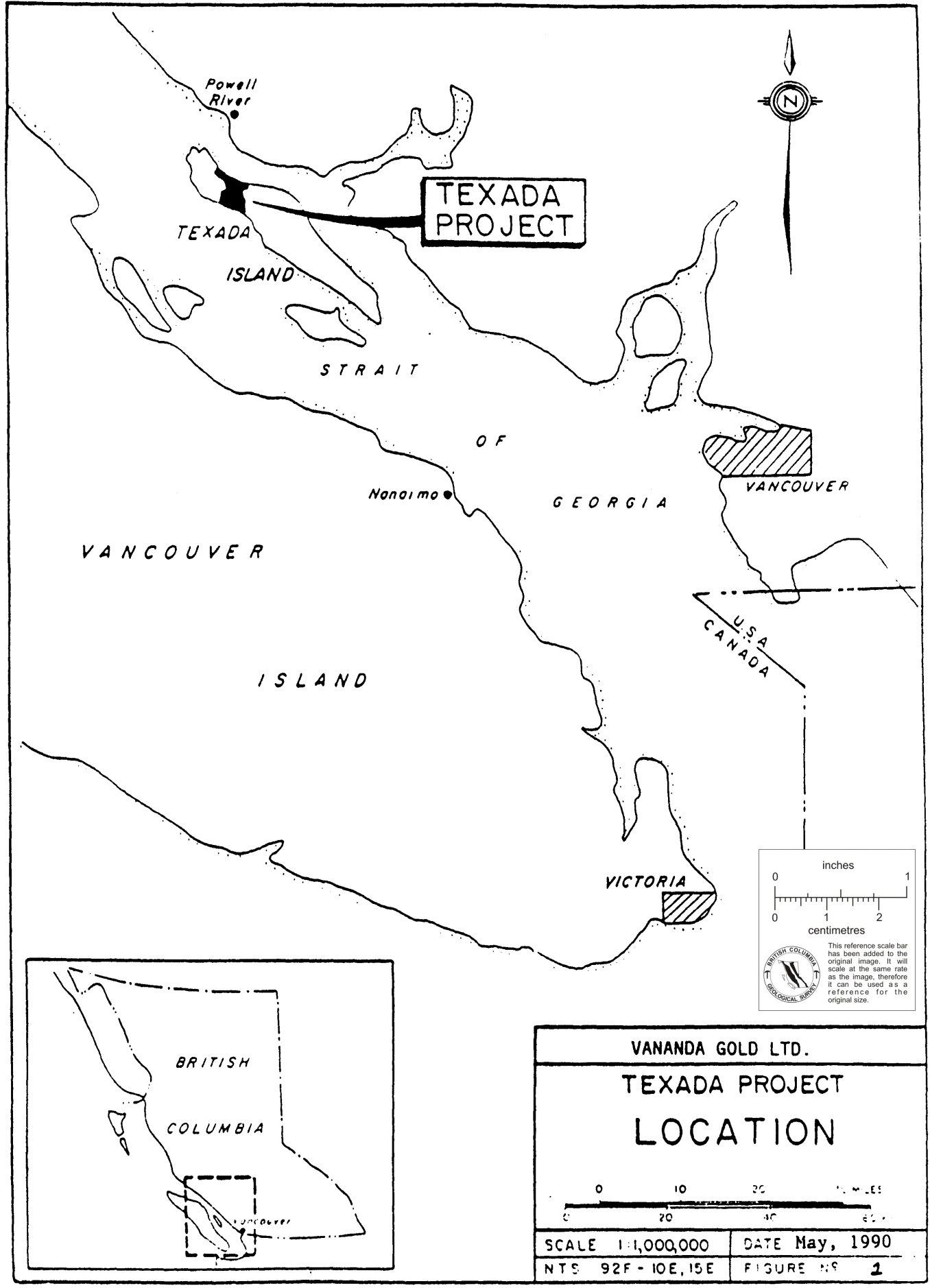
1.1 Location and Access:

The claim block is situated near the northern end of Texada Island, (Figure 1), encompassing the small town of Vananda (Pop. 700), 120 km northwest of Vancouver, B.C. Access to the island is by ferry from Powell River (Pop.14,000), or by scheduled air services into a 3,300 foot asphalt air strip near the town of Gilles Bay.

1.2 Accessibility, Climate, Local Resources:

Road access across the property is provided by paved road connecting Gillies Bay to Vananda and the Ferry terminal at Blubber Bay. From this road numerous secondary roads provide ready access to all portions of the claim block.

The northern half of the island has moderate topography with up to 500 feet


Powell River
TEXADA PROJECT
TEXADA ISLAND
STRAIT OF GEORGIA
Nanaimo
VANCOUVER
VANCOUVER ISLAND
U.S.A.
CANADA
VICTORIA
N
inches
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1
2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
BRITISH COLUMBIA
Vancouver
VANANDA GOLD LTD.
TEXADA PROJECT
LOCATION
0
10
20
SCALE 1:1,000,000
DATE May, 1990
NTS 92F - 10E, 15E
FIGURE No. 1

of relief on the claim block. Climate is cool and wet in the winter and warm and dry in summer. Snowfall and protracted cold weather are uncommon, hence year round exploration and development is possible. Yearly rainfall averages 30 inches.

The southwest portion of the claim block is actively quarried by Holnam West Materials ltd. (previously Ideal Cement Company Inc.), producing 2.9 million tons of limestone annually. The northeast corner of the claims encompass a large, dormant limestone quarry, owned by Lafarge Cement, with a small, chemical grade, limestone quarry operating immediately to the south and adjacent to the eastern boundary of the property. At the most northerly end of the island near the ferry terminal, the third operating quarry, owned by Ashgrove Cement Company, produces one million tons of limestone per annum.

Logging is an important secondary industry for the Island, with two small companies sharing the harvest. Both companies often provide heavy machinery and timber clearing services to the quarries and road and drill site preparation to the drilling contractors.

The island is well serviced with electric power as the main electrical transmission line between Vancouver Island and the mainland crosses Texada Island. The extension of the Transmountain Gas Pipeline across Texada Island to Powell River and Vancouver Island has recently been completed. The pipeline crosses the claim block from south of the Cornell mine to the east end of Priest Lake.

2.0 Claim Holdings:

Vananda Gold Ltd.'s land holdings include three mining leases, thirty-one crown granted mineral claims and eighty-nine located claim units and fractions (Appendix I), that are leased from the registered owners, Holnam West Material Ltd. The property also includes seven crown granted mineral claims, Eagle 1-7, purchased from Kargen Developments Ltd and Ileen Forward on April 15, 1991 and the two-unit Sandy Claim acquired from Johanson, Perry and Duker of Vananda through a claim swap. An independent appraisal by Vancouver law firm Lawson & Lundell of the Holnam properties, shows that all holdings are valid and encumbrance-free. Vananda Gold Ltd. has a 100% interest in all of the claims subject to underlying Net Profit and Net Smelter interests.

3.0 Mining History:

Texada Island has had a long and complex mining history, most of which involves mines located on the present Vananda Gold Ltd. property. The limestone operations are not considered here.

The property includes:

1. Four small past-producing gold/copper skarn deposits of the Vananda Camp, which includes the Marble Bay Mine, the Little Billie Mine, the Copper Queen Mine and the Cornell Mine.

2. Four open pit iron/copper skarn deposits referred to collectively as Texada Iron Mines. These include the Prescott, the Yellow Kidd, the Paxton and the Lake Deposits. in addition, there were at least four horizontal underground deposits mined beneath, and peripheral to the open pits.

3. Two limestone quarries, one of which has been shut down.

Table 1, from Peatfield, 1986, summarizes the production history of the individual deposits.

TABLE 1 - PRODUCTION HISTORY OF TEXADA ISLAND MINES

Mine	Period	Prod. (tons)	Au (oz)	Ag (oz)	Cu (M lbs)	Fe (MMt)
Cu Queen	1903-1917	4,500	1,660	12,500	398	
Cornell	1897-1917	44,500	16,600	77,400	3,016	
Little Billy	1896-1952	70,000	12,800	42,260	4,446	
Marble Bay	1899-1929	220,000	54,460	445,000	15,000	
Total Vananda Camp		339,250	85,520	577,160	22,860	
Texada Mines	1952-1976	23,000,000	31,300	833,900	58,900	11.5

PRODUCTION GRADES FOR TEXADA ISLAND MINES

Mine	Period	Prod. (ton)	Au (oz/ton)	Ag (oz/ton)	Cu (%)
Cu Queen	1903-1917	4,500	0.370	2.78	4.4
Cornell	1897-1917	44,750	0.37	1.73	3.4
Little Billy	1896-1952	70,000	0.18	0.60	1.3
Marble Bay	1899-1929	220,000	0.25	2.02	3.4
Average Vananda Camp		339,250	0.252	1.70	3.0
Texada Mines	1952-1976	23,000,000	0.001	0.036	0.14

Note: Production figures compiled by Peatfield, 1986.

4.0: Exploration History

Exploration and mining history on the island can be divided into several distinct episodes. Early work, prior to 1895, concentrated on the iron skarns, with some very small copper ore shipments from related occurrences. Between 1895 and 1919, most of the activity was on the gold-copper-silver skarn deposits of the Vananda Camp, which were developed and sustained production during this period. The final closure of these mines was related to the severe decline in copper prices following the First World War.

4.1 Early History:

After production ceased in the Vananda Camp in 1917 the Camp received only one exploration campaign prior to 1942. In 1929, A.W. Lakes directed a program of geological mapping and diamond drilled 25 holes in the Florence, Security and Cornell areas for the Central Copper and Gold Company.

Lakes concluded his lengthy report with a strong recommendation to continue work on the property, but this was not followed by the Central Copper and Gold Company because of the stock market crash in 1929 (Dolmage, 1944).

4.2 Middle History: 1942-1952

Exploration on the Little Billie Mine was revitalized in 1943 and by 1944 the three remaining Vananda mines were under the control of Industrial Metals Mining Co. Ltd. Through to 1944, IMMC de-watered the Little Billy and Copper Queen mines, rehabilitated both shafts, reconstructed the head frames, and diamond drilled 76 holes, totalling 7,700 feet from both surface and underground locations. (Dolmage, 1944; James, 1944, 1946; Stevenson, 1945).

In January, 1945, IMMC sold the properties to Vananda Mining Company (Stevenson, 1945). VMC deepened the Little Billie shaft from 280 feet to the present depth of 600 feet and drove cross-cuts at the 480 and 600 feet. In 1950 and 1951, VMC extended the 600 level drift south to the 720 level of the Copper Queen workings, where they drilled several underground holes.

At the close of operations in 1952, 17,500 tons of ore remained above the 600 foot level in the Little Billie, while drilling below the level had intersected significant copper and gold mineralization.

4.3 Recent History: 1976-1978

From 1955 to 1974, Ideal Cement acquired the crown grants and claims that comprise the Vananda Camp and in 1976 purchased the assets of Texada Mines.

In December, 1978 Shima Resources optioned the ground and undertook gravity, IP, VLF, and magnetic surveys covering most of the Vananda claims with 1000 foot spaced lines. Three targets based on coincident residual gravity, IP and magnetic anomalies were recommended for drilling (Ager & Berreta, 1979).

Six holes in 1979 and ten holes in 1980, tested the three targets; one east of the Little Billie, one immediately north of the Eagle Claims, and the third on the northern extension of the Lake Deposit. Only DDH 79-1, in the Little Billie area encountered significant mineralization:- 2 metres of 0.102 opt Au within 12 metres of 1.55% Cu, 0.052 opt Au and work was suspended.

In 1984, Cartier Resources acquired the lease from Shima and conducted IP surveys over the Cornell Mine and the Florence, Security zones. Nine holes were drilled near the Cornell Mine to locate the high-grade intercepts of Lakes, and the tenth hole was drilled to intercept the mineralization beneath the 600 Level in the Little Billie Mine. The nine holes at the Cornell were negative, and 84-10 at the Little Billie intersected 8.7 feet of 0.23 opt gold, 40 feet above the 600 level drift.

In 1986, Vananda Gold Ltd. was formed and optioned the lease from Cartier. Vananda Gold undertook extensive excavator stripping and soil geochemical surveys in the Florence-Security, Little Billie, Copper Queen and Cornell areas (Hardy 1988).

4.4 Freeport-McMoRan Gold Company; 1988 Work Program:

Freeport-McMoRan commenced work on the property in August, 1988. The program consisted of aerial photography; orthophoto mapping; airborne geophysics; reconnaissance and detailed geological mapping; 23 km of line cutting on the Sandy grid; rehabilitation of the 1984 Cartier grids (Cornell N & S grids); chip/channel sampling the Texada Mines' pits, drill core and coarse rejects from the underground workings; soil sampling and induced polarization on the Sandy and Cornell Grids; and seven NQ diamond drill holes totalling 2500 metres. Expenditures for the above work totalled approximately $600,000.

4.5 Freeport-McMoRan Gold Company: 1989 Work Program:

Freeport-McMoRan's work continued in 1989 with additional line cutting, soil sampling, geological mapping, geophysics, trenching and diamond drilling. This included 42 km of line cutting on the Eagle grid, 11 km on the Volunteer grid and 7 km on the Cornell grid. Magnetometer and VLF surveys were done on all grids, while soil sampling was done on the Eagle, Volunteer and Cornell grids. Twenty-two diamond drill holes were completed (89-8 to 89-29) totalling 5,216 metres.

Expenditures for the above totalled $800,000 for a grand total of $1,400,000.

4.6 Vananda Gold Ltd.: 1991 Work Program:

Vananda Gold's 1991 program commenced in February with five NQ diamond drill holes, totalling 1300 metres, in the Little Billie mine area.

In May, induced polarization was conducted over the Eagle grid, which had not previously been surveyed. Detailed follow-up IP, designed to improve the understanding of the depth and shape of the chargeability horizons, was done on Line 16 N of the Sandy grid, Line 7 and 15 N of the Eagle grid and Line 5 N of the Little Billie grid (Cornell N grid). Gradient array, induced polarization was also done over the LaFarge Quarry and re-done over the Little Billie grid.

Cost for the 1991 work to date is approximately $200,000, funded solely by Vananda Gold Ltd.

5.0: REGIONAL GEOLOGY

Texada Island is located along the eastern margin of the Insular tectonic belt and is interpreted to be underlain by rocks of Wrangellian affinity (Ettlinger and Ray, 1988; Bradford, 1989; Webster and Ray, 1990). Over 90% of the Island is underlain by an unknown thickness of undifferentiated Texada Formation basalts assigned to the middle to upper Triassic aged, Karmutsen Formation on Vancouver Island (Muller, 1977). Overlying these, principally in the northwestern quarter and the central areas of the island, are massive micritic, Marble Bay Formation limestones correlative to the upper Triassic Quatsino Formation on Vancouver Island (Muller, 1977). North of Gillies Bay, Cretaceous aged sandstones and shales of the Cedar District Formation unconformably overlie the Texada Volcanics.

Intrusive into the Texada and Marble Bay Formations are a suite of I-type, calc-alkaline intrusives (Webster and Ray, 1990) that are subdivided into seven distinct groups (Bradford, 1989). The largest is the Gillies stock, quartz monzonite in composition, with a U-Pb radiometric age of 178 Ma (Ettlinger and Ray, 1989). A smaller quartz diorite stock that outcrops along the coastline north of the Little Billie Mine and informally known as the Little Billie Stock has also been dated at 178 Ma (Ettlinger and Ray, 1989). Zircon from megacrystic hornblende diorite at the Cornell copper-gold mine yielded a near concordant minimum age of 175 Ma (Ettlinger, 1990).

Faulting on the island is dominated by major northwest striking, sinistral strike-slip faults (Glover, 1989; Bradford 1989). These are cut, and in part offset by, north-south and east-west faults that cut all stratigraphic and intrusive units.

Folding is broad and open with bedding in outcrop seldom exceeding 35 degrees. Centred on Vananda Gold's property is a broad, northerly plunging syncline with the main belt of limestones on the property forming its core. Adjacent to the granitic stocks, particularly in Texada Mine's Paxton Pit, tight folds around horizontal axial planes are indicative of plastic deformation in marbles above intrusive granitic stocks. On the northeastern coast line of Texada, Muller (1969) reports highly deformed carbonate beds.

6.0: PROPERTY GEOLOGY

The claims are 80% underlain by the Marble Bay limestones with the Texada basalts underlying the eastern and western margins of the property (Figure 2). Along the eastern boundary, the basalts dip shallow to moderately west under the limestones. On the western margin, the volcanics are in fault contact with the limestone.

The basalts are roughly divided into several units on the property that includes an upper amygdaloidal basalt overlying a one to three metre thick limestone bed that in turn overlies an unknown thickness of massive porphyritic basalt. A thick agglomeritic to brecciated unit with pillows appears to underlie the above in the Priest Lake area. South of the Texada mine area along the coast line, the basalts are series of intercalated pillow basalts, tuffaceous horizons and porphyritic basalts that dip shallowly to the northeast.

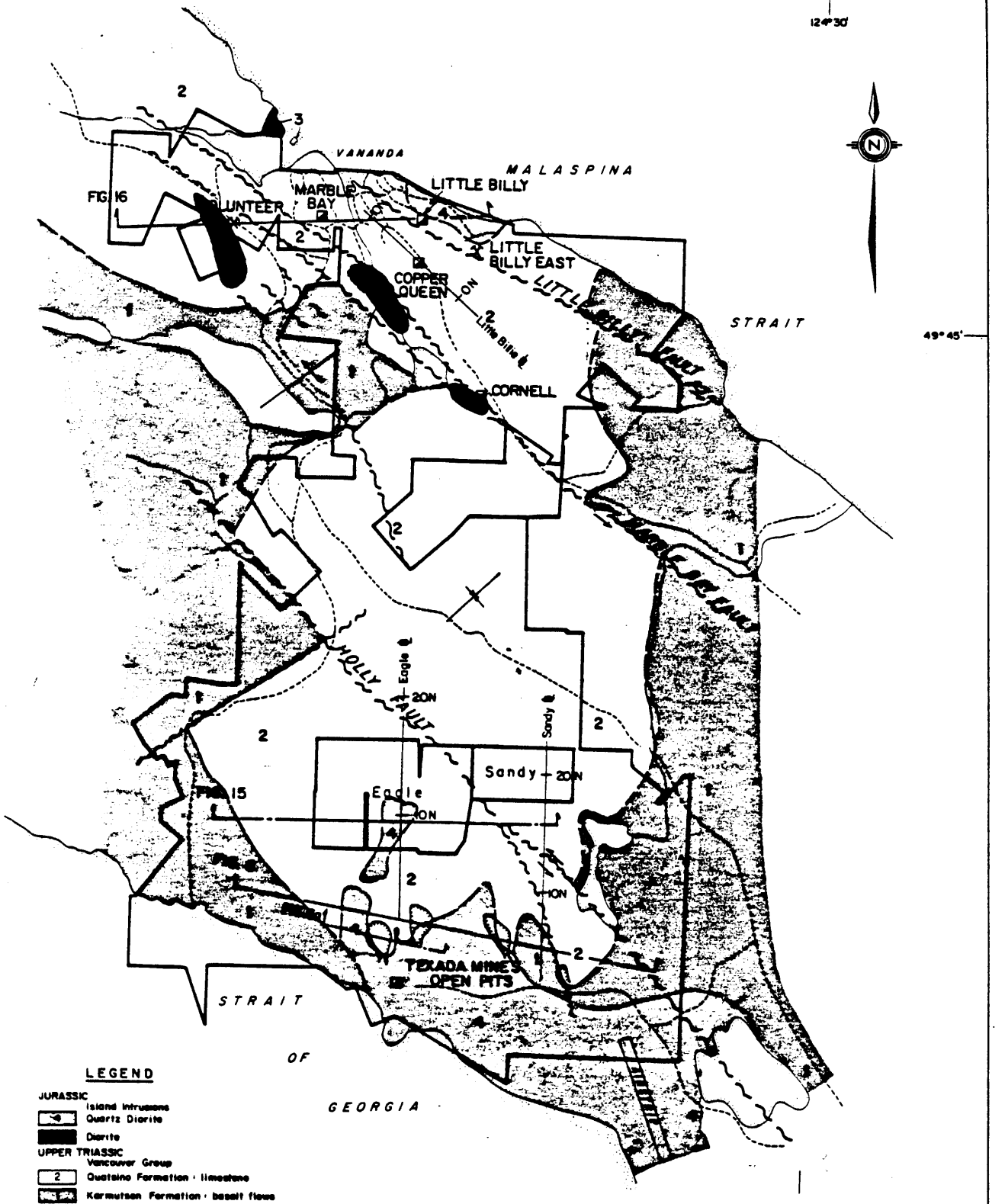
The overlying Marble Bay limestones are thick bedded, almost devoid of distinguishing marker beds and fossils and may be up to 2,000 feet in thickness (Muller, 1977). Muller makes three divisions in the carbonates on Texada: a lower, pure $CaCO_3$ limestone, a middle mixed dolomitic limestone yielding up to 17% MgO, and an upper, dolomitic unit.

Four primary intrusive bodies outcrop on the property and all have significant to potentially significant copper, gold and iron rich skarns developed along their contacts with the Marble Bay limestones and, local to the Texada Mine, the basalt.

The Little Billie stock in the northern portion is a biotite quartz diorite (tonalite– Ettlinger, 1988) with important copper, gold-rich wollastonite, garnet, diopside skarns developed in vertical pipes along embayments in the intrusive contacts.

The Gilles stock south of the Texada iron mines was responsible for the magnetite and chalcopyrite-rich amphibole, garnet skarns that developed within large embayments in the granite; as vertical magnetite pipes in the marble; and along the lower, flat lying volcanic, marble contact.

The Northwest Diorite extends north across the Eagle claims from the western flank of the Gillies stock and is hornblende diorite in composition (Bradford, 1989). Garnet, amphibole skarns with disseminated to massive pods of chalcopyrite and magnetite outcrops along the easterly dipping, western contact.


124°30'
49°45'
VANANDA
MALASPINA
STRAIT
OF
GEORGIA
FIG. 16
FIG. 15
MARBLE BAY
LITTLE BILLY
LITTLE BILLY EAST
COPPER QUEEN
CORNELL
MOLLY
Eagle
Sandy
20N
10N
TEXADA MINE'S OPEN PITS
LEGEND
JURASSIC
Island Intrusions
Quartz Diorite
Diorite
UPPER TRIASSIC
Vancouver Group
Quatsino Formation - limestone
Karmutsen Formation - basalt flows
Geological contact
Fault
Property boundary
Road
Creek
Open pit
Shaft
Showing
inches
centimetres
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VANANDA GOLD LTD.
TEXADA PROJECT
GENERAL GEOLOGY
N.T.S. 92F-10E, 15E
NANAIMO M.D., B.C.
1 MILE
2 KM.
SCALE : AS SHOWN
DATE : JULY 1991
N.T.S. 92F-10E, 15E
FIGURE No. 2

CHORG

In the northwest sector of the the property, south of the road to Blubber Bay, the Volunteer stock is central to the Volunteer claim. Also hornblende diorite in composition, the stock has magnetite, chalcopyrite, garnet skarns exposed along both its northern and southern contacts with the Marble Bay limestones.

An extensive network of basaltic to dacitic dykes criss-cross the property in the carbonate rocks. The preferred direction appears to be north-north and east-west. No dating has been done, but calc-silicate alteration and garnet development within the dykes indicate that they were in part pre-skarn. Others are observed cutting the two main stocks.

Situated along a northwesterly trend from the Cornell through the Florence, Security zones and into the Marble Bay, Vananda area, are a series of small, circular to elongated hornblende diorite intrusions. In the Florence, Cornell areas, these have been mapped as gabbros by most previous workers, although petrographic work indicates the rocks are hornblende diorite (Murck, 1988).

Underlying Sturt Bay at the northern boundary of the property, is a cylindrical stock whose composition is "transitional to quartz diorite", (Ney, 1943). The stock is a quartz-rich, hornblende diorite with a very strong, circular, airborne magnetic signature due to its magnetite content.

