P.E. 1/8/02

FORM 6-K

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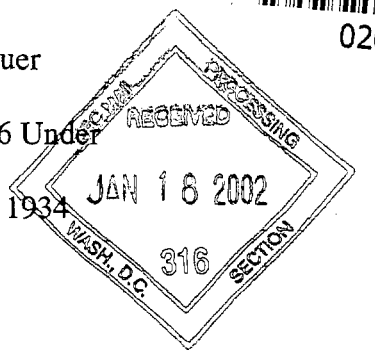
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549



Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16 Under

the Securities Exchange Act of 1934

For the period from December 5, 2001 to January 8, 2002

Metallica Resources Inc.

(Translation of registrant's name into English)

36 Toronto Street, Suite 1000
Toronto, Ontario M5C 2C5 Canada

(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F __X__ Form 40-F _____

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

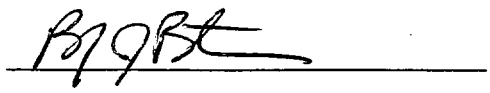
Yes _____ No __X__

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-_____.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused the report to be signed on its behalf by the undersigned, thereunto duly authorized.

METALLICA RESOURCES INC.

By: 

Name: Bradley J. Blacketor
Title: Chief Financial Officer

Dated: January 8, 2002

The following attached documents are filed under this Form 6-K:

Exhibit A:	Press release No. 02-01 dated January 7, 2001
Exhibit B:	Material Change Report Dated January 7, 2001
Exhibit C:	Technical Report entitled "Metallica Resources Inc. – El Morro Copper-Gold Project, Chile Region III" dated November 14, 2001
Exhibit D:	Certificate of Author dated November 14, 2001
Exhibit E:	Consent dated November 14, 2001
Exhibit F:	Cover letter dated November 15, 2001
Exhibit G:	Technical Report entitled "Metallica Resources Inc. El Morro Copper-Gold Project, Chile, Region III, Order-of-Magnitude Study (Preliminary Assessment) Technical Report – Third Party Review" dated December 26, 2001
Exhibit H:	Certificate of Qualified Person dated December 26, 2001
Exhibit I:	Certificate of Author dated December 26, 2001
Exhibit J:	Consent dated December 26, 2001

Exhibit A

METALLICA
RESOURCES INC

PRESS RELEASE

Press Release No. 02-01

METALLICA RESOURCES REPORTS RESULTS FROM ORDER OF MAGNITUDE STUDY FOR THE LA FORTUNA AREA OF THE EL MORRO COPPER-GOLD PROJECT IN CHILE

Denver, CO, January 7, 2002 - Metallica Resources Inc. (TSE: MR, OTCBB: METLF) announces that Knight Piesold Consulting has completed an all equity, order of magnitude, economic study for the La Fortuna area of the El Morro property located in III Region, Chile. The results of the study show the following after tax internal rates of return (IRR) and net present values (NPV), when applying a discount factor of 10 percent. Based on 30 percent of the project, these NPV's have the potential to equate to approximately $3.65 and $7.30 per share of Metallica when using the currently optimistic metal prices of $1.00 per pound copper and $300 per ounce gold, and $1.25 per pound copper and $325 per ounce gold respectively. Noranda is currently earning a 70 percent interest in the property. All dollar amounts are in US dollars unless otherwise indicated.

		Total Project		30% of Project	
Copper ($/Lb.)	**Gold ($/Oz)**	**NPV @ 10% ($ Millions)**	**IRR (%)**	**NPV @ 10% ($ Millions)**	**IRR (%)**
$1.00	$300	$345	19.6	$104	19.6
$1.25	$325	$694	27.6	$208	27.6

The average annual production is estimated to be 298 million pounds of copper and 332,000 ounces of gold. Over the 15-year life total production amounts to 4.5 billion pounds of copper and 5.0 million ounces of gold. The cash operating cost is estimated at $0.33 per pound of copper, net of by-product gold credits, and $4.35 per tonne of ore mined.

As previously reported, the El Morro property contains three separate zones of copper-gold porphyry style mineralization referred to as El Morro, La Fortuna, and El Negro. Noranda calculated that the La Fortuna zone contains an Inferred Mineral Resource estimated at 410 million tonnes grading 0.61 percent copper and 0.56 grams per tonne gold at a cut-off grade of 0.4 percent copper. The next phase of drilling, schedule to begin in January, will test for an expansion of the inferred resource at the La Fortuna area to the north, northwest and at depth.

The order of magnitude study analyzed a conceptual mining plan, which would process a total of 375 million tonnes of material with an average grade of 0.60 percent copper and 0.55 grams per tonne gold at a waste to ore ratio of 1.25:1. The conceptual mining plan uses a smaller tonnage and lower copper and gold grades than the inferred resource at a cutoff grade of 0.40 percent copper.

The conceptual plan proposes open pit mining, conventional milling and flotation to produce a single concentrate containing both copper and gold values with the smelting and refining in Chile. The study did not take into consideration any potential for additional revenue from molybdenum credits. Capital costs for the 75,000 tonne per day project were estimated to be approximately $800 million. The order of magnitude study prepared by Knight Piesold Consulting is preliminary in nature and includes inferred mineral resources at La Fortuna. The inferred mineral resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary assessment will be realized. Further delineation of the mineralization is needed at La Fortuna to upgrade the resource from the inferred category to that of an indicated resource.

The independent Qualified Persons for the required technical report covering this disclosure are Ms. Barbara A. Filas, P.E. and Ms. Roxana Romero N., Mining Engineer both of Knight Piesold Consulting. Fred Lightner, P.E. Metallica's in-house Qualified Person, assisted with the report.

The El Morro property is subject to a Joint Venture Agreement between Noranda and Metallica. Under the terms of the agreement, Noranda can earn a 70 percent interest in the property by making aggregate exploration and development expenditures of $10 million over a six-year period beginning September 1999 and a payment to Metallica of $10 million in September 2005. In addition, Noranda is obligated to complete a bankable feasibility study on the project by September 2007. After Noranda has earned its 70 percent interest, Metallica has a one-time election to have Noranda provide 70 percent of Metallica's 30 percent share of the development costs. Effectively, Noranda will provide 91 percent of the capital and Metallica 9 percent.

Ritch Hall, President and CEO of Metallica, stated that " this study helps both Metallica, and the market, better understand the tremendous economic impact that the El Morro deposit can have on Metallica and its shareholders. This is a very exciting deposit and we look forward to the results of this years drilling program."

Metallica Resources is a Canadian precious and base metal exploration and development company focused on the Americas. It is well funded and currently has 28.5 million common shares outstanding. Please visit Metallica's website at www.metal-res.com and send e-mail to metallica@metal-res.com.

CONTACT: Ritch Hall, President and CEO, (303) 796-0229, Ext. 304.

Exhibit B

METALLICA RESOURCES INC.
MATERIAL CHANGE REPORT UNDER SECTION 75(2) OF THE ONTARIO SECURITIES ACT

Item 1. Reporting Issuer:

Metallica Resources Inc.
c/o Metallica Management Inc.
3979 East Arapahoe Road, Suite 100
Littleton, Colorado 80122

Item 2. Date of Material Change

January 7, 2001

Item 3. Press Release

The press release attached as Exhibit "A" was released over Business Wire in the United States and BCE Emergis News Wire in Canada on January 7, 2001 pursuant to section 75(1) of the Act.

Item 4. Summary of Material Change

Metallica Resources Inc. announces that Knight Piesold Consulting has completed an all equity, order of magnitude, economic study for the La Fortuna area of the El Morro project in Chile. Using a copper price of US$1.00 per pound and a gold price of US$300 per ounce, the total project has a net present value of US$345 million and an internal rate of return of 19.6%. Over the 15-year mine life, total production will approximate 4.5 billion pounds of copper 5.0 million ounces of gold. Cash operating costs are estimated at US$0.33 per pound of copper, net of by-product gold credits, and US$4.35 per tonne or ore mined. Noranda Inc. is currently earning a 70% interest in the property.

Item 5. Full Description of Material Change

The material change is described in the press release attached as Exhibit "A".

Item 6. Reliance on Section 75(3) of the Act

not applicable

Item 7. Omitted Information

not applicable

Item 8. **Senior Officers**

The following senior officer of Metallica Resources Inc. may be contacted for additional information:

Mr. Richard J. Hall
Metallica Resources Inc.
c/o Metallica Management Inc.
3979 East Arapahoe Road, Suite 100
Littleton, Colorado 80122

Item 9. **Statement of Senior Officer**

The foregoing accurately discloses the material change referred to herein.

Dated at the Littleton, Colorado office on January 7, 2001.

"Richard J. Hall"
Richard J. Hall, President & CEO

METALLICA
RESOURCES INC

PRESS RELEASE

Press Release No. 02-01

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geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary assessment will be realized. Further delineation of the mineralization is needed at La Fortuna to upgrade the resource from the inferred category to that of an indicated resource.