The structural geology of the property on a gross scale consists entirely of northwesterly and northeasterly trending sinistral strike-slip faults with the northwesterly trend being dominant (Glover, 1989 & Bradford, 1989). The two major structures are the Marble Bay and Holly faults (Figure 3), which along with numerous splays, could have a profound influence on the emplacement of the skarns and the gold, quartz fissure veins (Glover, 1989). North-south structures, generally with feldspar porphyry dykes occupying them, extend north from the Texada mines and often have garnet skarn with copper mineralization and gold values developed along the dyke contacts.

TABLE II

LITTLE BILLY SUMMARY ASSAYS

Vananda Gold's Texada Project:

Summary of Significant Drill Results in the Little Billie Mine Area:

DRILL HOLE	from (m)	to (m)	Interval (m)	Au (oz/ton)	Ag (oz/ton)	Cu (%)
T88-1	228.2	234.1	5.9	0.212	0.85	1.58
	241.2	243.7	2.5	0.416	2.65	5.92
T88-3	271.1	276.2	5.1	0.820	2.16	2.90
T88-4	278.9	283.5	4.6	0.499	1.55	2.57
T89-9	292.1	298.5	6.4	0.075	0.23	0.82
T91-31	175.8	177.4	1.6	0.246	1.71	3.84
	241.0	248.7	7.7	0.228	0.77	1.77
T91-32	160.2	162.0	1.8	0.141	0.56	1.45
	166.0	167.7	1.7	0.145	0.47	1.69
	204.7	206.7	2.0	0.823	1.18	1.94
	213.0	233.8	20.8	0.291	1.17	2.45
T91-33	221.7	227.4	5.7	0.372	0.50	3.11

7.0 MINERAL DEPOSITS

Texada Island hosts several gold-enriched copper and iron skarn deposits and numerous smaller skarn and replacement (manto) bodies, quartz-gold veins and quartz-filled shears. All of the past producing skarn deposits and developed skarn prospects on the island are contained within the property held by Vananda Gold Ltd. (Figure 2). Copper-gold skarn deposits were exploited in the Vananda camp on the northeast part of the island. Between 1896 and 1976 approximately 2,425 kilograms of gold, 16,368 kilograms of Ag, and 9,157 metric tons of copper were produced from 307,700 metric tons of ore from the Little Billie, Marble Bay, Cornell and Copper Queen mines (Peatfield, 1987) in the Vananda area.

Skarn mineralization at these deposits is similar to other copper skarns described by Einaudi et al, (1981) and Meinert (1983). However, the two largest deposits, worked at the Marble Bay and Little Billie mines, averaged 0.23 and 0.17 ounces Au per ton, respectively. Thus these deposits have gold grades comparable to the important Fortitude gold skarn in Nevada (Myers and Meinert, 1990) and the newly reopened Nickel Plate mine in the Hedley district (Ray et al., 1988).

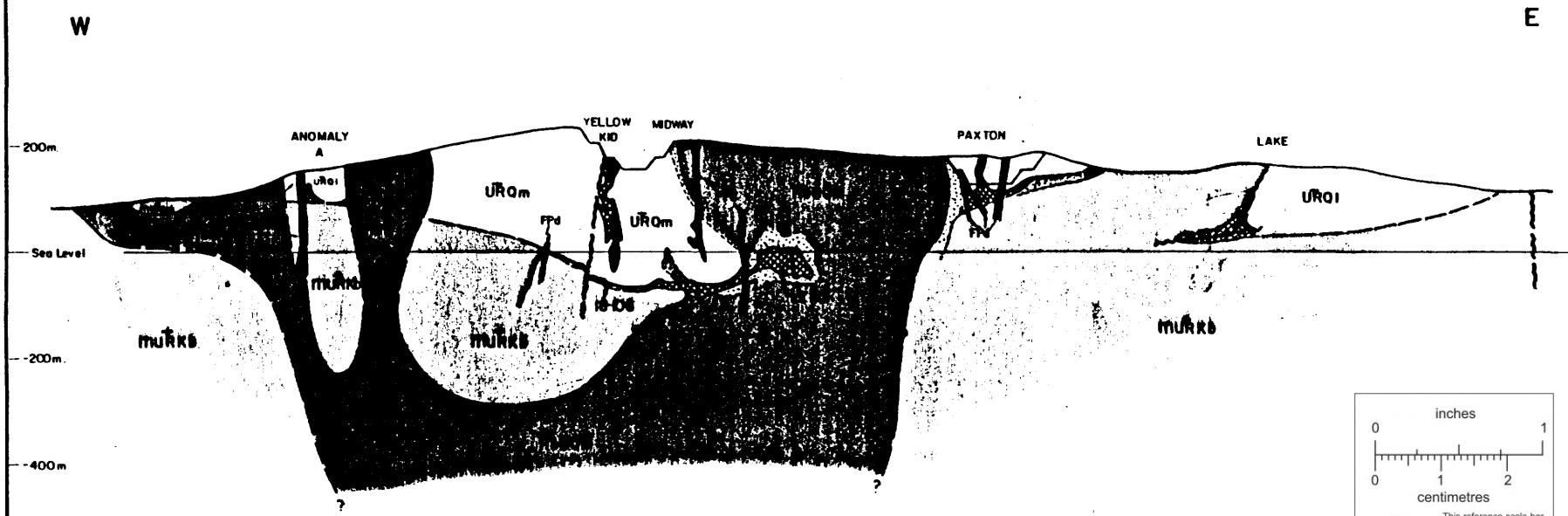
At the southern end of the property, over 20,000,000 tons of magnetite and chalcopyrite ore were produced from the iron skarns of Texada Mines (Peatfield, 1987).

7.1 Little Billie Mine:

The Little Billie Mine was first operated in the 1890's and continued intermittently to 1951 producing 70,000 tons of ore grading 0.18 opt gold, 0.6 opt silver and 1.3 % copper above the 600 foot level, the lowest working level in the mine. Diamond drilling in 1951, 1988 and 1989 indicated and inferred a geological resource of approximately 171,000 tons grading 0.21 opt gold, 0.82 opt silver and 1.39 % copper (Peatfield, 1990). Three of five holes drilled in 1991, 91-31, 32 & 33, (Figure 20; Table II), enhance the resource estimated by Peatfield.

7.2 Texada Iron Mines:

The iron, copper deposits in the southern portion of the claim block produced 20,000,000 tons of magnetite, chalcopyrite skarn ore developed in marble and the peripheral to the irregular, northwest margin of the Gillies quartz monzonite stock. At the close of the mine in 1976, reserves were listed as 1,200,000 tons of 40% Fe and 0.42% Cu (Dove, 1976).



inches
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centimetres

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LEGEND

HbQD - hornblende quartz diorite
HbBQM - hornblende, biotite quartz monzonite
UTRQR - Quatsino (Marble Bay Fm.) Limestone, m - Marble
muTRKb - Karmutsen (Texada Fm.) basalt

skarn

magnetite, sulphide skarn

TEXADA MINES
E-W SECTION
LOOKING N.

0 200 400M

FIG. 3

CHONG

The mine initially consisted of large, steeply plunging magnetite pipes mined by open pit. When followed to depth with underground development, additional bodies of magnetite skarn within embayments in the quartz monzonite and thick, flat lying bodies of copper rich-skarn at the basal contact of the Quatsino limestones and the underlying Karmutsen volcanics were discovered. Figure 3 illustrates in cross section, the geometry of the various ore zones and their relationship to the granite and volcanics.

Copper production in the mine totalled 56,000,000 pounds with gold credits of 31,200 ounces. Gold assays were not done in the mine with the only reported gold assays being the copper concentrate shipments to Japan.

Freeport undertook a sampling program in the open pits and, as the underground workings were not accessible, selected samples from coarse rejects and drill core (Forster, 1988). Areas in the mine, particularly the copper-rich zones, were sampled and analyzed for gold and 32 element ICP.

Three hundred channel samples were cut in the pits using hand held diamond saws, with the majority from the Paxton. The zones with greater than 0.01 opt Au were averaged (Table III– Forster, 1988), showing three to ten metre intervals of 0.02 to 0.08 opt Au; 0.4 to 1.0 opt Ag and 1% to 3% Cu. Averaging the intervals on the floor of the Paxton pit, the copper-rich zones average 0.028 opt Au, 0.50 opt Ag and 1.4% Cu.

In the Lake Pit, massive magnetite, pyrrhotite-rich skarn was sampled, returning negligible gold values. Drill core was unavailable, however composited coarse rejects from the mineralized intervals in the underground drill holes were available. Of the 102 samples submitted, 3 samples returned values over 1,000 ppb Au with the highest value being 1280 ppb Au, 40 ppm Ag and >10,000 ppm Cu. At the close of the mine in 1976, 460,000 long tons of 44% Fe and 0.15% Cu, remained in the underground workings (Dove, 1976).

Elsewhere in the underground mine workings, the best gold values, obtained from the coarse reject sampling, were 3,200 ppb Au, 33 ppm Ag and >10,000 ppm Cu from a 10 foot interval in the Le Roi. One 3.5 foot interval of core from a coarse calcite, chalcopyrite vein in the Midway deposit, returned a gold value of 0.37 opt Au. Finally, eight coarse reject composite samples from the copper-rich North Extension deposit, returned values of 65 ppb Au to 1100 ppb Au (Forster, 1988).

TABLE III: SIGNIFICANT PAXTON ASSAY RESULTS—1988

(From Forster, 1988)

	width (m)	oz/T Au	oz/T Ag	% Cu
Wall Sample:				
Pa 2	3	0.016	0.56	0.84
Pa 3	4	<.006		
Pa 4	1	0.017	0.47	1.12
Pa 5	3	0.038	0.76	2.26
Pa 6	2	0.018	0.39	0.81
Pa 7	4	0.019	0.41	1.10
Pa 8	4	0.030	0.65	n.a.
Pa 9	4	0.034	0.88	n.a.
Pa 10	6	0.070	0.34	0.92
Pa 11	3	0.024	0.55	1.07
Pa 12	3	0.065	0.12	3.11
11050N	9	0.032	0.76	n.a.
Floor Samples:				
Pf 1	5	0.017	0.48	0.92
Pf 2	5	0.082	1.36	3.14
Pf 3	4	0.036	0.61	1.75
Pf 4	9	0.010	0.24	0.78
Pf 5	1	0.018	0.48	1.07
Pf 6	1	0.030	0.04	1.25
Pf 7	20	0.021	0.44	1.70
Averages:	5	0.028	0.50	1.40

NB: n.a.= not assayed

8.0 GEOPYSICAL PROGRAM

The 1991 geophysical program was undertaken at the request of Vananda Gold Ltd. for the purpose of providing better definition to induced polarization anomalies located from earlier surveys by Delta Geoscience Ltd. and Peter Walcott and Associates for Freeport-McMoRan Gold Co. In addition, induced polarization was done over the Eagle grid and the Lafarge Quarry, both of which had not previously been surveyed with IP.

8.1 Eagle Grid:

An induced polarization survey utilizing a gradient array was conducted over 29.5 line kilometres of cut line on the Eagle grid (Figure 2). Using an 1,800 metre current electrode spacing (AB) and a 50 metre pot spacing (MN), the approximate depth of penetration for the survey is 300 metres as determined by a factor of 0.165 times the AB spacing based upon the very shallow, non-conductive overburden and the relatively high bedrock resistivities.

The chargeability plotted and contoured in milliseconds on Figure 4, defines a broad anomaly of greater than 17 milliseconds between 2+00 N and 13+00 N and approximately 0+00 and 8+00 W (Figure 5). The feature encompasses a NNE trending dioritic intrusive (Figure 9), that lies irregularly between 0+00 and 3+00 W. In 1962 and 1968, Texada Mines drilled eleven holes on six, 30 metre spaced fences, along the easterly dipping, western margin of the diorite. The most northerly hole, H-2, intersected disseminated to massive chalcopyrite grading up to 2.45 % over 3 metres in a 30 metre thick skarn coincident to the central axis of the chargeability high.

To locate the depth of the chargeability high, L 7+00 N was detailed by re-surveying using 4 different AB spacings; the original 1800 metre, a 1000 metre, a 500 metre and a 200 metre separation. This system was modelled after a similar survey in Albania (Langore et al, 1989) that located disseminated to massive sulphide mineralization at depths of 400 metres to 500 metres (See Appendix II for an extract of the paper). Using the 0.165 factor on the AB spacing to estimate the effective depth of investigation for the current, the chargeability is plotted as a depth profile on Figure 6, and clearly shows the anomalous chargeability is developed approximately 250 metres below surface in three distinct zones over a total width of 500 metres. With the exception of a narrow chargeability high at 2+25 W, coincident to the central axis of the anomaly, the two shallow arrays show no evidence of the chargeability anomaly detected by the deeper arrays.

VANANDA GOLD LTD.

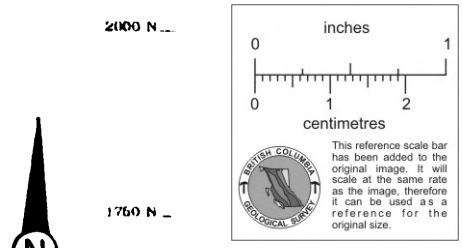
TEXADA PROJECT
EAGLE GRID

I.P. CHARGEABILITY

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 4



2000 N

1750 N

1500 N

1250 N

1000 N

L 7 N I.P. PROFILE

750 N

500 N

250 N

1000 W 750 W 500 W 250 W 0 250 E 500 E

VANANDA GOLD LTD.

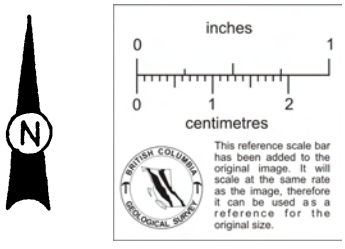
TEXADA PROJECT
EAGLE GRID

I.P. ANOMALIES

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1:10,000	DATE: JULY 1991
DRAWN BY: C.N.F.	FIGURE Nº.: 5



General outline of chargeability anomaly

Marked increase in chargeability

MANTO TARGET

20 N

89-9

89-10

89-28

MANTO TARGET

MANTO TARGET

15 N

DIORITE

MANTO TARGET

FLAT LYING Cu-SKARN TARGET

10 N

unsurveyed

VERTICAL Cu-SKARN TARGET ON NW DIORITE CONTACT

L7N I.P. Profile

5 N

H7

OH3

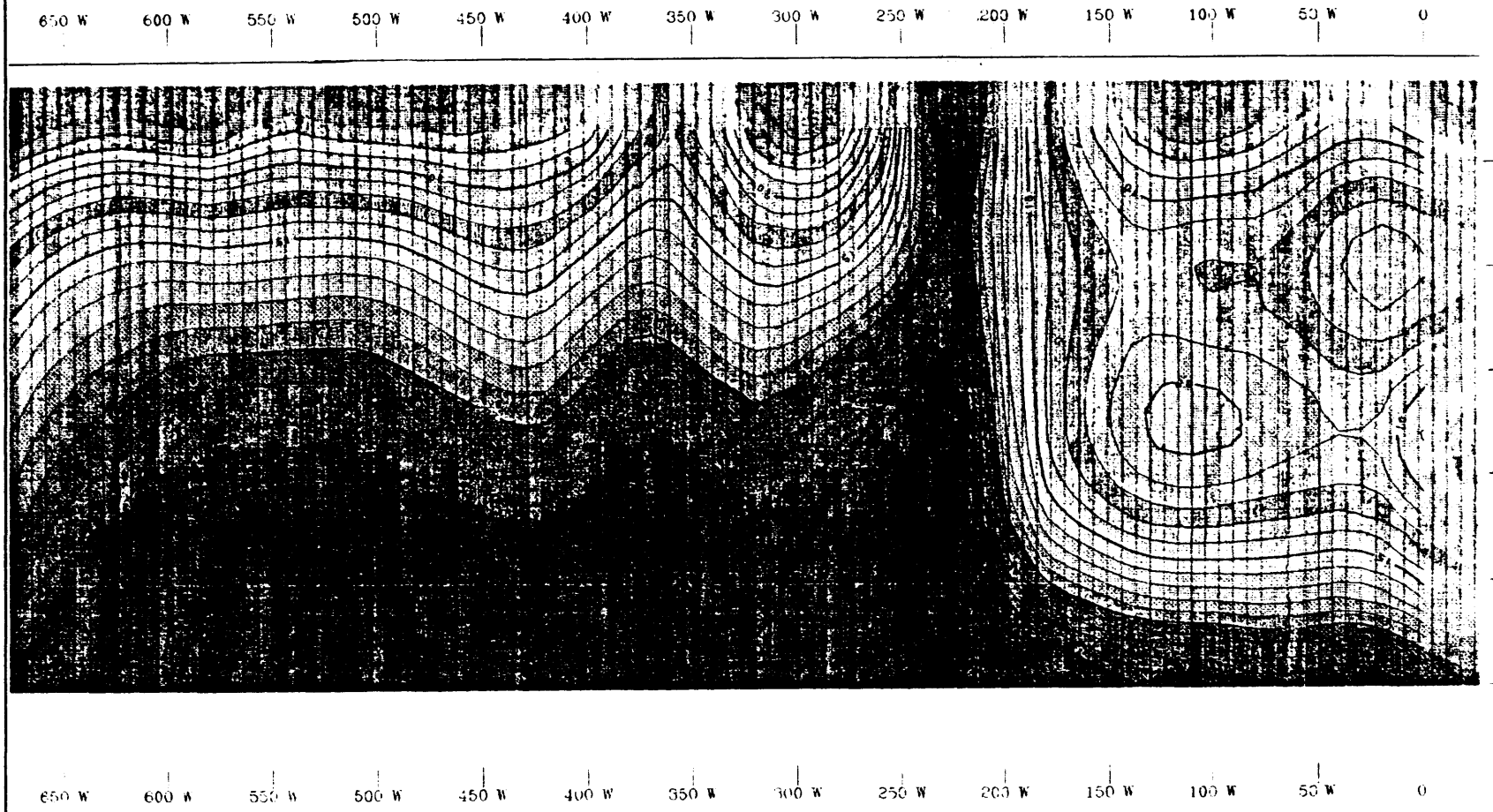
OH9

DEEP N. EXTENSION ORE ?

00 B.L.

Strait of Georgia

CHONG



650 W 600 W 550 W 500 W 450 W 400 W 350 W 300 W 250 W 200 W 150 W 100 W 50 W 0

inches
0 1
0 1 2
centimetres

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Chargeability 1mv/v contours
(1 millisecond)

VANANDA GOLD LTD.

TEXADA PROJECT
EAGLE GRID - L.7 N.

GRADIENT I.P. DEPTH PROFILE

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 20 40 60 120 Metres

SCALE 1:2000	DATE JULY 1991
DRAWN BY C N F	FIGURE NR. 6

CHONG

Figure 7, illustrates the projection of the gently dipping limestone, volcanic contact, host for the bulk of the copper-rich skarn in the mine (Figure 3), through the centres of the chargeability anomalies (Figure 6).

East of 2+00 W, the NW diorite, as defined from drill holes, has no chargeable response, but an apparent flat lying, sharp increase in chargeability is developing at the base of the section. This feature is on the projection of the deep, copper-rich 18-106 and North Extension ore bodies in Texada Mines (Figure 3 & 9).

The total field, ground magnetics (Figure 8), highlites the magnetite bearing Northwest Diorite and the magnetite rich, amphibole skarns developed at the western contact. The magnetic contour map also reveals five northwest trending structures, cutting the diorite, parallel to the main, auriferous Holly structure (Figure 8). Flanking the diorite to the west, is a broad magnetic high or "shoulder" to the diorite, that is coincident to the broad IP chargeability anomaly. This feature could be indicating the presence of flat lying magnetite lenses in the skarn, analogous to Texada Mines, and/or a broad shoulder to the diorite, underlying the volcanic contact. Both scenarios would be favourable indications for the presence of a large skarn coincident to the IP anomaly.

VANANDA GOLD LTD.