The independent Qualified Persons for the required technical report covering this disclosure are Ms. Barbara A. Filas, P.E. and Ms. Roxana Romero N., Mining Engineer both of Knight Piesold Consulting. Fred Lightner, P.E. Metallica's in-house Qualified Person, assisted with the report.

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Metallica Resources is a Canadian precious and base metal exploration and development company focused on the Americas. It is well funded and currently has 28.5 million common shares outstanding. Please visit Metallica's website at www.metal-res.com and send e-mail to metallica@metal-res.com.

CONTACT: Ritch Hall, President and CEO, (303) 796-0229, Ext. 304.

Exhibit D

Certificate of Author

RE: Technical report entitled "Metallica Resources Inc. - El Morro Copper-Gold Project, Chile Region III" dated November 14, 2001 (the "Report")

I, Fred H. Lightner, P.E. am a Registered Professional Engineer and the Senior Vice President and Chief Operating Officer of Metallica Resources Inc. of Suite 100 - 3979 E. Arapahoe Road, Littleton, CO 80122 USA.. I graduated from the Colorado School of Mines with a degree of Metallurgical Engineer (Professional Engineer Degree) in 1968. I have practiced my profession continuously for 33 years since 1968.

I am:

A Registered Professional Engineer in the State of Colorado, PE 20008
A Registered Professional Engineer in the State of Arizona, PE 11106
A member of the Colorado Section of the Society of Mining Engineers
A member of the Mining and Metallurgical Society of America
A member of the Northwest Mining Association
A member of the Prospectors and Developers Association of Canada

I have been involved in and/or directed:

Mineral exploration for gold, silver, copper, molybdenum, uranium and industrial minerals in Canada, the USA, Mexico, Brazil, Chile, Venezuela, Bolivia, Australia, Costa Rica, Spain, and Papua New Guinea.

Mineral resource estimates of gold, silver, copper, and molybdenum deposits utilizing graphical and computerized geological modeling techniques for numerous mineral deposits.

Mineral project development for gold, silver, copper, molybdenum, lead, zinc, uranium in the USA, Mexico, Ghana, Canada, Papua New Guinea, and Chile.

Operation of producing mines for gold, silver, copper, molybdenum, lead, zinc, and uranium in the USA, Mexico, Spain, Ghana, and Canada. I have been the Senior Operating Executive of three separate companies with producing mines and President of two companies involved in mineral exploration and development.

I have also been retained as an expert witness on mineral property valuation issues.

The source of all geological information for the Report is the geological database available at Noranda Chile, Santiago, Chile. The information provided by Noranda Chile, is to the best of my knowledge and experience, correct. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. Although I am not independent of Metallica Resources Inc. exemption from independence has been given since Noranda, our joint venture partner at the El Morro project, is a producing issuer.

I have visited the El Morro project and have reviewed all diamond drill data and other geological data available from Noranda Chile. I have read National Instrument 43-101, Companion Policy 43-101CP, Form 43-101FI. This mineral resource estimation section of this report has been prepared in compliance with NI 43-101, Companion Policy 43-101CP, Form 43-101FI and CIM mineral resource definitions (August 20, 2000).

Dated at Littleton, Colorado, this 14 day of November, 2001.

(signed) Fred H. Lightner (Seal of Professional Engineer)

Exhibit E

CONSENT

TO: Ontario Securities Commission
Alberta Securities Commission
British Columbia Securities Commission
Commission des valeurs mobilières du Québec

RE: Technical report entitled "Metallica Resources Inc. - El Morro Copper-Gold Project, Chile Region III" dated November 14, 2001 (the "Report")

The undersigned, the author of the Report, hereby consents to the filing of the Report by Metallica Resources Inc. with the securities regulatory authorities set out above.

Dated at Denver, Colorado, as of the 14th day of November, 2001.

(signed) Fred H. Lightner

Exhibit F

BEACH, HEPBURN LLP

Barristers & Solicitors

36 TORONTO STREET, SUITE 1000
TORONTO, ONTARIO M5C 2C5
FAX (416) 350-3510

M. F. WHEELER
DIRECT LINE (416) 350-3501
E-mail: wheeler@beachlaw.com

November 15, 2001

VIA SEDAR

Ontario Securities Commission
Alberta Securities Commission
British Columbia Securities Commission
Commission des valeurs mobilières du Québec

Dear Sirs/Mesdames:

Re: Metallica Resources Inc.