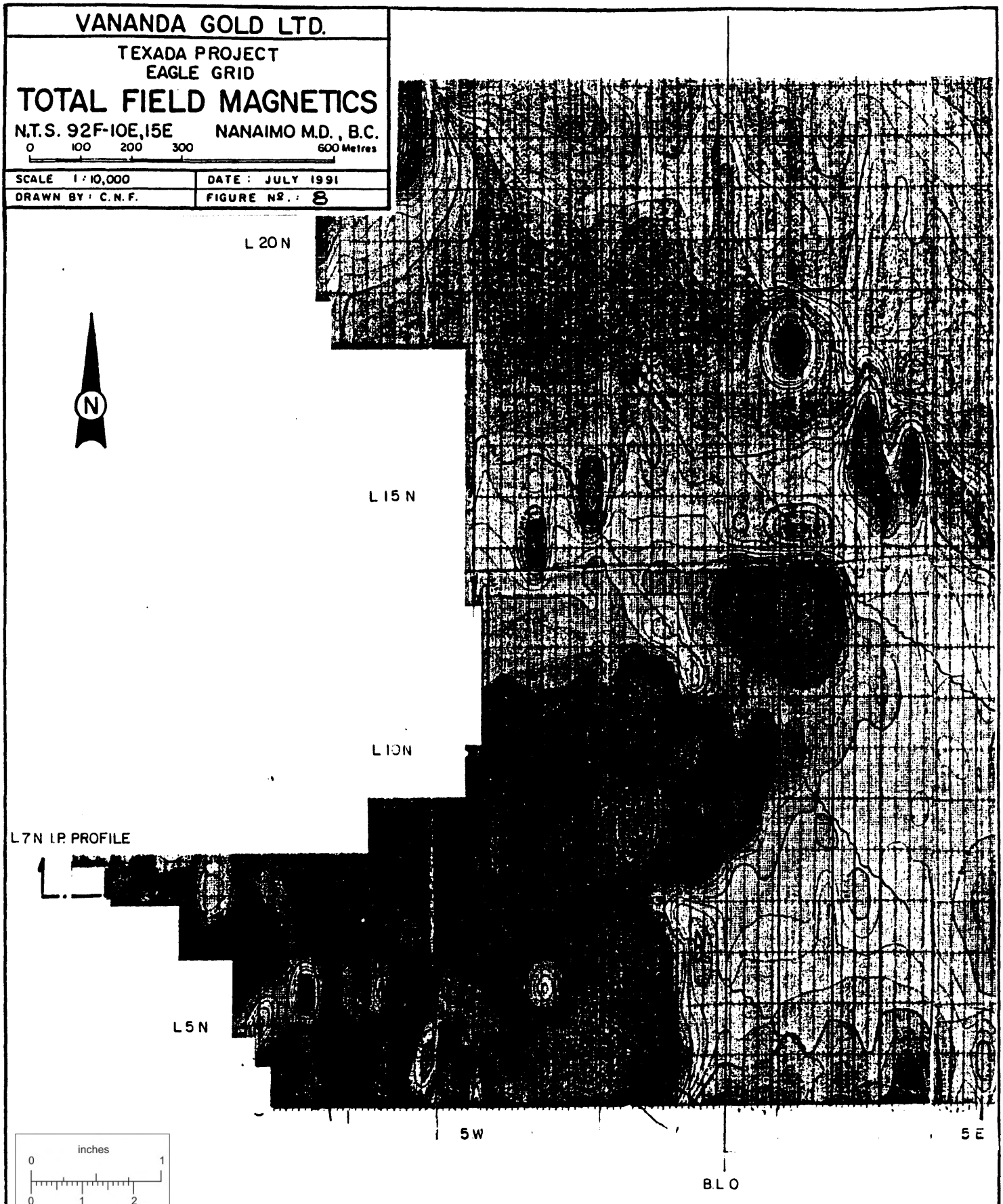
TEXADA PROJECT
EAGLE GRID

TOTAL FIELD MAGNETICS

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 8



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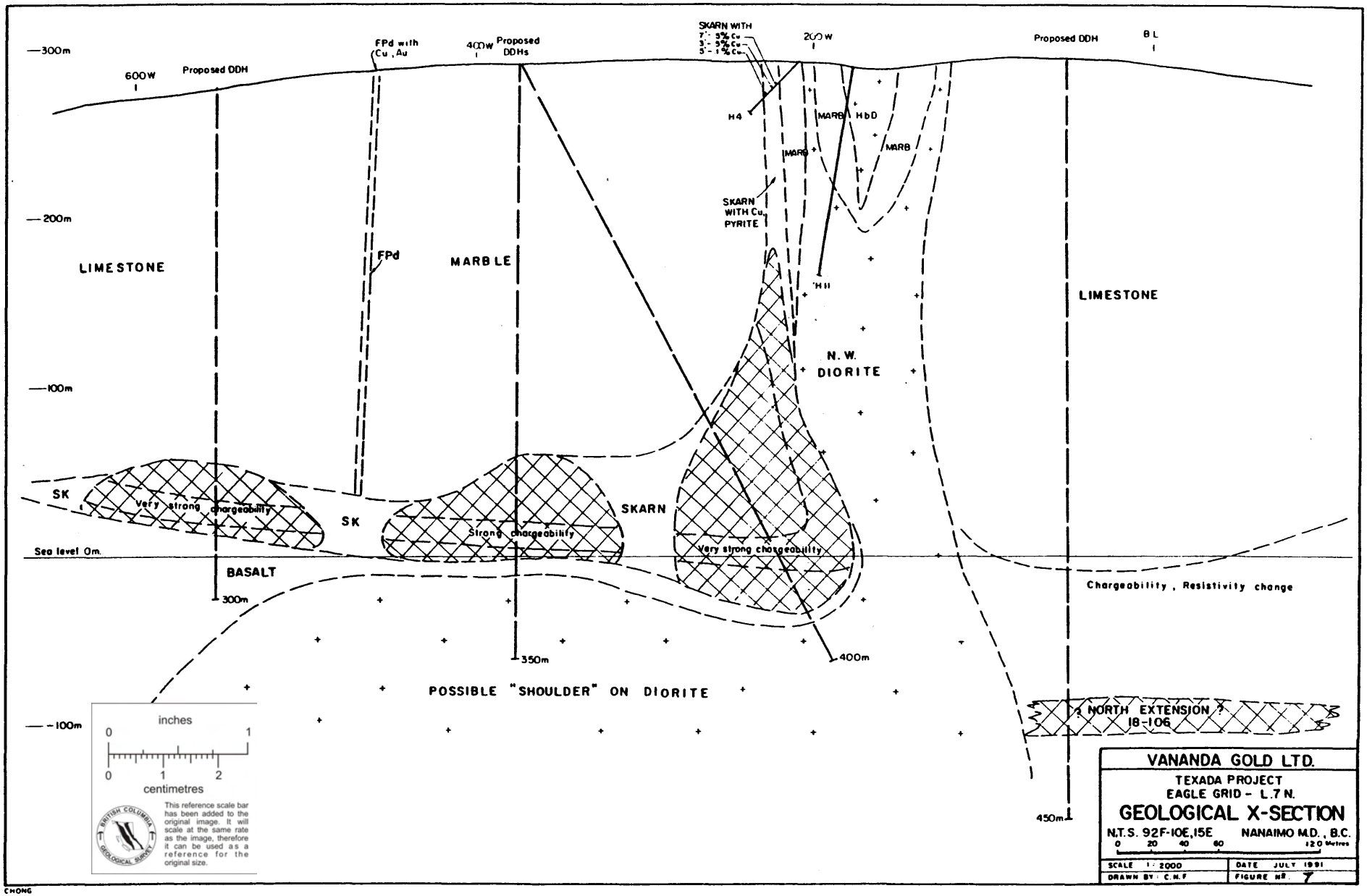
300m
200m
100m
-100m
600W
Proposed DDH
FPd with Cu, Au
400W
Proposed DDHs
SKARN WITH
7 - 9% Cu
3 - 5% Cu
1 - 3% Cu
200W
Proposed DDH
B L
H4
MARB
HbD
MARB
MARB
SKARN WITH Cu, PYRITE
H11
LIMESTONE
FPd
MARBLE
N. W. DIORITE
LIMESTONE
SK
Very strong chargeability
SK
SKARN
Strong chargeability
Very strong chargeability
Sea level 0m.
BASALT
300m
350m
400m
Chargeability, Resistivity change
POSSIBLE "SHOULDER" ON DIORITE
NORTH EXTENSION ? 18-106
450m
inches
0
1
0
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2
centimetres
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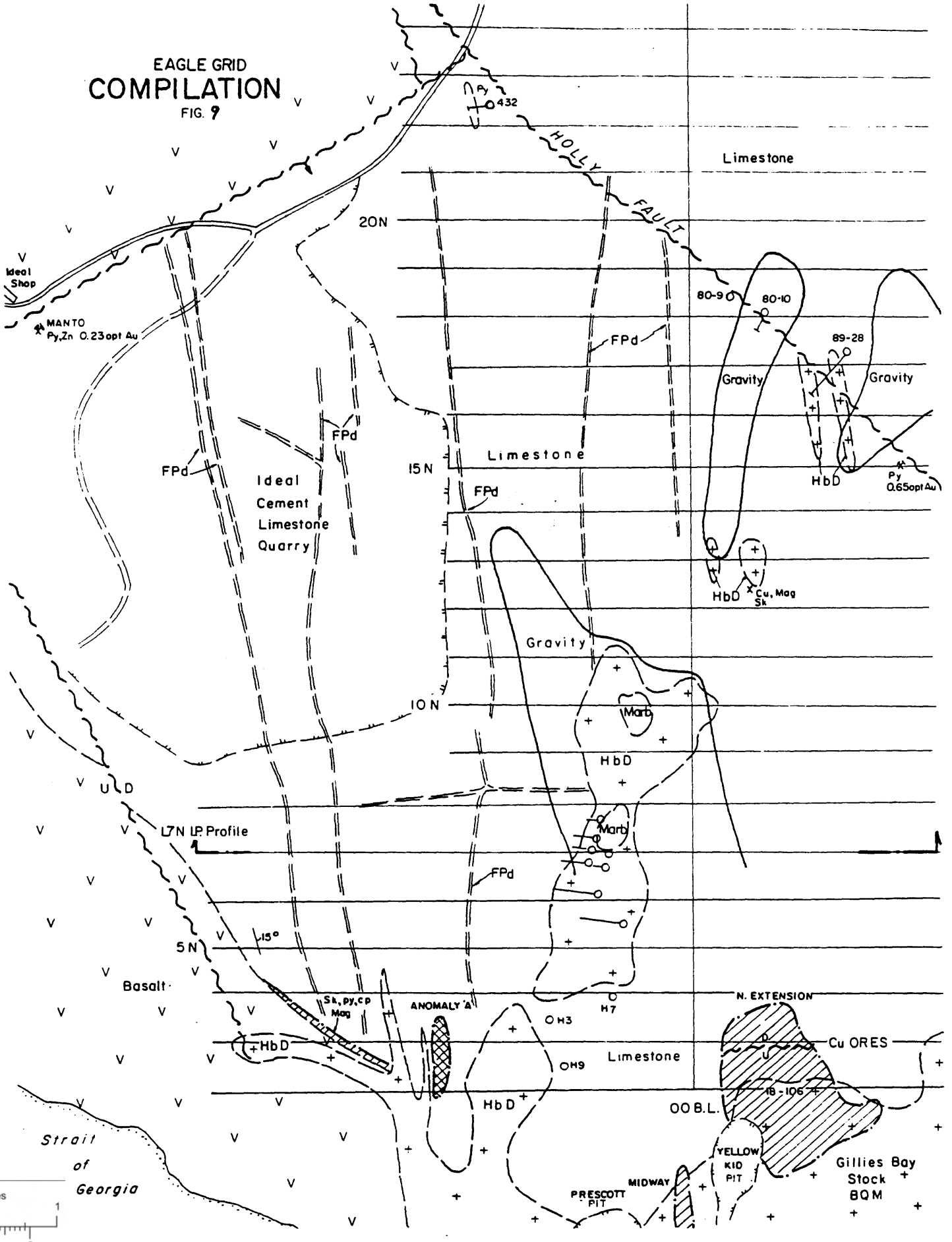
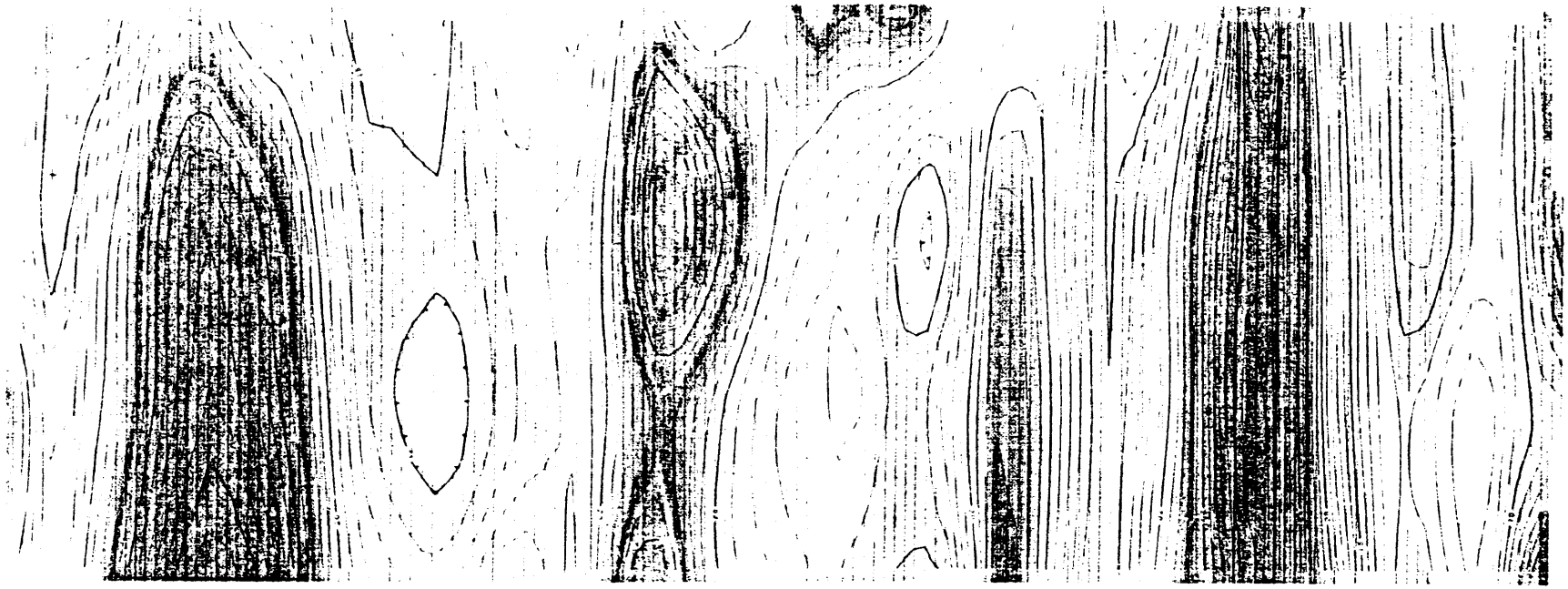
VANANDA GOLD LTD.
TEXADA PROJECT
EAGLE GRID - L.7 N.
GEOLOGICAL X-SECTION
N.T.S. 92F-10E,15E
NANAIMO M.D., B.C.
0 20 40 60 120 Metres
SCALE 1:2000
DATE JULY 1991
DRAWN BY: C.H.F
FIGURE NR. 7
CHONG

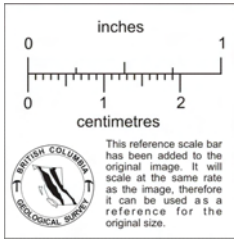


8.2 Manto Targets, Eagle grid:

North of the above described chargeability anomaly, four distinct chargeability highs (Figure 5), were located by the survey. These have low magnetic relief and show no response in the VLF profiles. Prospecting the lines indicates the presence of fine grained to sugary marble but no evidence of sulphide concentrations indicative of the chargeability highs. Soil geochemistry has anomalous zinc, cadmium, arsenic, copper and gold scattered around the IP highs indicating "leakage" along vertical faults and dykes that both cut and flank the anomalies.

The IP indicates 200 to 300 metre strike lengths with widths of 20 to 50 metres. A depth profile of Line 15+00 N (Figure 10), shows the chargeability response start within 50 metres of surface and continue to a depth of at least 350 metres. As the IP anomalies have no correlating magnetic expression, mineralization similar to the sphalerite, pyrite-rich manto, located 800 metres west in the quarry (Figure 9), and grading 0.23 opt gold, is a possible type source. Pyrite was encountered in Ideal Cement drill hole # 432 (Figure 9), on Line 23+00 N at the eastern edge of the northern most IP anomaly. Ideal's drill logs describe 25 metres of disseminated pyrite and goethite at the bottom of the hole, no assays were done for gold and base metals. As this appears to be flanking the anomaly it may be pyrite dispersed about a manto or chimney.





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Chargeability Imv/v contours
(1 milliesecond)

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TEXADA PROJECT
EAGLE GRID – L15N

GRADIENT I.P. DEPTH PROFILE

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 50 100 150 Metres

SCALE AS SHOWN	DATE : JULY 1991
DRAWN BY : C.H.F.	FIGURE NO. : 10

CHONG

8.3 Sandy Grid:

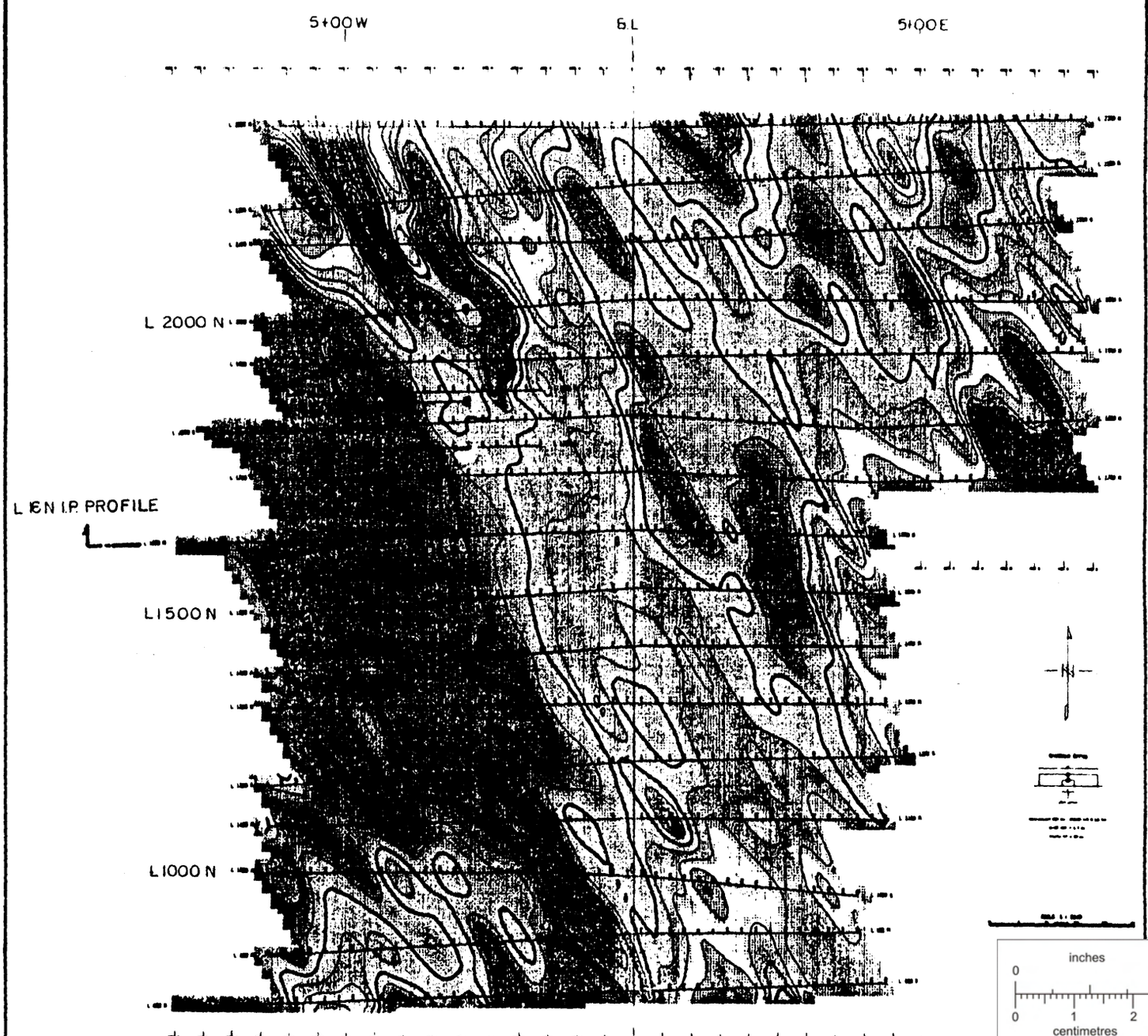
Gradient IP was conducted over the Sandy grid (Figure 2) in 1988 by Walcott and Associates using a 2,400 metre current electrode or AB separation. A broad, NNW trending, subtle chargeability anomaly was delineated from L 12+00 N to L 20+00 N (Figure 11 & 12), that when contoured averages 400 to 500 metres in width. Lying to the west of the Lake Fault, the chargeability high is developed northwest from a moderate magnetic high into an area of low magnetic relief (Figure 13).

In 1989 Freeport McMoRan Gold drilled nine holes (Figure 14), into the anomaly with seven holes bottoming in slightly pyritic volcanics, which are flat lying 20 to 80 metres below surface (Figure 15). Hole 89-26 (Figure 16), collared at 18+30 N; 3+00 W, located 2.2 metres of massive pyrite grading 0.302 opt gold, 100 metres below surface and vertically below a sulphide-rich shear zone, grading 1.123 opt gold over 0.6 metres. Hole 89-27, drilled below #26, did not locate the mineralization but bottomed in the basalt on the down thrown side of the Lake Fault.

In 1991, a review of the Sandy IP data suggests that the source of the IP could be very deep and not the pyrite at the shallow volcanic contact in DDH's 22, 23, 24 & 25. To test this theory, Line 16+00 N was detailed using five current electrode (AB) separations with readings taken between the base line and 8+00 W. With chargeability plotted as a depth profile (Figure 17), it is clear that the response is strongest between 300 to 350 metres below surface. The interpretation was also confirmed by simultaneous inversion of chargeability and resistivity depth sounding data. The computer inversion program solves for a layered earth solution or fit to the observed data. As Line 16+00 N has four drill holes, 89-22 through 89-25 (Figure 18), the shallow, pyritic volcanic contact is defined and has only a modest increase in the chargeability. The main chargeability highs are another 100 metres beneath the deepest hole, 89-25. It is also noteworthy that a one metre section of +10,000 ppm Cu (> 1%) in hole 89-25 is coincident to the chargeability spike at 3+50 W in the shallow AB spacings.

To provide a geological explanation for the IP anomaly, the Lake deposit (Figures 14), if projected 500 metres north along the Lake Fault, would lie under the volcanics about 350 metres below surface as illustrated in Figure 18. The down thrown side of the volcanics, which would be the base of a potential ore deposit is already established from drill hole 89-27 (Figure 16), 230 metres north of section 16N. The ground magnetic survey (Figure 13), shows the marked difference between the magnetic response over the magnetite, pyrrhotite-rich Lake Deposit and the chargeability anomaly, which suggests the anomaly is derived from non-magnetic, chargeable mineralization, possibly pyrite and chalcopyrite.

The western side of the IP profile (Figure 17), between 6+50 W and 8+00 W shows the chargeability high is probably developed at the limestone, volcanic contact on the western flank of the volcanic horst. This would be in a similar position to the flat lying, copper-rich skarn developed at the limestone-volcanic contact in the floor of the Paxton pit (Figure 14), 400 metres west of the Lake Fault.



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centimetres

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VANANDA GOLD LTD.

TEXADA PROJECT

SANDY GRID

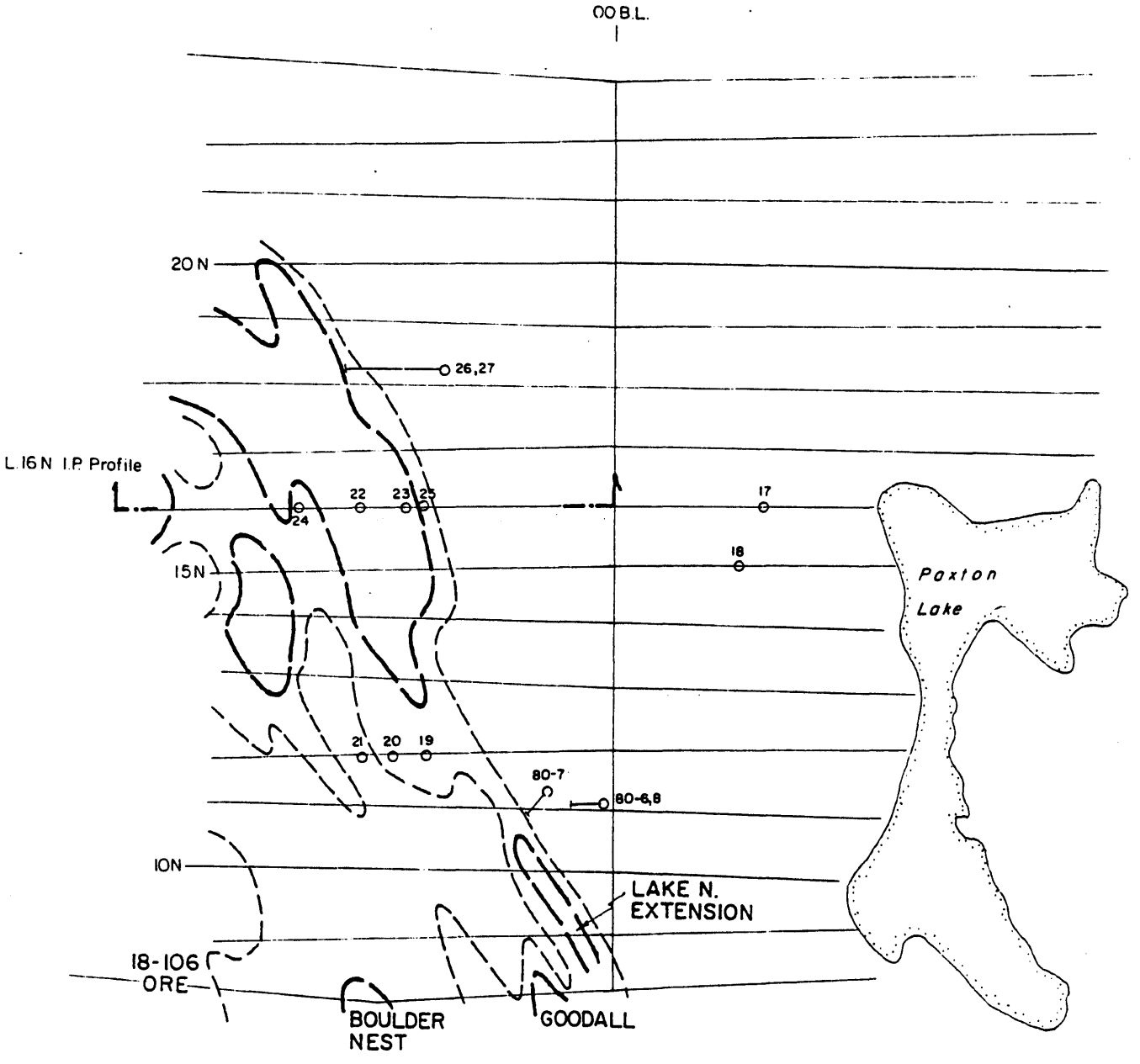
I.P. CHARGEABILITY

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 11

CHONG



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N

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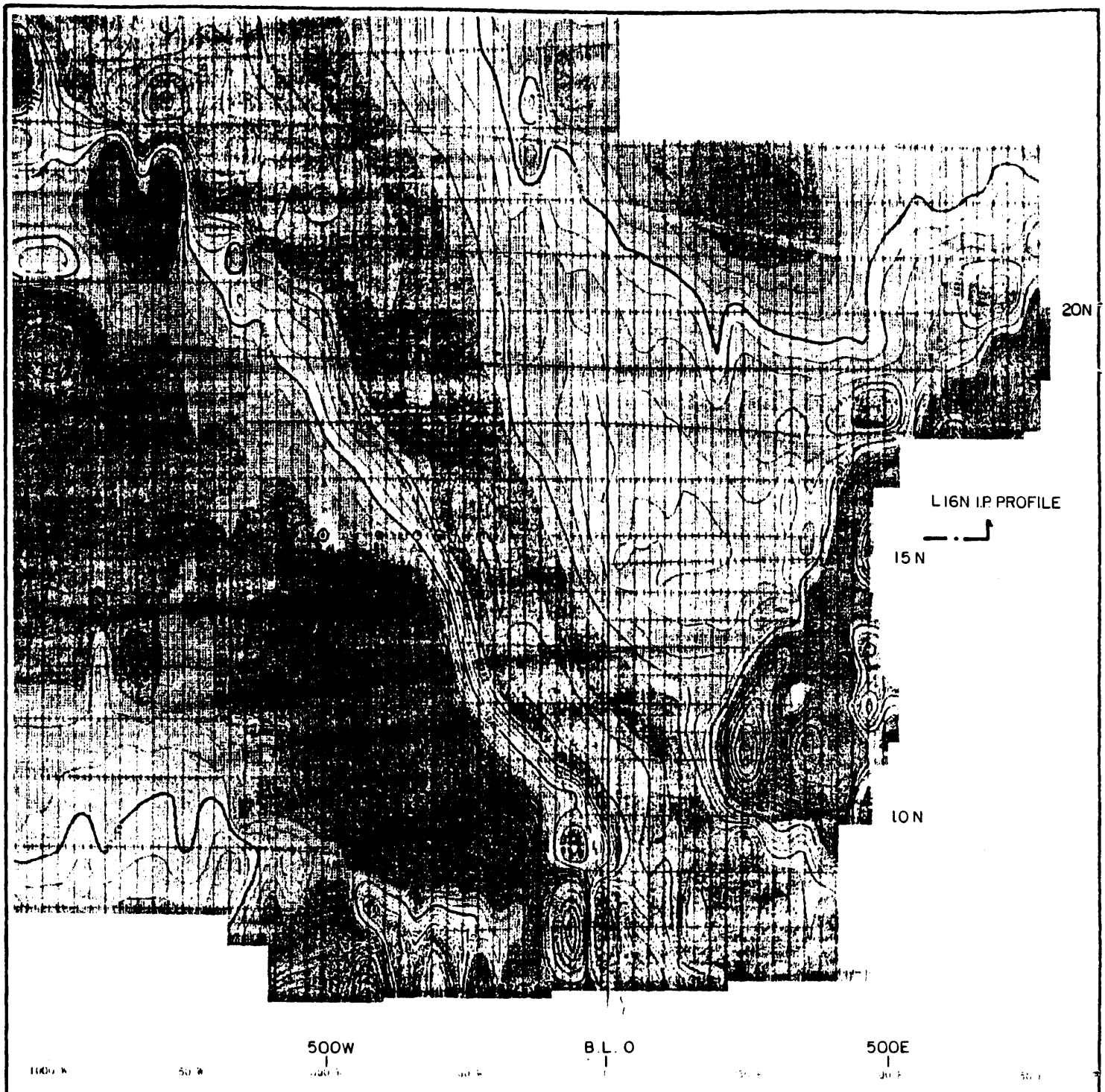
TEXADA PROJECT
SANDY GRID
I.P. ANOMALIES

N.T.S. 92F-10E, 15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C. N. F.	FIGURE Nº. : 12

CHONG



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N

VANANDA GOLD LTD.

TEXADA PROJECT

SANDY GRID

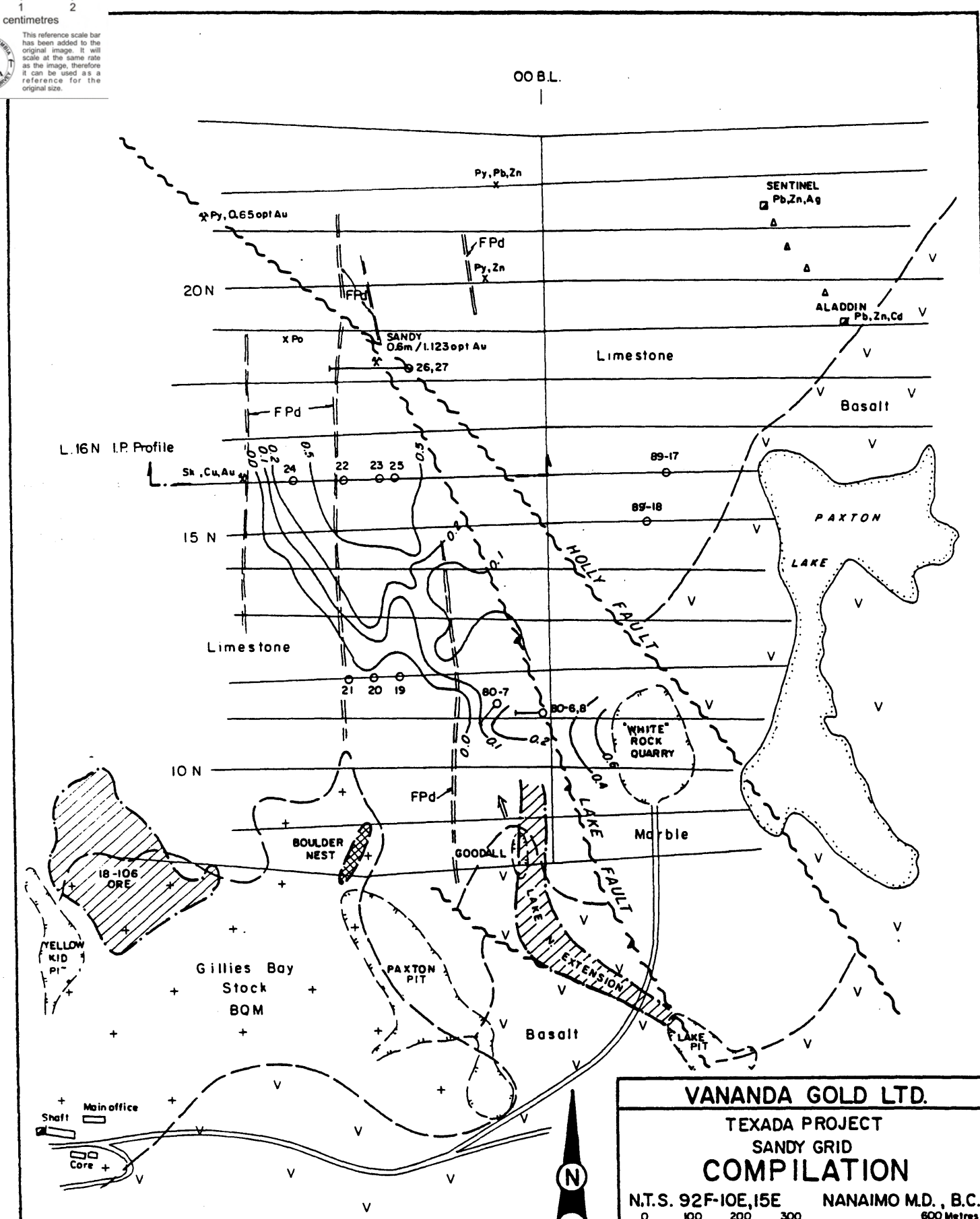
TOTAL FIELD MAGNETICS

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 13

CHONG



VANANDA GOLD LTD.

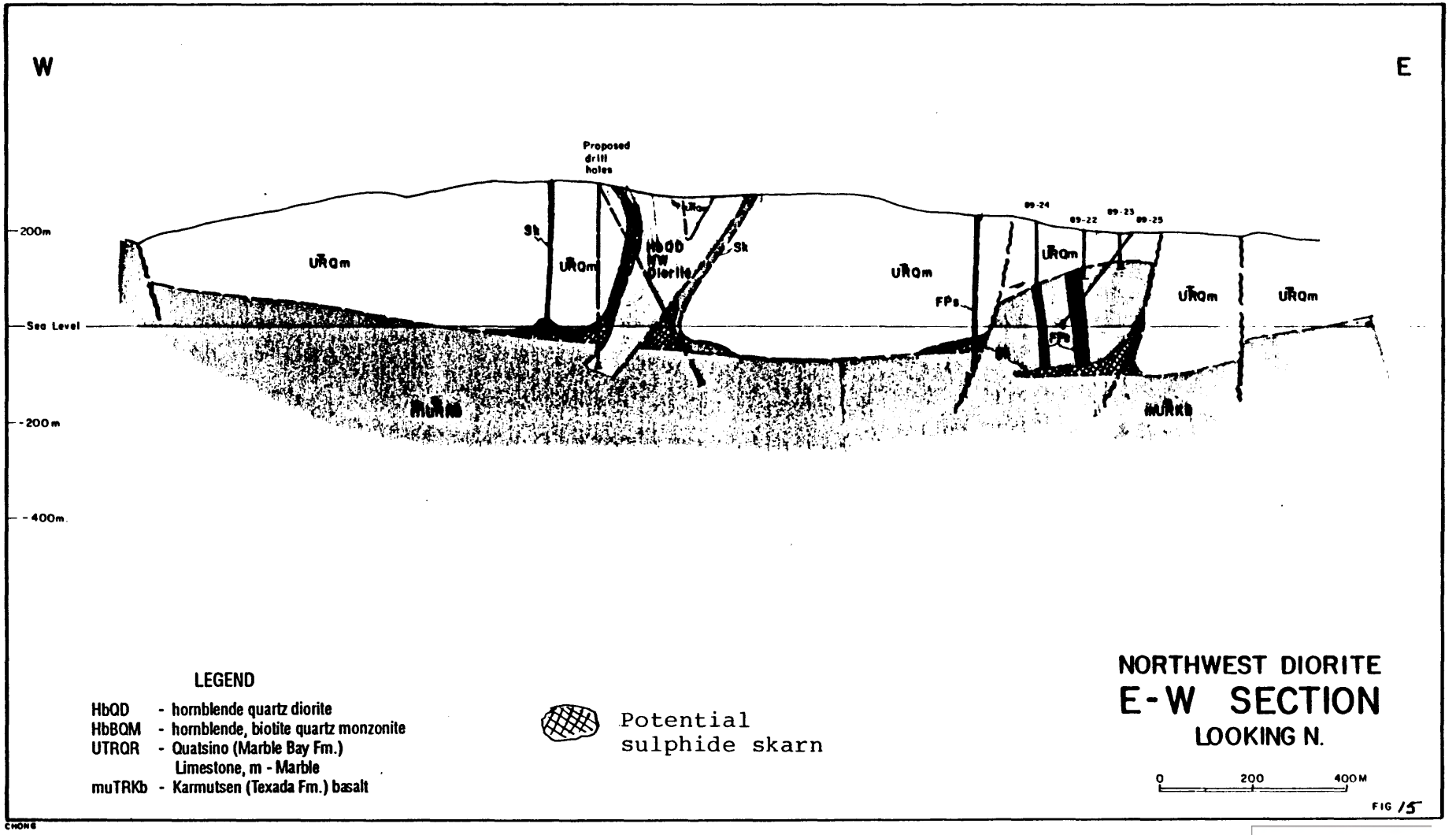
TEXADA PROJECT
SANDY GRID
COMPILATION

N.T.S. 92F-10E, 15E NANAIMO M.D., B.C.

0 100 200 300 600 Metres

SCALE 1 : 10,000	DATE : JULY 1991
DRAWN BY : C. N. F.	FIGURE Nº. : 14

CHONG



LEGEND

HbQD - hornblende quartz diorite
HbBQM - hornblende, biotite quartz monzonite
UTRQR - Quatsino (Marble Bay Fm.) Limestone, m - Marble
muTRKb - Karmutsen (Texada Fm.) basalt

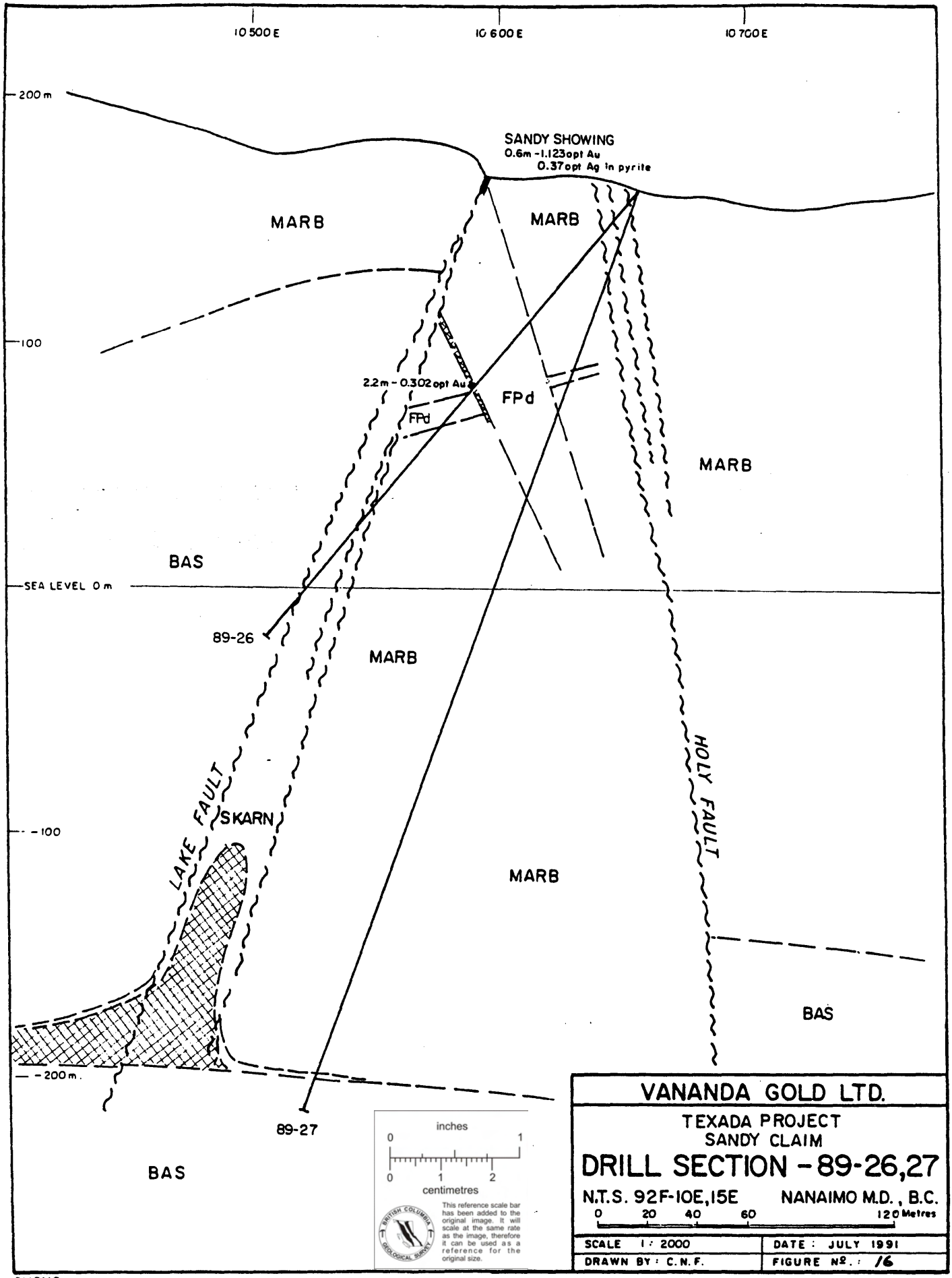
Potential sulphide skarn

NORTHWEST DIORITE
E-W SECTION
LOOKING N.

0 200 400M

FIG 15

CHONG


10 500 E
10 600 E
10 700 E
200 m
100
SEA LEVEL 0 m
-100
-200 m.
SANDY SHOWING
0.6m - 1.123opt Au
0.37opt Ag in pyrite
MARB
MARB
MARB
MARB
MARB
2.2m - 0.302opt Au
FPd
FPd
BAS
BAS
BAS
89-26
89-27
LAKE FAULT
SKARN
HOLY FAULT
inches
0
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0
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centimetres
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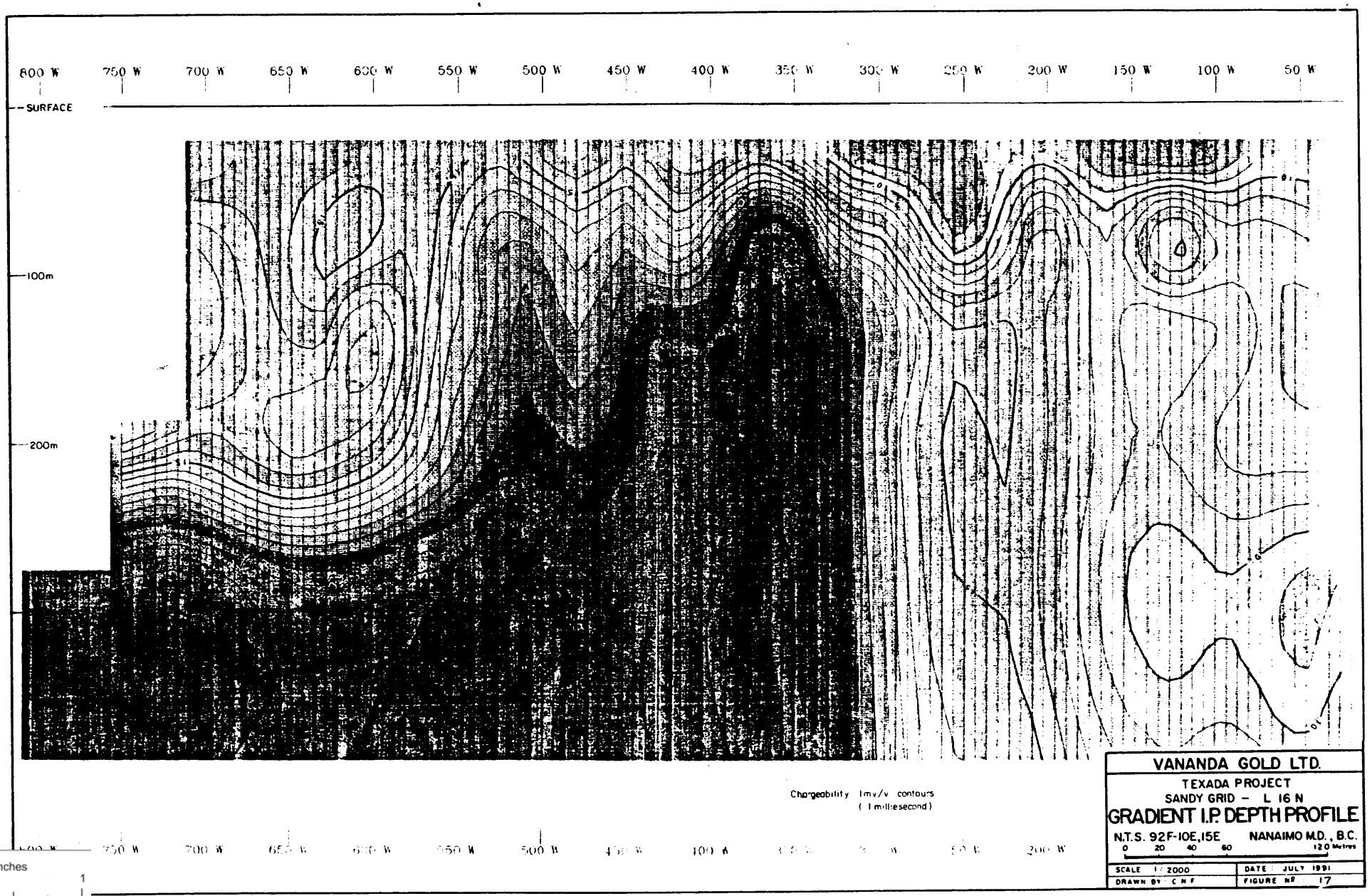
VANANDA GOLD LTD.
TEXADA PROJECT
SANDY CLAIM
DRILL SECTION - 89-26,27
N.T.S. 92F-10E,15E
NANAIMO M.D., B.C.
0 20 40 60 120 Metres
SCALE 1 : 2000
DATE : JULY 1991
DRAWN BY : C.N.F.
FIGURE Nº. : 16