On behalf of Metallica Resources Inc., we file herewith a copy of a technical report dated November 14, 2001 entitled "Metallica Resources Inc. - El Morro Copper-Gold Project, Chile Region III", together with a certificate of qualification in respect of the author of the report and a consent from the author of the report.

This technical report is filed pursuant to the MRRS Decision Document dated October 24, 2001 issued in respect of Metallica Resources Inc.

Yours truly,

"M. Wheeler"

Mark F. Wheeler

Exhibit H

Certification of Qualified Person

I, Roxana Romero, am a Professional Engineer and a Project Engineer for Knight Piésold S.A. Marchant Pereira 221, Piso 7, Santiago, Chile. I am a graduate of the Universidad de Santiago de Chile with a degree in Mining Engineering. I have practiced my profession continuously for 10 years since 1991.

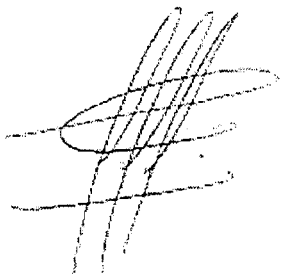
I am also completing a Masters degree, titled: *Magister en Gestión del Medio Ambiente y los Recursos Naturales. Universidad Politécnica de Madrid (en curso).*

As a mining engineer, I have over 10 years of experience in environmental and engineering studies and permit acquisition for mining projects. I have participated in Environmental Impact Studies and Impact Declarations for mining projects and in the preparation of permit acquisition reports for waste dumps, tailings facilities, leach pads, and process plant construction. I have also participated in the development of closure plan reports for submittal to the regulatory agencies. My experience includes projects in Chile, Argentina and Brazil.

The source of the geological and financial information for this report was provided by Metallica Resources Inc. The information provided by Metallica is, to the best of my knowledge and experience, reasonable for a mining project at this stage of development. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report. The calculations used in the financial reports were verified by Knight Piésold accounting personnel.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. I have visited the El Morro project site on November 5 – 7, 2001, and I have reviewed the data contained in the report entitled "Technical Report" submitted by Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report, Fred H. Lightner, November 14, 2001. I have read the National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101FI.

Dated at Santiago Chile, this 26 day of December, 2001.



Roxana Romero
Mining Engineer No. 57.023

Exhibit I

Certification of Author

I, Barbara A. Filas, P.E., am a Registered Professional Engineer and a Principal of Knight Piésold and Co., 1050 Seventeenth Street, Suite 500, Denver, Colorado 80265-0500 U.S.A. I am a graduate of the University of Arizona with a degree in Mining Engineering. I have practiced my profession continuously for 23 years since 1978.

I am:

A Registered Professional Engineer in the State of Colorado, PE25261
A Registered Professional Engineer in the State of Nevada, PE7717
A Registered Professional Engineer in the State of Oregon, PE15315
A Registered Professional Engineer in the State of South Carolina, PE15777
A Certified Environmental Manager in the State of Nevada
A member of the Society for Mining, Metallurgy and Exploration Inc.
A member of the Mining and Metallurgical Society of America
A member of the National Society of Professional Engineers
A member of the Professional Engineers of Colorado
A member of the Canadian Institute of Mining

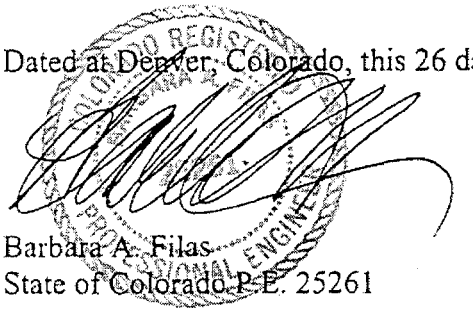
As a mining engineer, I have more than 20 years of experience in surface and underground mine operations, engineering, and regulatory support for coal, metals, and industrial mineral mining projects. These efforts include mine development plans, mine and processing operations, waste containment facility designs, reclamation plans and surety estimates, project permitting, comprehensive environmental site and compliance audits, multidisciplinary evaluations, and storm water and sedimentation control designs. In addition, I have participated in numerous laws and rule making processes in the United States and internationally and have developed many designs and permitting documents which have successfully passed the scrutiny of the regulatory community and the international lending institutions. I am responsible for Knight Piésold's global activities in the mining and environmental business sectors. Prior to joining the firm, I have held responsible engineering and environmental positions with Atlas Minerals, Summit Minerals, U.S. Steel Corporation, and Monterey Coal Company.