CHONG



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TEXADA PROJECT

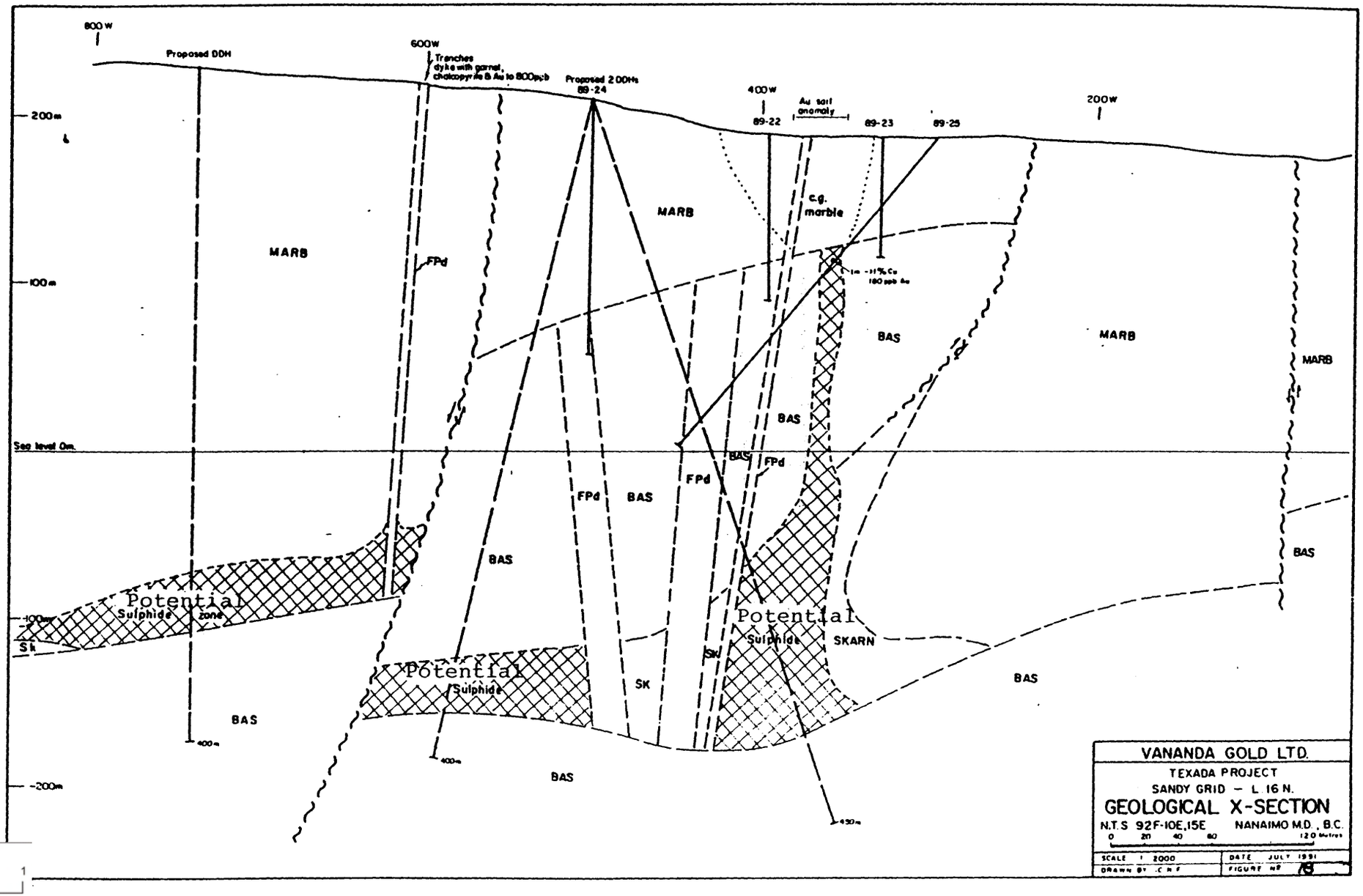
SANDY GRID – L 16 N

GRADIENT I.P. DEPTH PROFILE

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 20 40 60 120 Metres

SCALE 1:2000	DATE JULY 1991
DRAWN BY C N F	FIGURE NR 17



8.4 Little Billie:

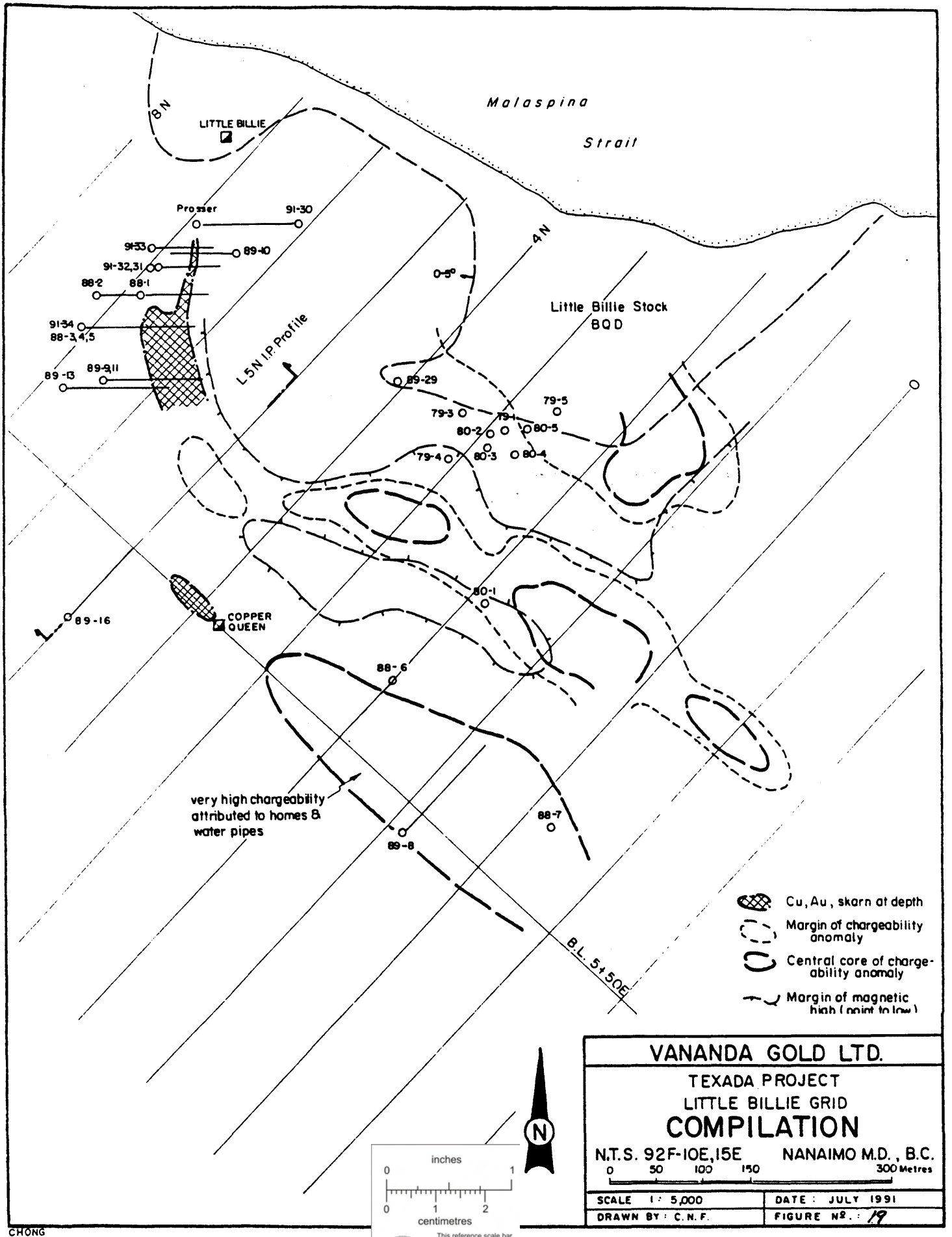
In May of 1991, gradient array, induced polarization surveys were once again carried out on the Little Billie grid (Figure 19). Previous surveys in 1988 (Walcott) and 1989 (Delta Geoscience) had defined a very strong chargeability high southeast of the Copper Queen Mine that was drill tested without success and was very likely due to cultural interference. The strength of the cultural anomaly tended to dwarf a subtle but very significant chargeability high, resistivity low extending off the southern end of the Little Billie mineralization encountered in DDH's 88-1, 88-3, 88-4, 89-9, 91-31, 91-32, and 91-33.

The most recent gradient survey (Figure 21), using an AB spacing of 1125 metres, obtained a weak (5 millisecond) anomaly on Line 6 North between 6+75 E and 7+25 E, directly above the mineralized skarn in DDH 89-9. A very weak trend extends from this point to the north along the axis of the mineralization. Assuming the depth extent of the gradient IP is 0.165 times the AB spacing, the known ore is mainly below the focal point of this gradient block and would not produce a significant response. Because of the close proximity of the ocean to the Little Billie mineralization, it was not possible to increase the AB spacing sufficiently to focus on the mineralization.

Extending from the anomaly on Line 6 N directly over the mineralization, the chargeability increases in intensity along an arcuate trace to the south and east. The chargeability plan (figure 21), clearly shows four strongly anomalous zones developed along a 500 metre trend. The resistivity plan (Figure 22), defines this trend as a distinct resistivity low developed at the southern flank of a resistivity high perhaps indicative of the Little Billie quartz diorite.

The magnetic plan (Figure 23), also defines the Little Billie stock as a magnetic high coincident to the resistivity high. A significant portion of the magnetics are caused by magnetite alteration developed along the margin of the quartz diorite and within a small copper-rich, magnetite skarn pod located in DDH 79-1 (Figure 19). In comparing the chargeability plan to the magnetic and resistivity plans, the chargeability anomaly is clearly developed along the indicated contact of the Little Billie Stock.

A Gradient IP depth profile along Line 6 N (Figure 24), suggests the chargeability anomaly is a vertical feature, attenuating to depth and to surface, along the margin of a steeply dipping resistivity high indicative of the quartz diorite (Figure 25).



VANANDA GOLD LTD.

TEXADA PROJECT

LITTLE BILLIE GRID

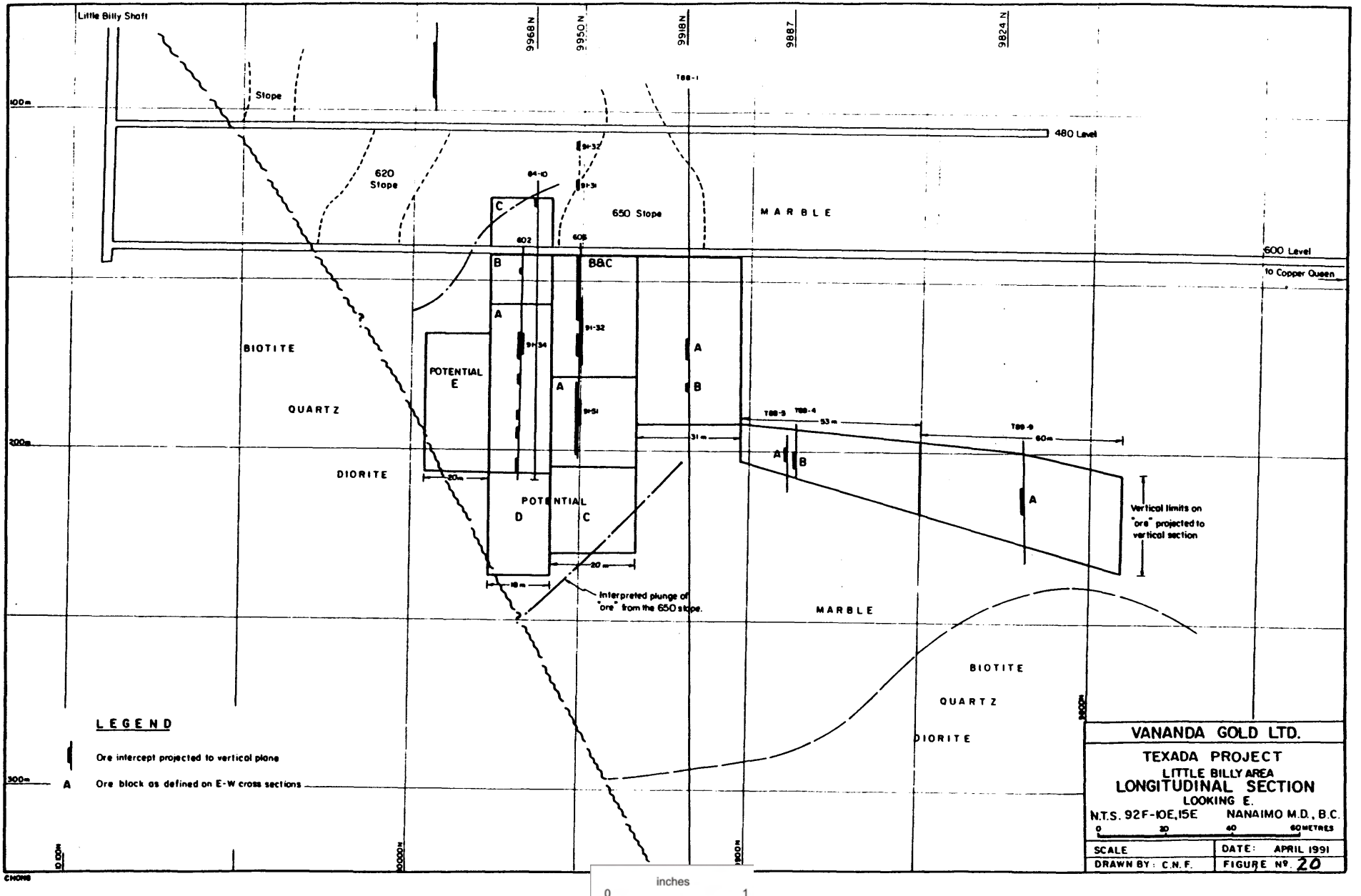
COMPILATION

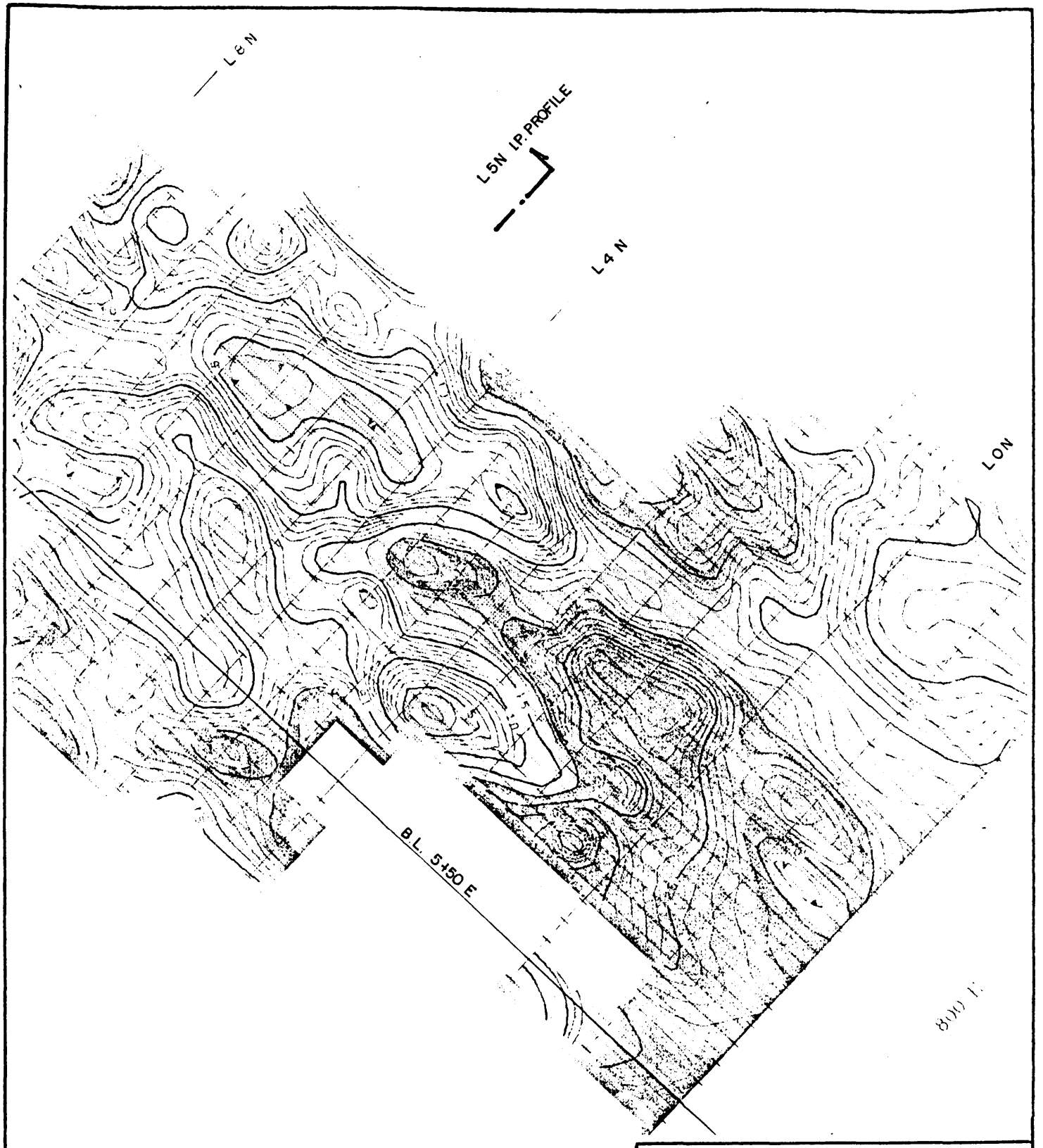
N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 50 100 150 300 Metres

SCALE 1 : 5,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 19

CHONG





VANANDA GOLD LTD.

TEXADA PROJECT

LITTLE BILLIE GRID

I. P. CHARGEABILITY

N.T.S. 92F-10E, 15E NANAIMO M.D., B.C.

0 50 100 150 300 Metres

SCALE 1 : 5,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 21

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centimetres

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BRITISH COLUMBIA GEOLOGICAL SURVEY

CHONG

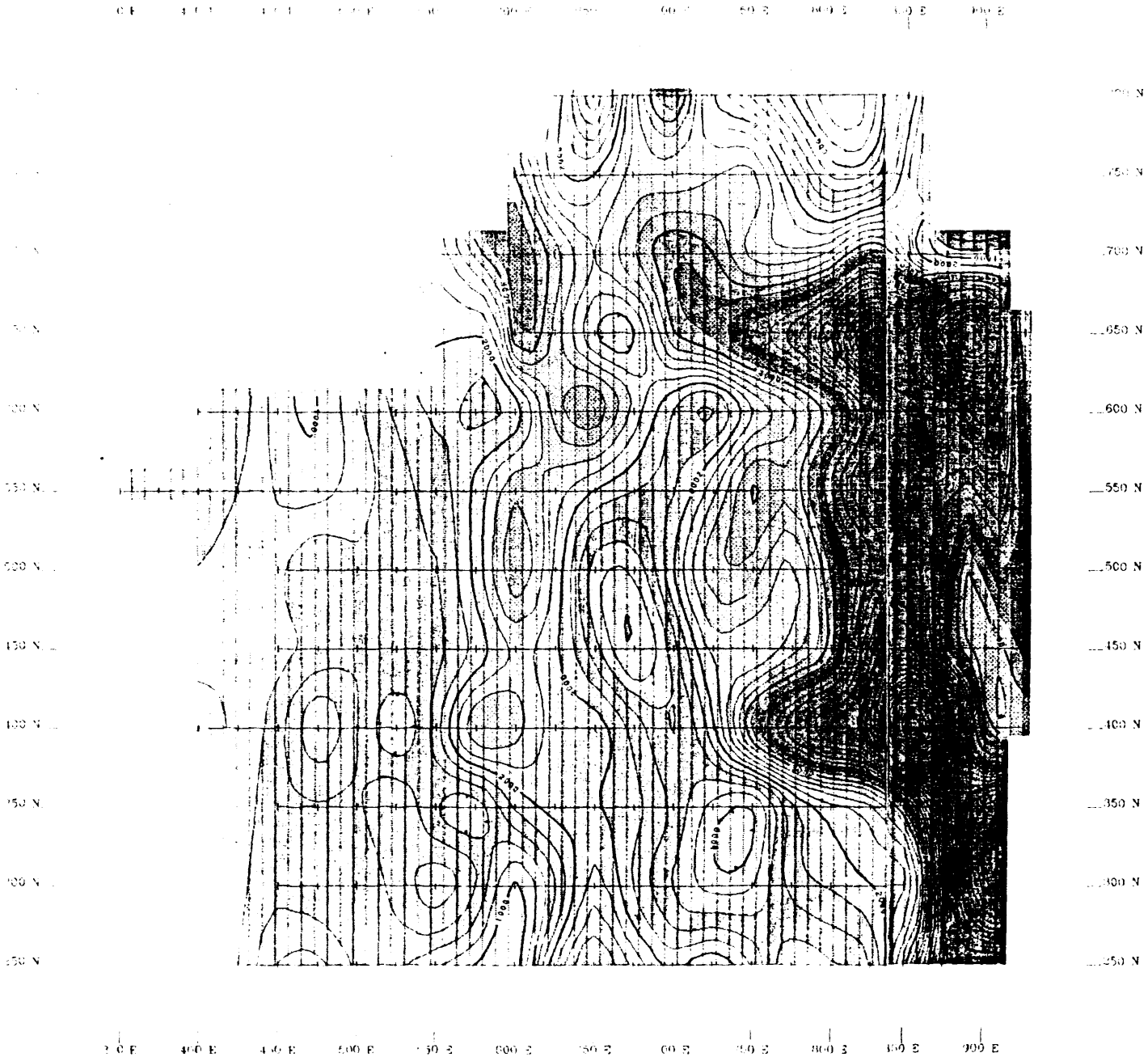
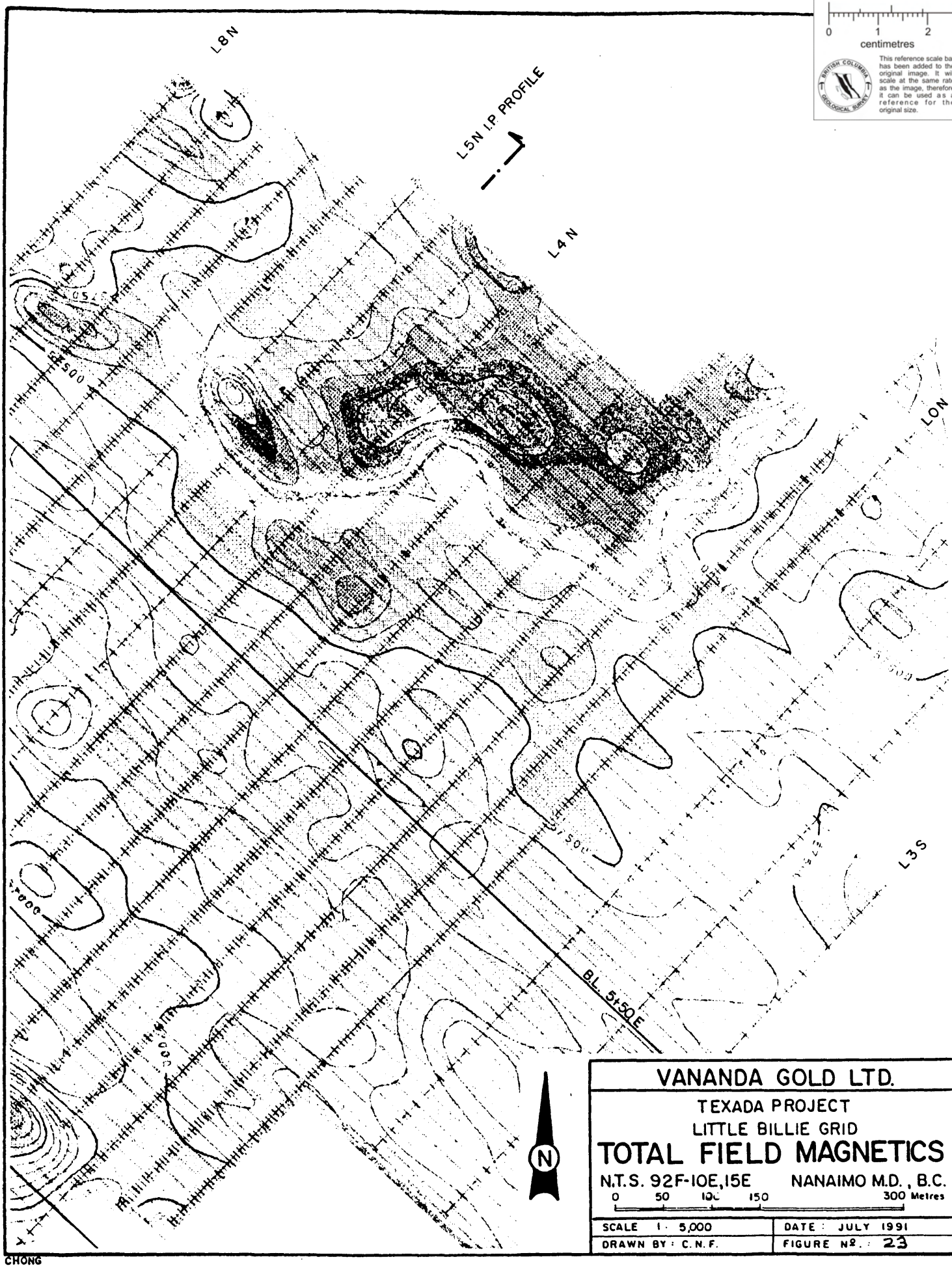


FIG. 22

VANANDA GOLD COMPANY

LITTLE BILLIE, RESISTIVITY PLAN
Gradient Array, AB = 1125 m , MN = 50 m

contour interval 200 ohm-m
IRIS Instruments



VANANDA GOLD LTD.

TEXADA PROJECT

LITTLE BILLIE GRID

TOTAL FIELD MAGNETICS

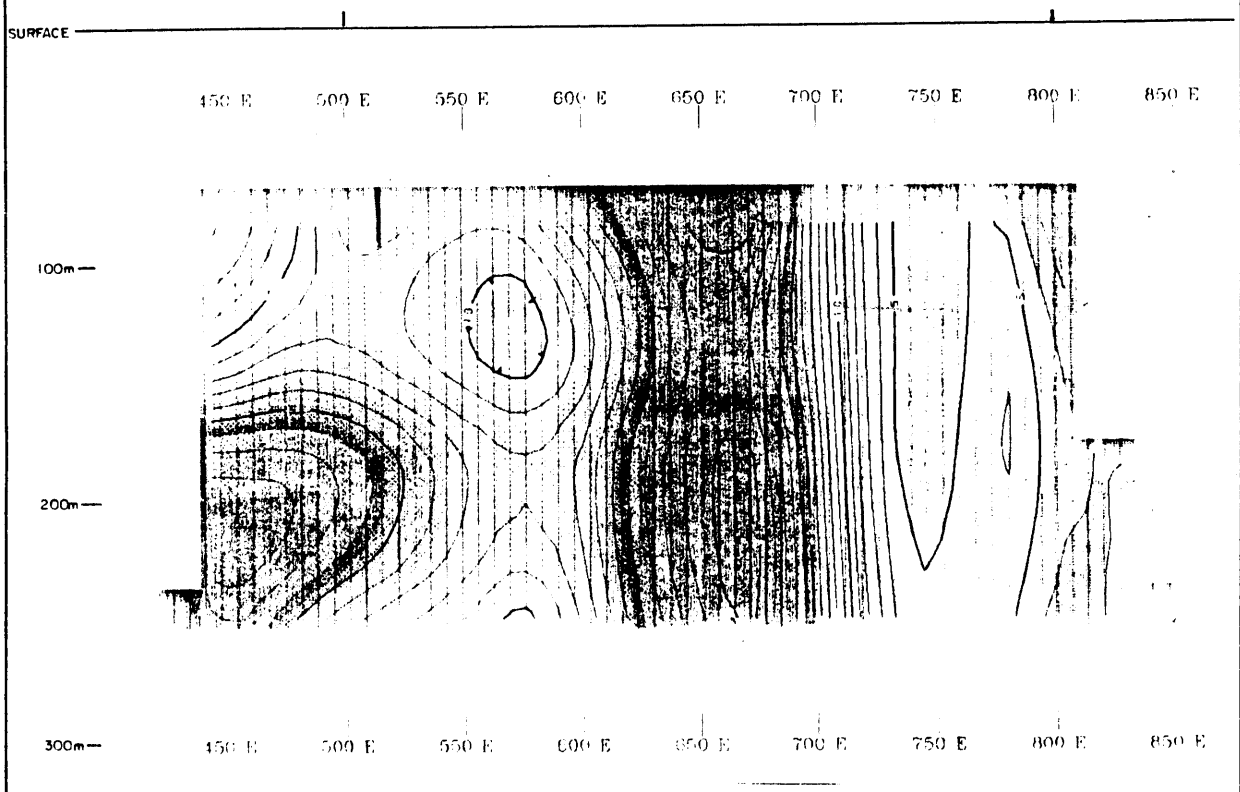
N.T.S. 92F-10E, 15E NANAIMO M.D., B.C.