The source of the geological and financial information for this report was provided by Metallica Resources Inc. The information provided by Metallica is, to the best of my knowledge and experience, reasonable for a mining project at this stage of development. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is

not reflected in this report. The calculations used in the financial reports were verified by Knight Piésold accounting personnel.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. Under my direction, a Qualified Person from Knight Piésold have visited the El Morro project site, and I have reviewed the data contained in the report entitled "Technical Report" submitted by Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report, Fred H. Lightner, November 14, 2001. I have read, and this report has been prepared in accordance with, the National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101FI.

Dated at Denver, Colorado, this 26 day of December, 2001.



Barbara A. Filas
State of Colorado P.E. 25261

Knight Piésold
CONSULTING

Exhibit J

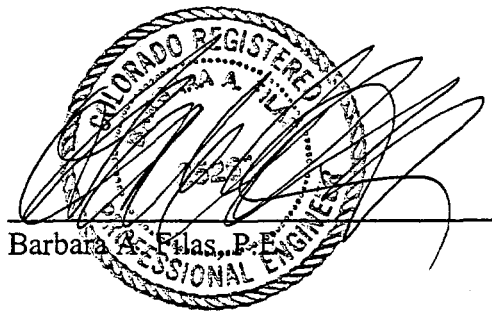
CONSENT

TO: Ontario Securities Commission
Alberta Securities Commission
British Columbia Securities Commission
Commission des valeurs mobilières du Québec

RE: Technical report entitled "Metallica Resources Inc. El Morro Copper-Gold Project, Chile, Region III, Order-of-Magnitude Study (Preliminary Assessment) Technical Report – Third Party Review" dated December 26, 2001 (the "Report")

The undersigned, the author of the Report, hereby consents to the filing of the Report by Metallica Resources, Inc. with the securities regulatory authorities set out above.

Dated at Denver, Colorado, as of the 26th day of December, 2001.



Barbara A. Filas, P.E.

Exhibit C

Metallica Resources Inc.
El Morro Copper – Gold Project
Chile, Region III

Technical Report

By

Fred H. Lightner
Senior Vice President and Chief Operating Officer
Metallica Resources Inc.
Suite 100 - 3979 E. Arapahoe Road
Littleton, CO 80122 USA
Tel: 303.796.0229
Web site: www.metal-res.com

November 14, 2001

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The following report items are NOT APPLICABLE and are therefore omitted from this report.

Item 5: Disclaimer
Item 17: Adjacent Properties
Item 25: Additional Requirements for Technical Reports on Development Properties and Production Properties

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Item 3: Summary

3.1 Property, Location and Ownership

The El Morro copper-gold project, a joint venture between Metallica Resources Inc. (Metallica) and Noranda Inc. (Noranda), is located in north central Chile, Region III, about 80 kilometers east of the city of Vallenar. The El Morro property consists of a total of 16,400 hectares, with 2,244 hectares controlled through existing option to purchase agreements. Metallica staked the remaining 14,156 hectares. In addition to the above property, Noranda has applied for an additional 2,500 hectares of exploration claims that become part of the joint venture under Metallica's area of interest. The entire property package is collectively referred to as the El Morro property.

In September 1999 Metallica and Noranda entered into an exploration agreement on the El Morro property and amended the agreement in February 2000. Noranda can earn a 70 percent interest in the property by making aggregate exploration and development expenditures of US$10 million over a six-year period beginning September 1999, making a payment to Metallica in September 2005 of US$10 million and providing a bankable feasibility study by September 2007. After Noranda has earned its 70 percent interest, Metallica has a one-time election to have Noranda provide for 70 percent of Metallica's 30 percent contribution of development costs.

Noranda and Metallica have five separate purchase option agreements, underlying their agreement, two of which were signed by Metallica and three by Noranda. These options require periodic payments over a four-year period that began in June of 1998. The Santa Julia property is controlled by three separate agreements, negotiated by Noranda, and covers much of the core area of La Fortuna. The Santa Julia property is not subject to royalties. The two remaining options are subject to a 2 percent NSR royalty, and one of them can be reduced to 1 percent by purchase at any time up to 2003. Noranda is making all property payments as part of its earn-in requirement.

3.2 Geology and Mineralization

The primary economic consideration for the district is the presence of porphyry bodies emplaced along the regional structural pattern, of NNE and NW orientation. The porphyries appear as dykes and stocks of variable composition and size. At the El Morro property, three separate zones of copper-gold porphyry style mineralization referred to as El Morro, La Fortuna, and El Negro have been identified. A fourth zone of mineralization referred to the Camp area lies at the northern end of El Negro. In this report the camp area is generally included as part of El Negro.