0 50 100 150 300 Metres

SCALE 1 : 5,000	DATE : JULY 1991
DRAWN BY : C.N.F.	FIGURE Nº. : 23

CHONG

CHONG



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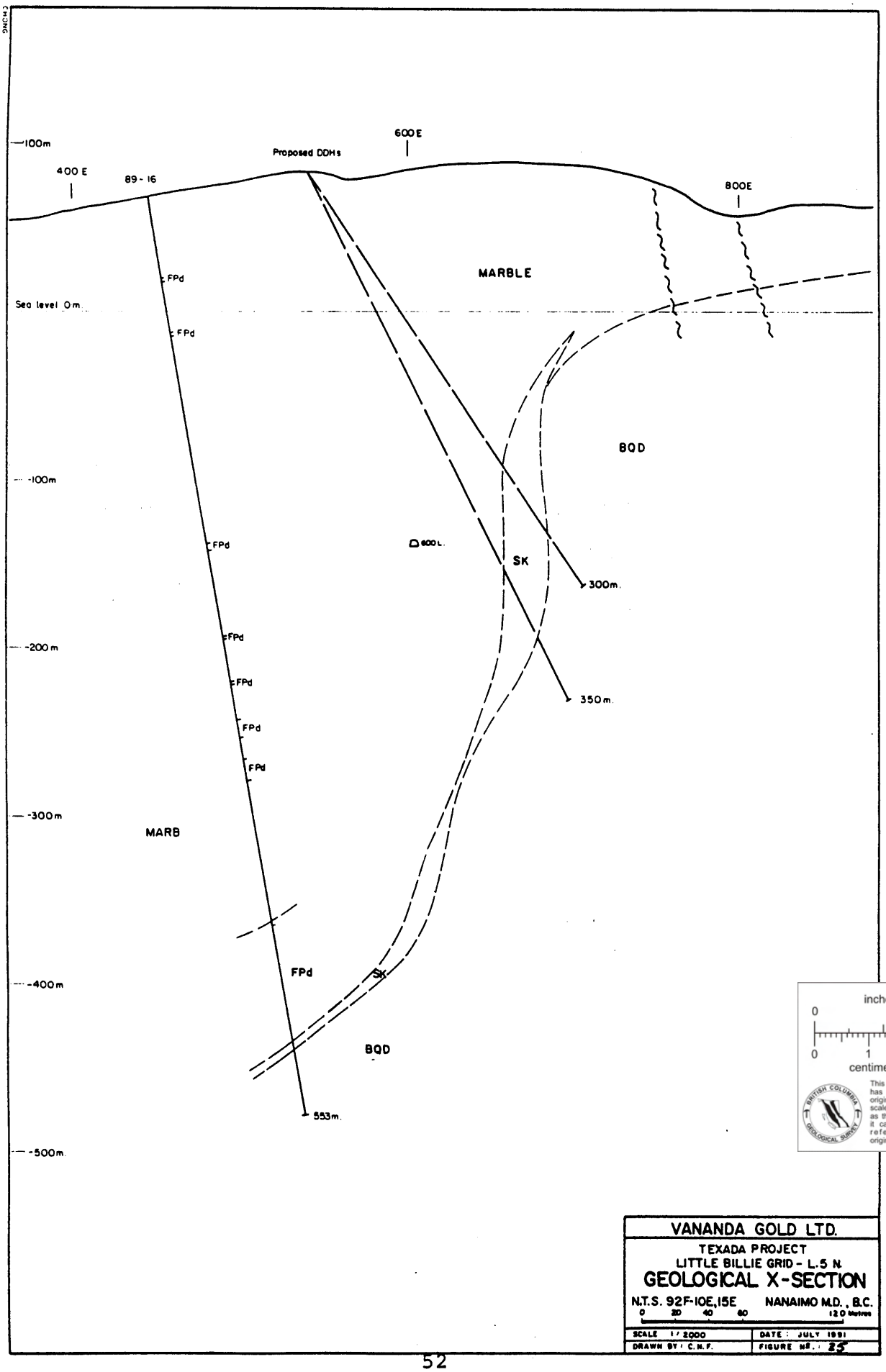
TEXADA PROJECT LITTLE BILLIE GRID - L.5N.	
GRADIENT I.P. DEPTH PROFILE	
N.T.S. 92F-10E,15E NANAIMO M.D., B.C. 0 20 40 60 120 Metres	
SCALE 1:2000	DATE : JULY 1991
DRAWN BY : C.H.F.	FIGURE NR. : 24



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VANANDA GOLD LTD.

TEXADA PROJECT

LITTLE BILLIE GRID - L.5 N.

GEOLOGICAL X-SECTION

N.T.S. 92F-10E,15E NANAIMO M.D., B.C.

0 20 40 60 120 Metres

SCALE 1/2000	DATE: JULY 1991
DRAWN BY: C.N.F.	FIGURE NO.: 25

9.0 Conclusions:

1. The induced polarization survey on the Eagle grid has located a 1,000 metre by 600 metre chargeability anomaly coincident to and flanking the Northwest Diorite. A depth profile across the anomaly indicates the chargeability source is located along the projected marble, basalt contact approximately 250 metres below surface and the western contact of the diorite and marble. The volcanic, marble contact was the principal geologic control for the copper-rich skarn ores in the adjoining Texada mines and the diorite, marble contact has skarn development with disseminated chalcopyrite, pyrite and magnetite mineralization at surface and in drill holes.

2. Also on the Eagle grid, four chargeability anomalies in areas of low magnetic relief could be indicative of some massive pyrite, sphalerite rich manto and chimney type deposits. These anomalies are 200 to 400 metres in strike length, 50 to 100 metres in width with possible thickness of ten to fifteen metres. A massive pyrite, sphalerite rich manto in the limestone quarry immediately west of the grid assayed 0.23 ounces gold per ton along a 17 foot, horizontal chip sample (Forster, 1988).

3. On the Sandy grid, gradient depth profiling of the 700 metre long by 500 metre wide chargeability anomaly located between lines 12 N and 20 N, west of the base line, indicates the source is approximately 350 metres below surface. The Lake mine, 500 metres south of line 16 N, demonstrates geologically that sulphide mineralization could exist below the Freeport diamond drill holes. Ground magnetics also indicate that said mineralization would be non-magnetic pyrite and/or chalcopyrite, unlike the magnetite, pyrrhotite mineralization in the Lake mine.

4. Freeport's drilling and trenching on the Sandy and Eagle grids located significant gold mineralization in pyrite, chalcopyrite mineralization along the Lake and Holly fault structures.

5. At the Little Billie mine the 1991 diamond drilling located copper, gold skarn mineralization with significantly higher grades than the resource estimated by Peatfield. The 1991 gradient array IP surveys appear to correlate with the known copper, gold skarns. As such, the chargeability anomaly indicates a possible 500 metre strike extension of this mineralization. A gradient array depth profile on Line 6 N also shows the chargeability anomaly to be steeply dipping, coincident to a resistivity low and flanking a resistivity and magnetic high indicative of the Little Billie quartz diorite.

10.0 Recommendations:

10.1 Phase I:

Geophysics:

1. Eagle Grid: The gradient IP coverage should be expanded to cover Ideal Cement's quarry and extended to complete the northern end of the grid over the Lucky Jack showing. At least two additional gradient IP depth sections should be done.

2. Sandy Grid: Line 18 N should be profiled with the gradient IP to locate the northern extension of the IP anomaly with respect to DDH's 89-26 & 27. It is possible that 89-26 could be deepened to test the chargeability anomaly. Additionally down hole EM and IP should be completed on DDH 89-27 to test for disseminated and/or semi-massive sulphides in the fault zone located immediately west of the drill hole, at the bottom volcanic contact.

3. Little Billie: Additional gradient profiles over the chargeability high extending from the known mineralization should be completed to further control future diamond drilling. Several of these lines should be extended to the southwest (grid west) to profile the Florence and Security areas. Down-hole IP and EM should also be completed on drill holes 89-8 & 12 to test for possible sulphide zones that could have been near misses and as a final test of the large IP feature southeast of the Copper Queen.

4. Down hole EM and IP should be done on all holes recommended for Phase I drilling.

Diamond Drilling:

1. Eagle Grid: 4 drill holes totalling 1,400 metres (4,600 feet) are proposed to test the four principal chargeability anomalies on Line 7 N.

2. Manto Targets: At least one 250 metre (800 foot) hole to test each of the four IP chargeability highs is required.

3. Sandy Grid: 3 drill holes totalling 1,250 metres (4,100 feet) to test the three chargeability highs on the Line 16 N profile and at least one 400 metre hole to test the IP anomaly west of the DDH 89-26 & 27 drill holes, 230 metres north of Line 16 N.

4. Little Billie: Drill 5 sections with 2 holes per section to test the southeasterly trend of the IP anomaly. Approximately 500 metres per section for a total of 2,500 metres (8,000 feet).

10.2 Phase I Budget:

Sandy and Eagle:

Geophysics: 15 days @ $1,500	$22,500
Diamond Drilling: 4,050 m (13,500') @ $65/m	265,000
Assay 10,000	
Roads and sites:	5,000
Geological supervision and field support:	50,000
Totals:	352,500

Little Billie:

Geophysics: 10 days @ $1500/ day	$15,000
Diamond Drilling: 2500 m @ $65/m	162,500
Assays:	5,000
Roads and sites:	2,500
Geological and field support:	25,000
Totals:	$210,000
Contingency @ 10%	50,000
Grand Total:	**$612,500**

10.3 Phase II:

Geophysics:

Assuming the Phase I drilling proves the current geophysical approach to this geological situation is reasonably accurate in locating economic sulphide mineralization, the remaining lines on the Eagle and Sandy grids should be profiled. Broader current electrode spreads may help to look deeper into the mineralizing system. North south lines should be run to provide possible plunge information on the sulphide zones. The continuation of the IP depth profiles would greatly facilitate ensuing Phase II drill program.

Diamond drilling:

To ultimately test and define the tonnage potential of the correlating geophysical and geological targets, assuming economic mineralization was encountered in phase I on all three grids, the anomalies will have to be drilled on 100 metre spaced sections for the Eagle and Sandy grid anomalies and 50 metre sections for the Little Billie grid anomaly. Drill hole spacing on the individual sections should be 100 metres. However for a Phase II program this would prove to be a significant expense, therefore it is recommended that initially the anomalies be drilled off on 200 metre sections to determine their ultimate potential. On the Little Billie anomaly, four additional sections to in fill the Phase I drilling would be warranted assuming positive results in the Phase I work.

Eagle Grid:

5 sections with 4 holes per section:	7,000 m

Mantos: four targets:

1 section per manto with 3 holes per section:	3,000 m

Sandy Grid:

3 sections with 5 holes per section:	5,200 m

Little Billie:

4 sections with 3 holes per section:	3,600 m
Total Drilling:	18,800 m

11.0 Statement of Qualifications

Grant A. Hendrickson

- B. Science, University of British Columbia, Canada 1971, Geophysics options.

- For the past 20 years, I have been actively involved in mineral exploration projects throughout Canada, the United States, Europe and Central and South America.

- Registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Canada.

- Registered as a Professional Geophysicist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, Canada.

- Active member of the Society of Exploration Geophysicists, European Association of Exploration Geophysicists and the British Columbia Geophysical Society.

- I have no financial interest, either directly or indirectly, in the properties or securities of Vananda Gold Ltd.

Dated at Delta, British Columbia, Canada, this 5 day of Nov, 1991.

G. Hendrickson

Grant A. Hendrickson

10.4 Phase II Budget:

Geophysics:45 days @ $1,500	$68,000
Diamond drilling: 18,800 m @ $65 / m	1,222,000
Assay:	50,000
Roads and Sites:	20,000
Geological supervision and field support:	100,000
Totals:	**$1,500,000**

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APPENDIX I

VANANDA GOLD LTD.

Property Holdings

APPENDIX I

PROPERTY HOLDINGS

Mining Leases

Cinnabar
Alladin
Vananda

Crown Grants

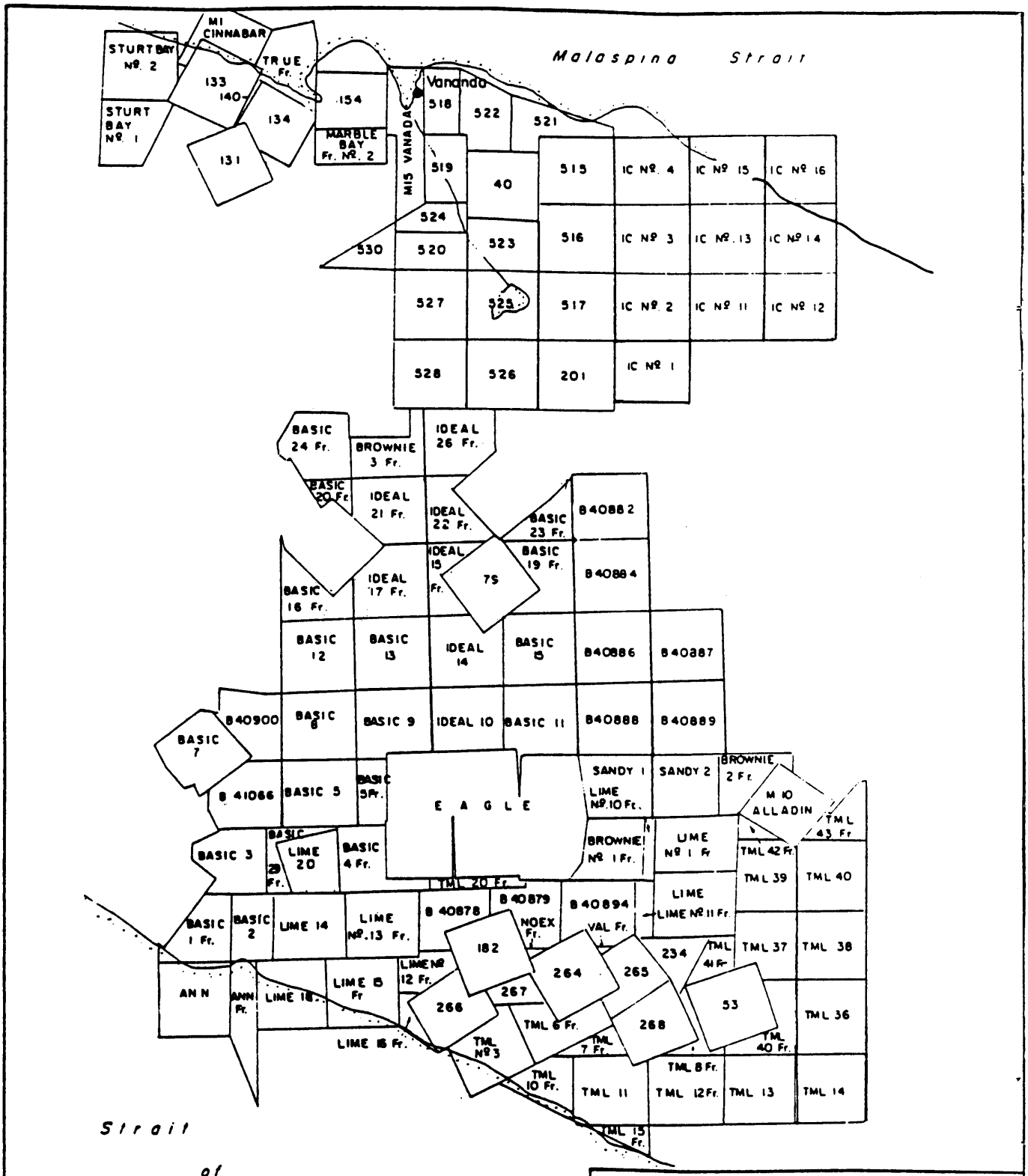
Copper Queen
Eastgate
Lucky Jack
Volunteer
Europe
Great Copper Chief
Toothpick FR
Marble Bay
Cameron
Cornell
Goodall FR
Leroi
Boulder Nest
Jack North
Yellow Kid
L.M.C.
McLeod #3
McLeod #4
McLeod #5
McLeod #6
McLeod #7
McLeod #8
McLeod #1
McLeod #2 FR
Lap #1 FR
Lap #2 FR
Lap #3 FR
Lap #4 FR
Lap #5
Lap #6
Lap #8
Eagle
Eagle No. 1
Eagle No. 2
Eagle No. 3
Eagle No. 4
Eagle No. 5
Eagle No. 6

Claims

BASIC 29 Fr.
Brownie No. 1 Fr.
Brownie #2 Fr.
Brownie #3 Fr.
B-40878
B-40879
B-40882
B-40884
B-40886
B-40887
B-40888
B-40889
B. 41066
B. 40900
B. 40894
Lime
Lime No. 1 Fr.
T.M.L. No. 3
Lime No. 10 Fr.
Lime No. 11 Fr.
Lime No. 12 Fr.
Lime No. 13 Fr.
Lime 14
Lime 15 Fr
Lime 16 Fr
T.M.L. #6 Fr.
T.M.L. #7 Fr.
T.M.L. #8 Fr.
T.M.L. #9 Fr.
T.M.L. #10 Fr.
T.M.L. #11
T.M.L. #12 Fr.
T.M.L. #13
T.M.L. #14
T.M.L. #15 Fr.
TML 36
TML 37
TML 38
TML 39
TML 40
T.M.L. #41 Fr.
T.M.L. #42 Fr.
T.M.L. #43 Fr.
Lime #18
Lime #20

Claims Cont'd

Ann
Ann Fr.
True Fr.
IC No. 1
IC No. 2
IC No. 3
IC No. 4
I.C. No. 11
I.C. No. 12
I.C. No. 13
I.C. No. 14
I.C. No. 15
I.C. No. 16
MARBLE BAY FRACTION No. 2* (* base metals rights only)
STURT BAY NO. 1
STURT BAY NO. 2
VAL Fr
NOEX Fr
Basic #1 Fr.
Basic #2
Basic #3
Basic #4 Fr.
Basic #5
Basic #6 Fr.
Basic #7
Basic #8
Basic #9
Basic #11
Basic #12
Basic #13
Basic #15
Basic #16 Fr.
Basic #19 Fr.
Basic #20 Fr.
Basic #23 Fr.
Basic #24 Fr.
IDEAL 10
IDEAL 14
IDEAL 17 Fr.
IDEAL 18 Fr.
IDEAL 21 Fr.
IDEAL 22 Fr.
IDEAL 26 Fr.
TML 20 FR.
Marble Bay Fraction No. 1
Sandy 1
Sandy 2


Malaspina Strait
MI CINNABAR
STURT BAY Nº. 2
TRUE Fr.
133
140
154
Vananda
518
522
521
STURT BAY Nº. 1
134
MARBLE BAY Fr. Nº. 2
131
MIS VANADA
519
40
515
IC Nº. 4
IC Nº 15
IC Nº 16
524
530
520
523
516
IC Nº. 3
IC Nº. 13
IC Nº 14
527
525
517
IC Nº. 2
IC Nº 11
IC Nº 12
528
526
201
IC Nº 1
BASIC 24 Fr.
BROWNIE 3 Fr.
IDEAL 26 Fr.
BASIC 20 Fr.
IDEAL 21 Fr.
IDEAL 22 Fr.
BASIC 23 Fr.
B40882
IDEAL 15 Fr.
BASIC 19 Fr.
B40884
BASIC 16 Fr.
IDEAL 17 Fr.
75
BASIC 12
BASIC 13
IDEAL 14
BASIC 15
B40886
B40887
B40900
BASIC 8
BASIC 9
IDEAL 10
BASIC 11
B40888
B40889
BASIC 7
B 41066
BASIC 5
BASIC 5Fr.
E A G L E
SANDY 1
LIME Nº.10 Fr.
SANDY 2
BROWNIE 2 Fr.
M 10 ALLADIN
TML 43 Fr
BASIC 3
BASIC LIME 20 Fr.
BASIC 4 Fr.
BROWNIE Nº 1 Fr.
LIME Nº 1 Fr
TML 42 Fr.
TML 39
TML 40
TML 20 Fr.
BASIC 1 Fr.
BASIC 2
LIME 14
LIME Nº.13 Fr.
B 40878
B40879
NOEX Fr.
B40894
VAL Fr.
LIME Nº 11 Fr.
182
264
265
234
TML 41 Fr
TML 37
TML 38
ANN
ANN Fr.
LIME 16
LIME 15 Fr
LIME Nº 12 Fr.
266
267
268
53
TML 6 Fr.
TML 7 Fr.
TML 40 Fr.
TML 36
LIME 15 Fr.
TML Nº 3
TML 8 Fr.
TML 10 Fr.
TML 11
TML 12 Fr.
TML 13
TML 14
TML 15 Fr.
Strait of Georgia
N
inches
0
1
0
1
2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
FREEPORT McMoRan GOLD CO (Canada) LTD.
TEXADA PROJECT
CLAIM MAP
N.T.S. 92F-10E,15E
NANAIMO M.D., B.C.
0
1
2 KM
SCALE AS SHOWN
DATE MARCH 1969
DRAWN BY: C.N.F.
FIGURE Nº 2

CHONG

APPENDIX II

Albanian Case History

Geophysical Prospecting 37, 975–991, 1989

ACHIEVEMENTS IN COPPER SULPHIDE EXPLORATION IN ALBANIA WITH IP AND EM METHODS[1]

L. LANGORE[2], P. ALIKAJ[3] and D. GJOVREKU[2]

ABSTRACT

LANGORE, L., ALIKAJ, P. and GJOVREKU, D. 1989. Achievements in copper sulphide exploration in Albania with IP and EM methods. *Geophysical Prospecting* 37, 975–991.

The copper sulphide exploration programme in Albania involves a number of geophysical methods. The most important ones are the Induced Polarization (IP) and the TURAM methods. This paper reports some recent achievements in increasing the depth of investigation and in discriminating sulphide ore textures by the IP, spectral IP and TURAM methods.

INTRODUCTION

Albania, a country in the Alpine ophiolitic belt, is rich in copper sulphide ore deposits. Many geophysical methods including IP, resistivity, SP, mise-à-la-masse, EM, gravity, magnetic and underground geophysical methods are used in Albania in the exploration for such ore deposits. Because of the geological environments and terrain conditions, the IP method plays a major role. The other methods mentioneed above provide additional information to make up for the disadvantages of IP investigation. Together with geological and geochemical surveys, they provide effective, integrated exploration surveys in the search for copper sulphide deposits. IP surveys are usually carried out with gradient arrays using electrode separations $AB = 600 - 1000$ m, $MN = 20 - 40$ m, and 100×20 m or 50×20 m survey grids.

We describe case histories of deep sulphide exploration by the IP method, some results of a time-domain spectral IP method for the discrimination of sulphide ore textures, and surface and drillhole TURAM surveys for massive copper sulphides.

[1] Received February 1988, revision accepted January 1989.

[2] Geophysical Enterprise, Tirana, Albania.

[3] Department of Geophysics, Faculty of Geology and Mines, Enver Hoxha University, Tirana, Albania.

The Induced Polarization Method

The IP method has been successfully used in the copper sulphide exploration in Albania since about 1963 (Lubonja and Frashëri 1965). The IP anomalies have been decisive in defining many copper ore deposits in the volcanogenic or volcano-sedimentary formations (Avxhiu 1979; Frashëri *et al.* 1986). But during the last decade, as in many other countries, two important problems of IP research have emerged: greater depth of exploration and attempts to distinguish textures of various sulphide ores.

Deeper copper exploration

The IP anomalies are related to shallow sulphide ore deposits, usually down to 100 m and occasionally to about 200 m, whereas deeper exploration is required by the Geological Service. The limits to the depth of investigation in electrical methods, in addition to the dimensions of the mineral deposits, are connected with the transmitted power, sensitivity of the receiver and the signal-to-noise ratio.

Since 1981, when a new, more powerful IP technique was introduced, the depth of investigation for copper exploration has increased markedly. The high power of the transmitter and improved sensitivity and stability of the receiver (IPC-7/15 kW, IPR-10 A, Scintrex) have permitted the use of long gradient arrays or deep vertical electrical soundings of induced polarization (VES-IP) with maximum separations of $AB = 4400$ m, $MN = 200$ m (Lubonja *et al.* 1985). There has also been improvement in data processing and interpretation.

The follow-up measurements are often carried out with lines of deep VES-IP or gradient arrays with different separations, e.g. $AB = 200$, 400, 600, 1000, 1500 or 2000 m. Chargeability or resistivity responses for every separation are plotted at points located at the approximate depth of investigation H_i. The geological data are plotted on the same section and terrain corrections for proper location of responses are also carried out. This type of representation was called a "real section" by Alikaj (1981). It should not be taken as an exact electrical section of the underlying medium; rather it is a convenient schematic plot of results, which has proved successful in many geological environments.

The depth of investigation H_i for a given region is determined experimentally over a known geological cross-section (prospect-by-prospect). In our experience $H_i \approx (0.125\text{–}0.2)\ \overline{AB}$ in different geological environments; this is compatible with theoretical studies of homogeneous media (Roy and Apparao 1971) or of heterogeneous media (Frashëri 1987).

The following two case histories of deep IP exploration for copper sulphide ores come from the Central Mirdita district.

The P 102 sulphide ore deposit. Figure 1 presents a cross-section of the P102 sulphide ore deposit in the Central Mirdita district. The ore bodies are located within a disseminated sulphide zone at about 300 m depth, on the south-east part of the cross-section (stations 100–130). The mineralized zone (pyrite 5–20%) occurs in the upper volcanogenic series, near the contact with the lower volcanogenic series.

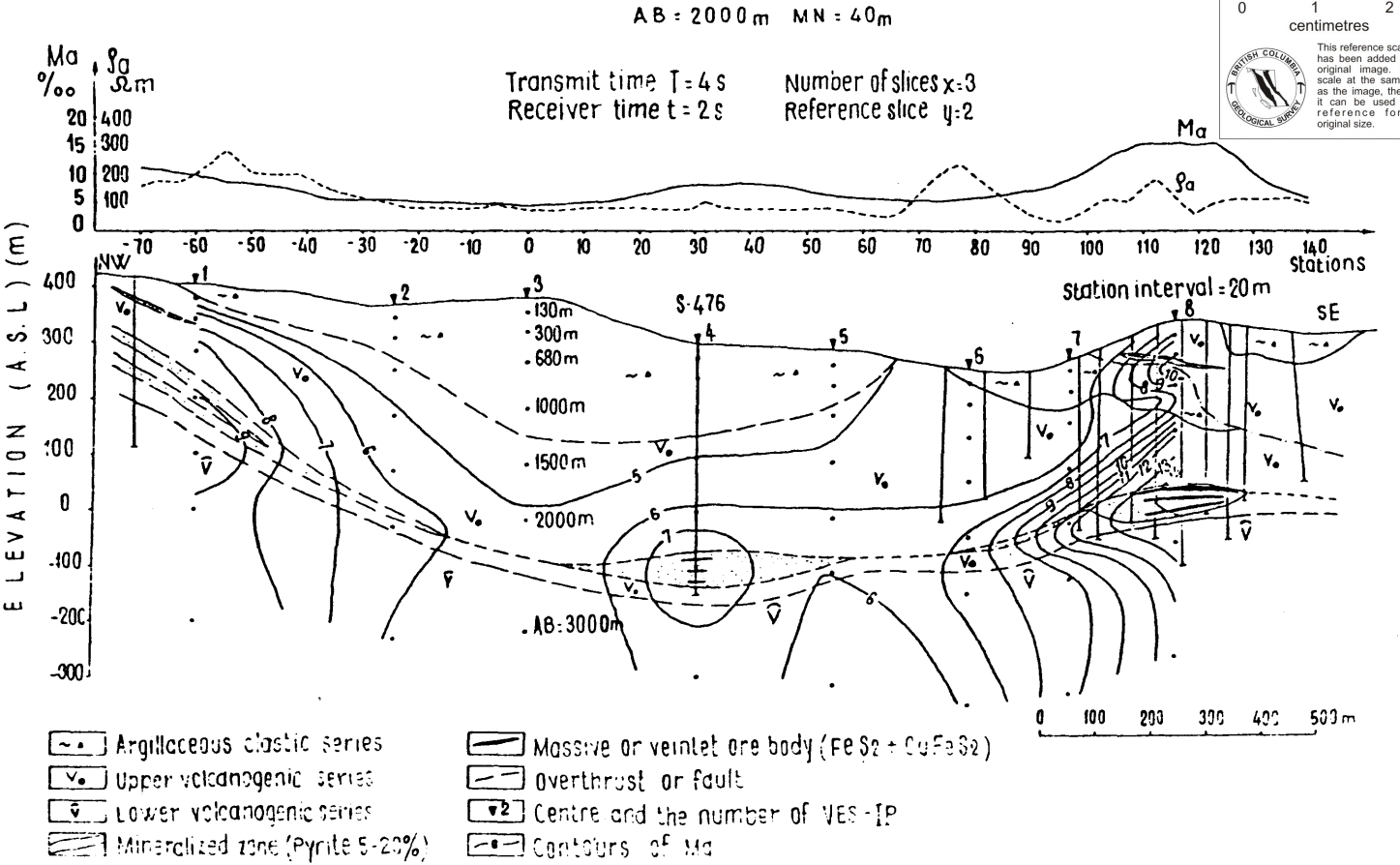


FIG. 1. Gradient array IP and ρ_a profiles and "real section" presentation of VES-IP chargeability over the P 102 sulphide ore deposit. Central Mirdita district.

Most of the upper part of the geological cross-section is covered by an argillaceous clastic series, 40–250 m thick. These sediments have a low electrical resistivity (30–80 Ωm) and present difficulties for IP measurements with low-power transmitters.

The ore bodies consist of pyrite and chalcopyrite of massive or veinlet texture. Between stations 116 and 126 a shallow (30–80 m depth) ore deposit occurs due to the overthrust of the volcanogenic rocks to the north-west. An IP survey using a gradient array with $AB = 2000$ m and $MN = 40$ m and a 20 m measurement interval was carried out. The transmitting time was $T = 4$ s, while the receiving time was $t = 2$ s. The number of slices (windows) of the decay curve was $x = 3$ and the reference slice was $y = 2$ (the middle one).

The IP survey profile contains three anomalous zones. The first one is related to the known ore deposits on the southeast part of the cross-section. Chargeability is rather high in magnitude ($M_a = 15$ mV/V or ‰) due to two levels of sulphides. The second zone ($M_a = 10.5$‰) lies on the north-west part of the cross-section (stations −70 to −40) and is related to the known weak disseminated sulphides. The third zone is centred between the stations 20 and 50 and its magnitude is $M_a = 8$‰ on a background of 4–5‰. The source of this anomaly was unknown. The low values of the resistivity parameter mainly reflect the thickness of argillaceous clastic sediments.

The follow-up of this cross-section was conducted by eight deep Schlumberger VES-IP with a maximum separation of $AB = 3000$ m. To plot the "real section", the approximate depth of investigation $H_i \approx 0.2\ \overline{AB}$ is determined over the known part of the ore deposit.

The "real section" shows a correlation between the shape of the chargeability contours and both levels of sulphides on the south-east part. The same feature was confirmed for the north-west part with known weak sulphides. Under the third anomalous zone of the IP gradient survey (between stations 20 and 50), a deep chargeability anomaly with $M_a = 8$‰ was obtained. This one was interpreted as related to a thick sulphide zone at an approximate depth of 375 m. The S-476 borehole, drilled to verify this anomaly, intersected a concentrated sulphide zone, about 60 m thick, precisely at a depth of 375 m. The sulphide content is very similar to that in the known ore deposit, but the texture is mainly disseminated and rarely veinlet.

The P 76 sulphide ore deposit. The cross-section in Fig. 2 presents the same geological environment as that in Fig. 1, but 1300 m south-west of the P 102 ore deposit. The known sulphide ore bodies occur within the disseminated zone between stations 116 and 154, at a depth of 220–280 m. The IP gradient anomaly, centred between stations 90 and 110, is due to both the most shallow part of the sulphide zone and the thinning out of the argillaceous clastic sediments in this sector. The chargeability is $M_a = 11$‰, on a background of 3–5‰.

The follow-up measurements (with six deep VES-IP) of this cross-section again showed a correlation between the shape of chargeability contours and the sulphide zone. Moreover, these contours present an interesting anomaly ($M_a = 9.5$‰) around stations 66–80 at a depth of 500–600 m. This one was not detected by the IP gradient survey because of the great depth of the zone.

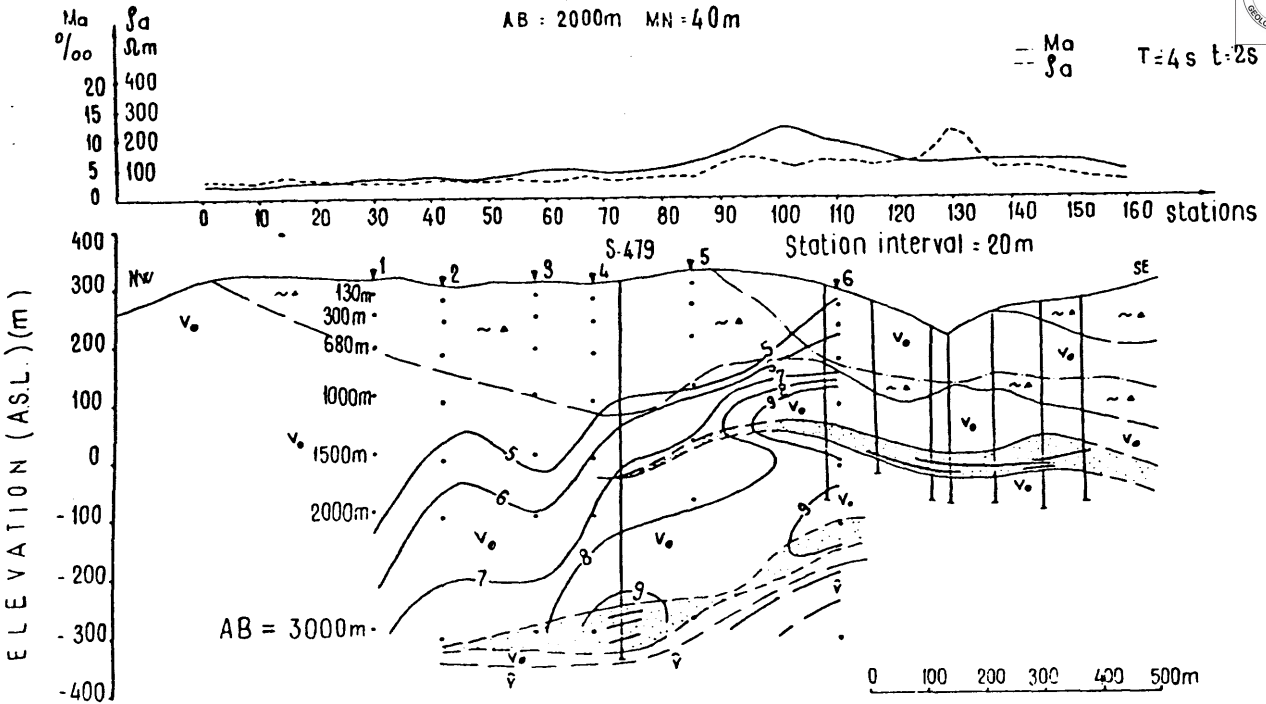


FIG. 2. Gradient array IP and ρ_a profiles and "real section" presentation of VES-IP chargeability over the P 76 sulphide ore deposit. Central Mirdita district.

A concentrated, thick sulphide zone at about 550 m depth was assumed as a source of this VES-IP anomaly. The S-479 borehole confirmed the sulphide zone at the depth of 555 m and found it to be about 80 m thick. Its texture is mainly disseminated but some massive and veinlet intervals are present.

Discrimination of sulphide textures

The second problem for the IP method is to discriminate between the textures of the massive or veinlet sulphide ores and the disseminated ores. Because of the frequent presence of sulphide grains scattered through volcanogenic rocks, the IP method can not discriminate the most interesting anomalies (Frashëri *et al.* 1986). In addition to other geophysical and geochemical methods that can help in this problem (Langore, Bektashi and Alikaj 1984; Gjovreku 1986), experiments with the time-domain spectral IP method have been carried out recently. The SCINTREX IPR-11 broadband time-domain IP receiver and special software, compiled by our specialists (Alikaj, Likaj and Kasapi 1986) according to Johnson's algorithm (1984), were used to derive Cole–Cole model parameters (m, τ, c), which are useful for distinguishing sulphide textures (Pelton *et al.* 1978; Hallof and Klein 1983).

As a first step, the spectral IP parameter were studied in laboratory conditions. More than 500 sulphide samples (pyrite and chalcopyrite) of disseminated, veinlet or massive textures, collected from all over Albania, were studied.

Sulphides, scattered as grains within the rocks and constituting up to some tens of percent of the total volume, are considered of 'disseminated' texture. Because the grains are isolated, such sulphides are not good electrical conductors.

The ore bodies constituting more than 80% sulphides are considered as having 'massive' texture; it is clear they are good electrical conductors.

Sulphides, occurring as veinlets through the rocks and constituting from about 20% up to 80% of the total volume are considered as 'veinlet' texture. Due to electrical connections between the veinlets, such sulphides are also good electrical conductors.

The CTU-2 system, with 2 s on–off pulses, was used as an IP transmitter for laboratory sample measurements. These pulses provided a suitable band for sulphide texture discrimination with regards to the time-constant parameter (τ), in the range 0.01–100 s. Setting receiving and transmitting times from 0.2 s up to 8 s, the band of τ in the master curves for IPR-11 increased to the range 0.001–400 s (Johnson 1984).

Figure 3 presents a diagram of the spectral IP parameters m and τ for massive and veinlet sulphide ores versus disseminated sulphides according to the laboratory sample investigation (Alikaj, Likaj and Kasapi 1986). The values of chargeability (spectral IP parameter m) are 340–870‰ for massive or veinlet texture samples and 10–820‰ for disseminated ones. The difference between both groups is only 2.5 times on average. With regard to the time-constant spectral parameter τ, these values are 30–100 s and 0.01–0.3 s, respectively. On average the difference between both groups is three decades and an interval of two decades (0.3–30 s) separates them without overlapping.

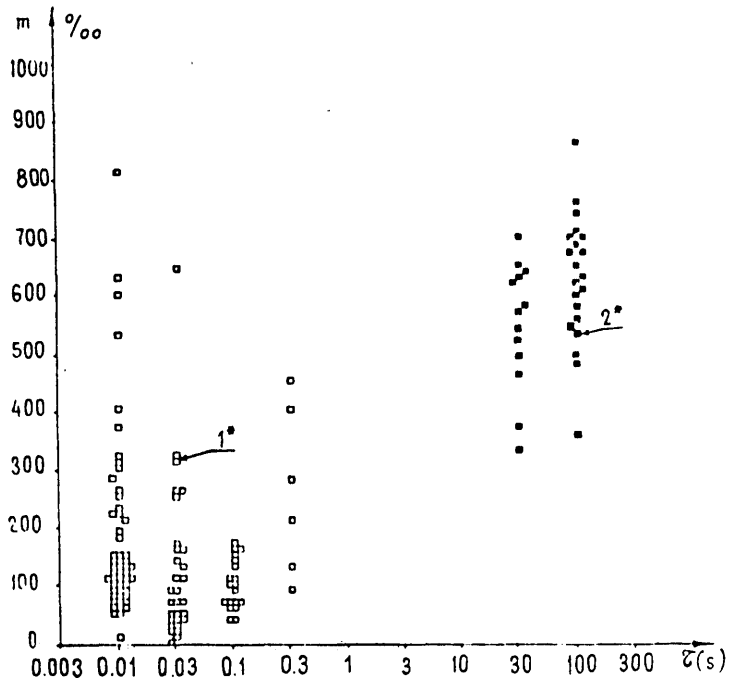


FIG. 3. Diagram showing massive or veinlet sulphide ore (■) versus disseminated sulphides (□) through m and τ spectral IP parameters according to the laboratory sample investigation. 1*, 2*: see Fig. 7 and Table 1.

The exponential spectral parameter c, related to the uniformity of the sulphide grain sizes, ranges between 0.1 and 0.3 for disseminated sulphides and between 0.3 and 0.5 for massive or veinlet ones.

In our laboratory investigation no difference was found between the various sulphides, i.e. pyrite and chalcopyrite, in the spectral IP parameters. In general, these results coincide with previous investigations carried out with the frequency-domain spectral IP method (Pelton *et al.* 1978; Hallof and Klein 1983).

It was impossible, however, to discriminate massive and veinlet sulphides by means of spectral IP parameters. Taking into account that Albania's copper sulphide deposits occur as both massive and veinlet sulphides, the spectral IP method may serve to filter out the IP anomalies caused by disseminated sulphides.

After the encouraging results of the laboratory investigation, a series of test surveys were made. Figure 4 presents a test survey of time-domain spectral IP method over a massive sulphide ore body (pyrite and chalcopyrite) within a disseminated sulphide zone, in the West Belt of the volcano-sedimentary series. An IPC-8/250 W transmitter with $T = t = 2$ s and a short gradient array (AB = 40 m, MN = 5 m) was used.

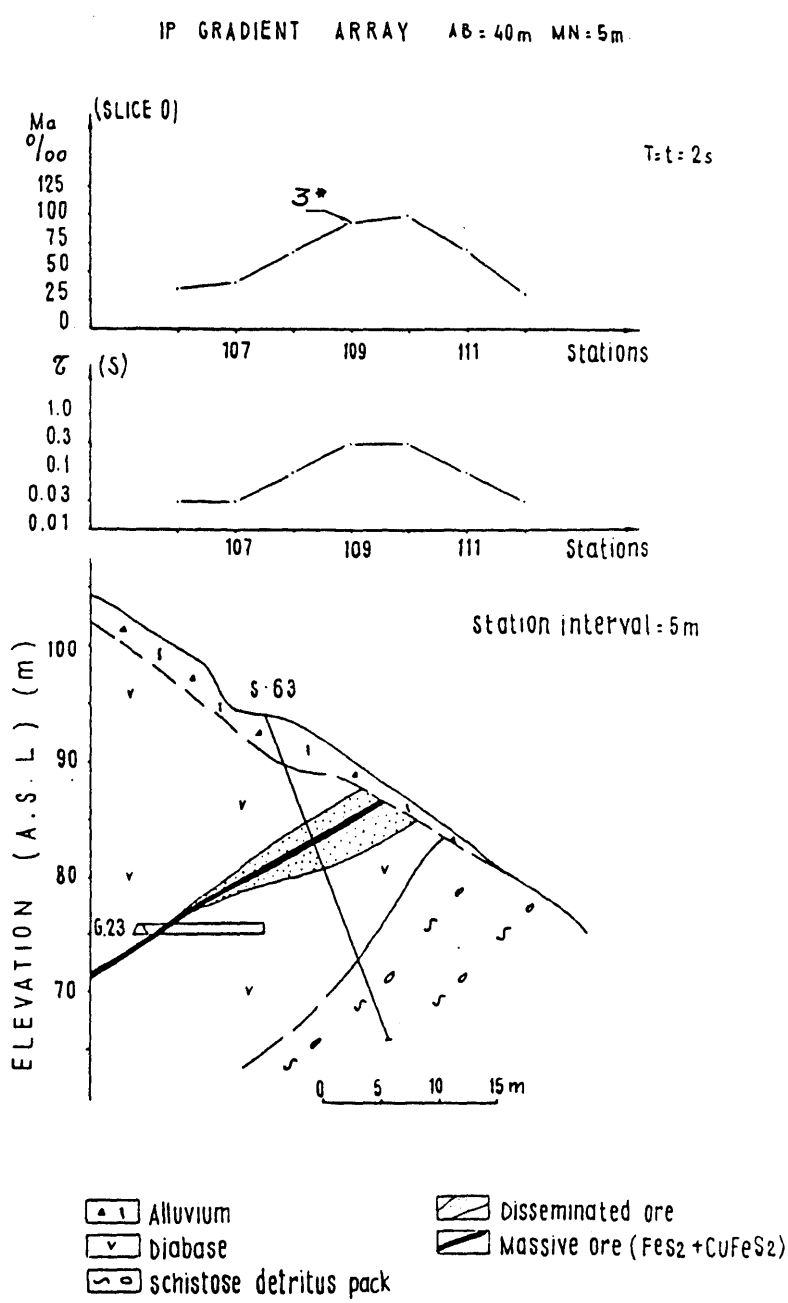
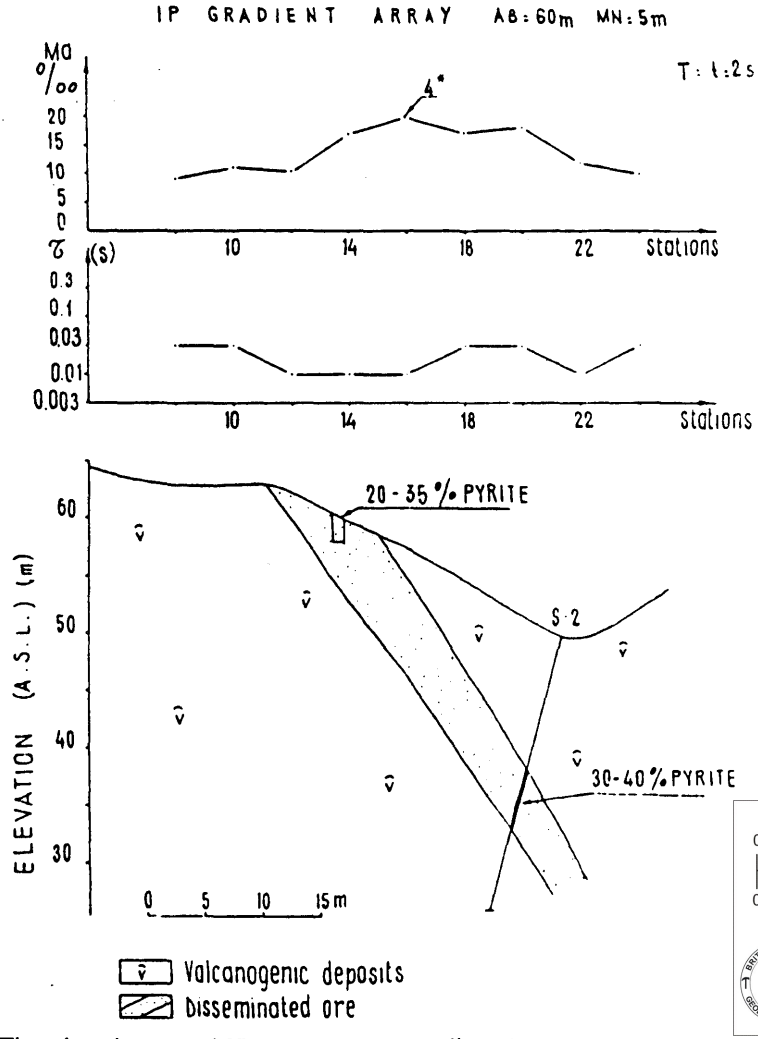


FIG. 4. Time-domain spectral IP test survey over a massive sulphide ore body in the West Belt of the volcano-sedimentary series. 3*: see Fig. 7 and Table 1.

The first chargeability profile M_a shows very high values (about 100‰) over the ore deposit, due to massive and disseminated sulphides. The time-constant τ profile shows a small anomaly with a magnitude of 0.3 s, on a background of 0.03 s. This low magnitude can be explained with the so-called "dilution factor" (Pelton *et al.* 1978), as the massive ore body is very thin (less than 1 m thick). However, the time-constant parameter is here a good indicator of the massive ore body.

Figure 5 presents the results of a test survey using time-domain spectral IP method over a disseminated sulphide zone in the volcanogenic rocks of the Central



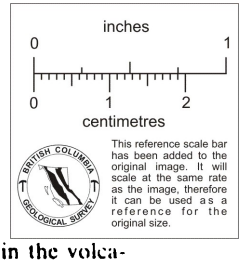


FIG. 5. Time-domain spectral IP test survey over a disseminated sulphide zone in the volcanogenic rocks of the Central Mirdita district. 4*: see Fig. 7 and Table 1.

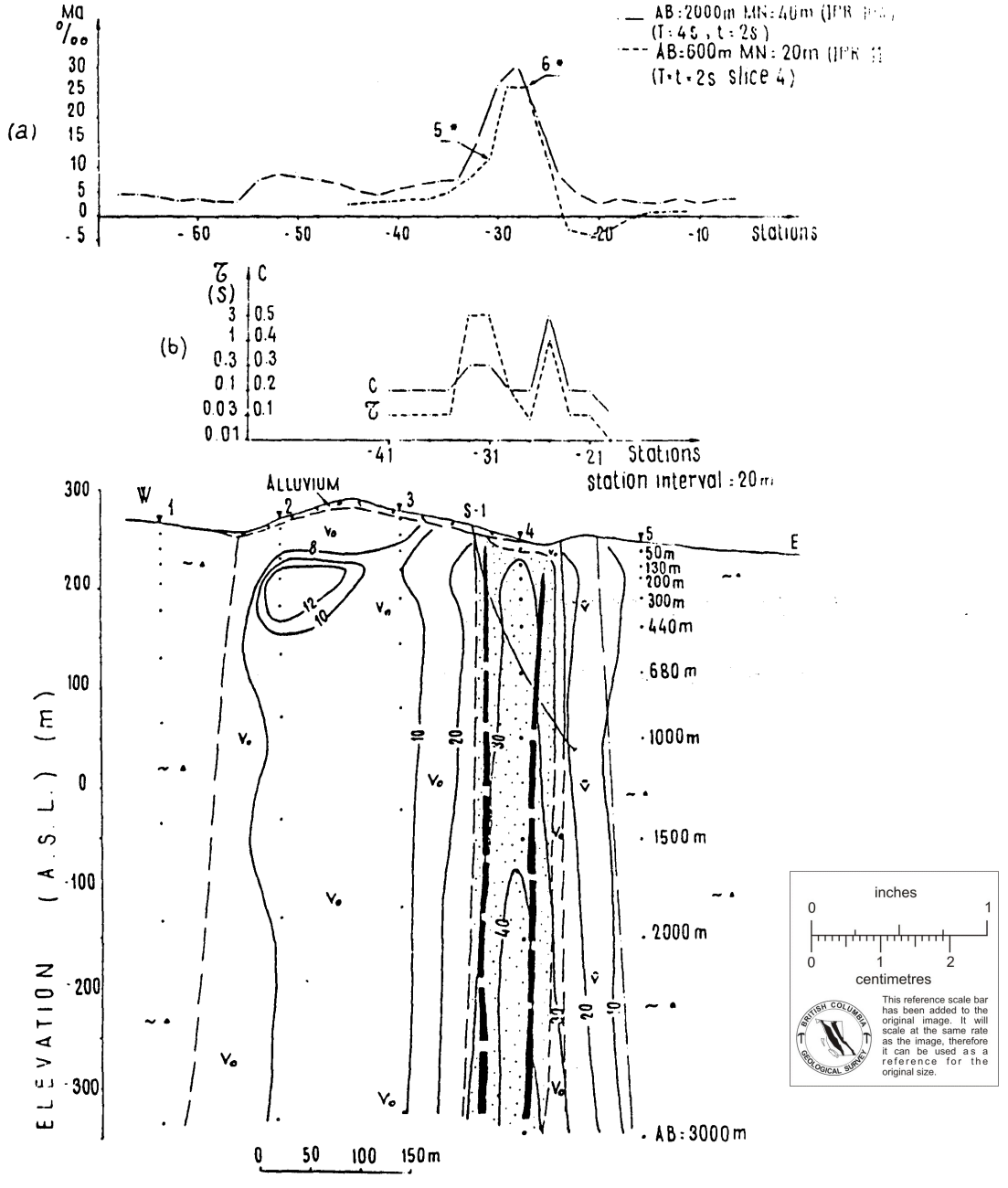


FIG. 6. Results of a geophysical field exploration in the Central Mirdita district. (a) IP profiles with gradient arrays. (b) Cole–Cole parameters as determined through time-domain IP with gradient array $AB = 600$ m, $MN = 20$ m. (c) "Real section" of VES-IP chargeability. 5*, 6*: see Fig. 7 and Table 1. Legend: see Fig. 1.

TABLE 1. Some IP measurements and their calculated spectral IP parameters carried out with a time-domain IPR-11 receiver. $T = t = 2$ s (see Figs 3–5 and 6).

No.	Fig.	Chargeability (‰) (or mV/V)										rms of the fit with master curves (%)	Spectral IP parameters		
		Slice 0 M_0	Slice 1 M_1	Slice 2 M_2	Slice 3 M_3	Slice 4 M_4	Slice 5 M_5	Slice 6 M_6	Slice 7 M_7	Slice 8 M_8	Slice 9 M_9		Chargeability m (‰)	Time constant τ (s)	Exponent C
1*	3	79.2	65.1	57.1	51.5	39.6	28.5	22.3	16.8	12.4	9.6	1.32	312.4	0.03	0.3
2*	3	136.0	121.9	112.7	105.3	88.9	71.3	60.5	50.1	41.0	34.8	0.96	538.0	100	0.3
3*	4	92.9	77.3	68.1	61.8	49.0	36.9	29.9	22.6	17.0	13.0	2.10	231.3	0.3	0.4
4*	5	19.8	16.7	14.7	13.4	10.7	8.0	6.5	5.1	3.9	3.2	1.00	206.5	0.01	0.1
5*	6	18.0	16.7	15.2	14.3	11.3	8.6	7.0	5.6	4.4	3.6	2.04	71.2	3	0.3
6*	6	48.6	41.8	37.0	33.5	26.3	19.3	15.5	12.1	9.2	7.5	0.55	268.3	0.03	0.2

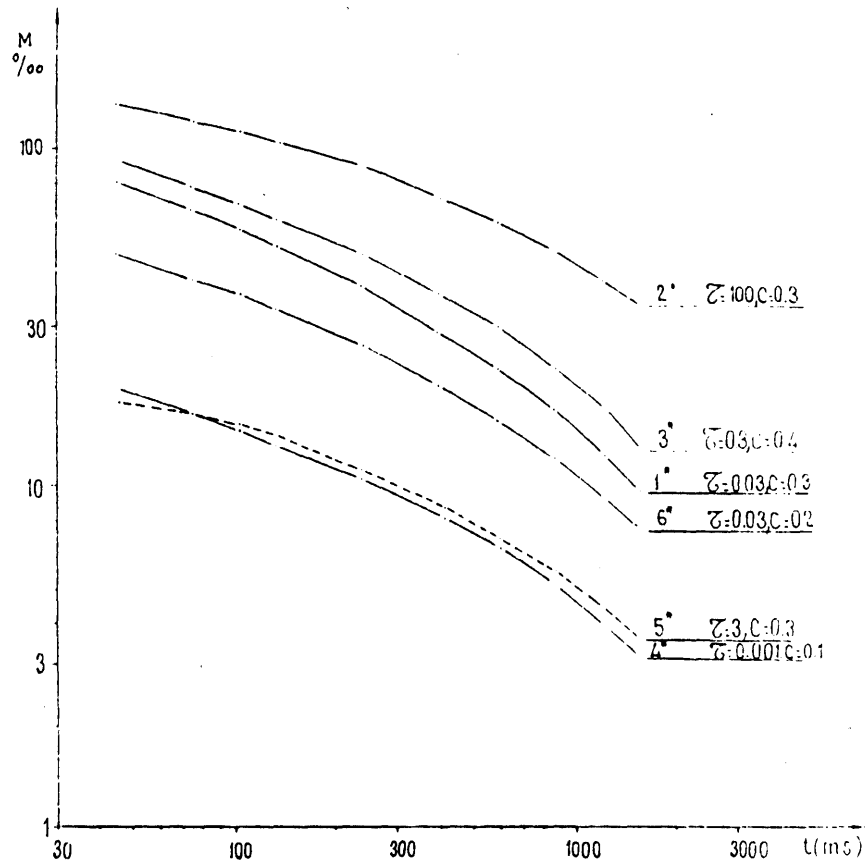


FIG. 7. Measured decay curves as indicated in Figs 3-6 and Table 1

Mirdita district. The measurements were carried out with the same technique as in the previous example. The profile of chargeability shows the presence of a concentrated suphide zone with a clear anomaly (up to M_a = 20‰ on a background of 10‰). The time-constant τ profile shows no anomaly because of the disseminated texture.

After the test surveys over the known sulphide deposits with different textures, an attempt with the time-domain spectral IP method was undertaken on an IP field exploration in the Central Mirdita district (Fig. 6). The geological environment is the same as that of Fig. 1, but the structure is different.

The IP gradient profile (AB = 2000 m, MN = 40 m, 20 m interval) gives a sharp chargeability anomaly, between stations −46 and −24, with a magnitude of M_a = 32‰, on a background of 3-5‰. The follow-up measurements with deep VES-IP, plotted on the "real section", shows the presence of a shallow concentrated sulphide zone, about 80 m thick, without surface outcrop. The dip of the zone was assumed

to be vertical and the length in the dip direction to be about 400 m. Such an interpretation was contrary to the generally accepted ideas of the geology of the region, according to which the sulphide zones were assumed to be almost horizontal (see Figs 1 and 2).

The spectral IP survey in this cross-section was carried out with an IPC-7/15 kW transmitter, for $T = t = 2$ s. A gradient array with $AB = 600$ m and MN = 20 m was used.

The time-constant τ profile presents anomalous values on both sides of the presumed mineralized zone (3 s and 1 s respectively), which coincide with the anomalous values of the exponent c profile ($c = 0.3$ and 0.5, on a background of 0.2 or 0,1). These anomalies were assumed to be related with concentrated sulphide belts on both sides of the mineralized zone.

Borehole S-1 verified the predicted mineralized zone according to the interpreted structure and confirmed the presence of two concentrated sulphide belts. The sulphide content in the disseminated ore is 10–20% while in the massive or veinlet belts it varies from 40% to 90%.

Table 1 presents some IP measurements carried out with an IPR-11 receiver (see Figs 3–5 and 6) as well as the respective calculated spectral IP parameters. Figure 7 presents the same measurements plotted as decay curves on a bilogarithmic scale.

To provide confident spectral IP parameters every measurement, consisting of ten points on the decay curve, is repeated two or three times and the best one is considered (i.e. with the least rms deviation of fit with master curves).

The Turam EM Method

The Turam EM method has been used in Albania since 1981. Measurements are carried out with an SE-77/F receiver and a TSQ-2 M/0.5 kW transmitter (Scintrex). In Albania this method is primarily used as a follow-up method for IP surveys as well as for massive sulphide exploration in areas of high magnetotelluric activity industrial noise. The borehole Turam variant method has also been used.

The results of geophysical field exploration in new sulphide deposits in volcanogenic rocks of the North Mirdita district are shown in Fig. 8. Respective electrical parameters (determined through laboratory sample measurements) are shown in Table 2. It is obvious that the massive ore body is characterized by a high contrast

Table 2. Electrical prameters of the North Mirdita district according to laboratory sample measurements.

Sample	Conductivity (δ) S/m	Chargeability (η) %
Compact diabase	0.001 0.002	0.3 1.7
Altered diabase with limonite	0.01 0.005	0.6 7.0
Disseminated sulphide zone	0.013 0.025	20 40
Massive ore body (FeS_2 + $CuFeS_2$)	0.08 12.0	20 30

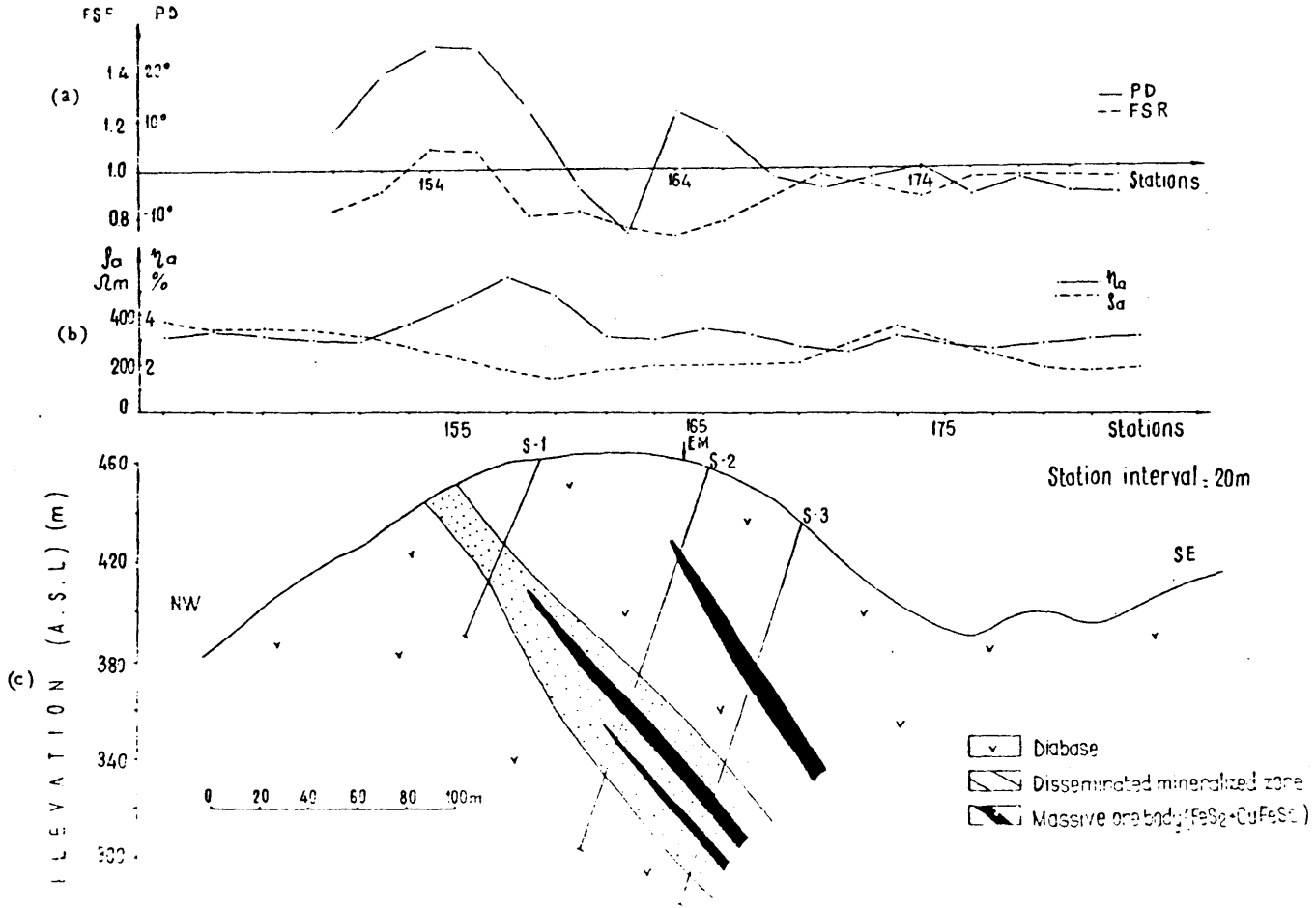


FIG. 8. Results of a geophysical field exploration in the North Mirdita district. (a) TURAM profiles. (b) IP and ρ_a profiles with gradient array $AB = 800$ m, $MN = 40$ m. (c) Geological cross-section.

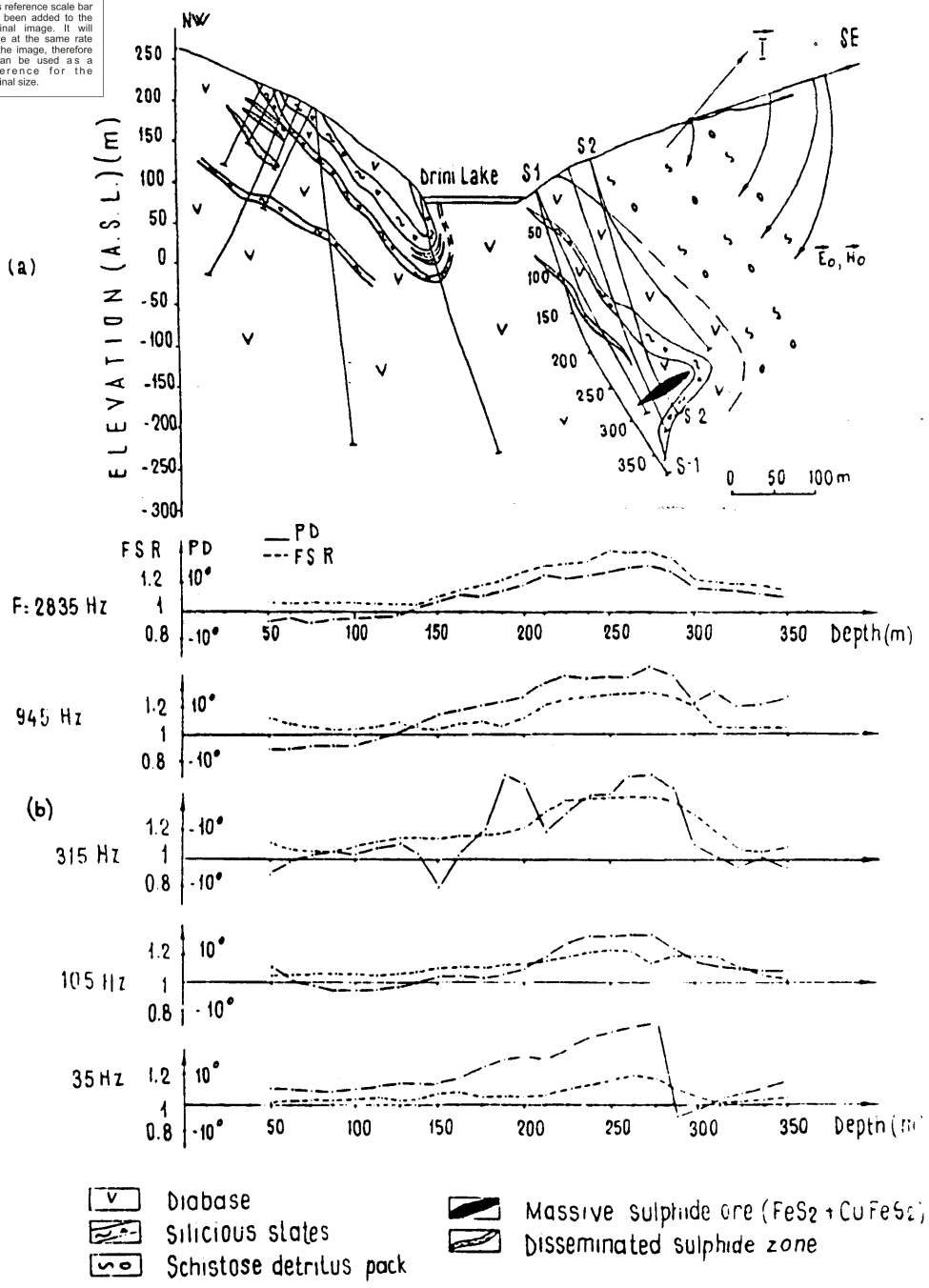


FIG. 9. A case history of the borehole TURAM variant method for massive copper ore exploration in the West Belt of volcano-sedimentary series. (a) Geological cross-section and position of transmitting loop. (b) TURAM profiles for different frequencies, carried out in the S-1 borehole.

of conductivity with the surrounding medium. However, the chargeability parameter shows no difference between the disseminated sulphide and the massive ore body.

From an IP survey with a gradient array $AB = 800$ m, $MN = 40$ m, a clear anomaly between stations 153 and 161 and a very weak anomaly between stations 163 and 169 are obtained. The resistivity profile mainly reflects the influence of the terrain. The first IP anomaly is related to a known outcrop of disseminated pyrite.

The object of a follow-up survey with the TURAM method was to detect the most concentrated sulphide sectors of the IP anomalies. The main feature of the TURAM anomalies is the marked phase difference (PD). Based on physical and mathematical models (Gjovreku 1986) we assumed that it was related to wide sectors of high conductivity. Theoretical calculations for the anomaly at stations 162–168 showed that, according to the "Argand" diagrams (Boschart 1964), for a model with a conductivity of $\sigma = 0.95$ S/m the product $\sigma t = 0.99$ S is obtained for a depth of 28 m.

Boreholes S-2 and S-3 intersected the predicted shallow massive ore body (at 34 m depth) and the disseminated sulphide zone at a depth of about 90 m (see the geological cross-section in Fig. 8). Two other massive ore bodies occur inside the disseminated zone.

Figure 9 presents a case history of exploration for massive copper using the borehole TURAM variant method in the West Belt of the volcano-sedimentary series. The TURAM survey was carried out in the S-1 borehole, while the transmitting loop was placed on the south-east part of the cross-section (Fig. 9a). All the profiles of the frequency bands 35, 105, 315, 945 and 2835 Hz (Fig. 9b) reflect a clear anomaly of both phase difference (PD) and field strength ratio (FSR) parameters at a depth of 200–300 m. The amplitude profiles are normalized using the response at 35 Hz.

The borehole S-2, carried out to verify the TURAM anomaly, intersected a massive copper sulphide ore body in the volcanogenic rocks, where there is a large fold in the siliceous slates.

CONCLUSIONS

1. The IP method has been used successfully for copper sulphide exploration in Albania. By using powerful IP transmitters, the depth of investigation for sulphide exploration may reach 400–600 m.

The proposed "real section" concept is a useful approach to the quantitative interpretation of VES-IP data. It has given accurate results in many geological environments.

The time-domain spectral IP method has been used to discriminate massive or veinlet sulphides from disseminated ones. Laboratory investigation and field experiments with receiving and transmitting times of 2 s have shown interesting results and will serve as a basis for future developments.

2. The TURAM method, used to follow-up the IP anomalies, provides good results for massive copper sulphide exploration. The borehole TURAM variant method has proved successful for massive copper exploration.

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CERTIFICATES

The foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Statement of Material Facts as required by the Securities Act and its regulations.

DATED: May 12, 1992

VANANDA GOLD LTD.

Stanley L. Beale, President and Director

Garth Albright, Secretary

ON BEHALF OF THE BOARD OF DIRECTORS

William S. Beale, Director

Michael Ryan, Director

David Watkins, Director

AGENT

To the best of our knowledge, information and belief, the foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Statement of Material Facts as required by the Securities Act and its regulations.

DATED: May 12, 1992

PACIFIC INTERNATIONAL SECURITIES INC.

Per: _____
JOHN T. EYMANN

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