At the El Morro area, drilling has identified a copper-gold-molybdenum porphyry type deposit. Most of the rocks intersected by drilling are sediments and tuffs affected by strong potassic alteration. The mineralogy, alteration assemblages and grade distribution shows the classic vertical zoning, where an oxidized, leached horizon overlies a zone of enriched copper sulfides, on top of a primary zone. Minor amounts of intrusive porphyry have been identified at El Morro. The full lateral extent of the mineralization has not yet been delineated.

La Fortuna is a classic copper-gold porphyry-type deposit. Mineralization is related to multistage sub-volcanic intrusions of granodioritic to dioritic composition, emplaced in a gently east dipping sequence of andesitic conglomerate, tuffs and sediments. Mineralization consists of secondary and primary copper sulfides with associated gold. The sulfides are found in stockwork or as fine dissemination, mainly in the porphyry units.

El Negro is characterized by an extensive NNE trending zone of outcropping granodiorite and quartz diorite porphyry, which intrude andesites and sediments with strong potassic alteration. Drilling shows pervasive low-grade copper, gold and molybdenum values with higher grade values localized near intrusive contacts.

3.3 Exploration Concept and Status

The concept, or strategy, is to explore the presence of porphyry clusters emplaced along the regional structural pattern. The overall objective is the identification, delineation, and exploitation of an economic copper-gold-molybdenum ore deposit. Total drilling on the property is 28,326 meters in 110 drill holes. Reverse-circulation drilling totals 6,785 meters in 45 holes and diamond drill core totals 21,541 meters in 65 holes. In addition to the drilling, geological mapping, geophysical, geochemical, and metallurgical studies have been included in the exploration program.

Although exploration has been successful in identifying three separate mineralized areas on the El Morro property, the La Fortuna area has given the best results to date in the whole district. La Fortuna has been drill tested on an approximate 200-meter grid spacing and an initial inferred mineral resource has been determined to be 410,000,000 tonnes at a grade of 0.61 percent copper and 0.56 grams per tonne gold at a cutoff grade of 0.40 percent copper. At a cutoff grade of 0.30 percent copper the inferred mineral resource has been determined to be 540,000,000 tonnes at a grade of 0.55 percent copper and 0.51 grams per tonne gold. Further drilling is needed at La Fortuna to upgrade the resource from the inferred category to that of an indicated resource and to better define the mineralization.

3.4 Conclusions and Recommendations

To date the results at the El Morro Project are considered very positive and further exploration is warranted.

At the El Morro area 200-meter spaced drilling encountered significant secondary enrichment and primary sulfides in wall rock, leaving open the possibility of a major porphyry body still buried under the local stratigraphy. The exploration work proposal for the El Morro area includes increasing the drill density to a 100-meter spacing at the higher grade zone, testing additional geophysical anomalies, and targeting the postulated porphyry stock by geological modeling and deeper drilling.

At La Fortuna drill results of 200-meter spaced holes in a triangular grid were used to estimate an inferred resource of copper-gold porphyry type mineralization. Future programs must increase the drill density to a 100-meter spaced grid, and thereby increase the confidence in the resource estimation. At the same time, the lateral extension of the mineralized body has to be explored, particularly to the north and northwest. The limit of the mineralization at depth has yet to be determined. Supplemental geophysical studies, i.e., dipole-dipole lines and test profiles, are recommended to explore the La Fortuna for additional porphyry mineralization in the gravel covered areas.

Additional exploratory drilling is also recommended in other anomalous areas. A new, winter resistant camp is needed and an efficient communication system must be implemented, as well as an improved access road.

Item 4: Introduction and Terms of Reference

In recent press releases, Metallica and Noranda presented results of an inferred mineral resource for the La Fortuna area of the El Morro property. Since the property is currently not material to Noranda, and by its status of being a producing issuer, it is exempt from issuing a Technical Report. However, the property is material to Metallica, and a Technical Report is required.

The purpose of this Technical Report is to comply with National Instrument 43-101 by providing the scientific and technical information for the El Morro property of Metallica.

The majority of the exploration work at the El Morro property has been conducted under the supervision and direction of Noranda. The report entitled "Noranda Chile Limitada - El Morro Project Report - For Seasons 1999-2000 & 2000-2001 by Piotr Paleczek, Carlos Caceres, Gloria Valenzuela, and Mike Savell dated August 2001" has been the main source of information for this Technical Report. All of the figures and plates presented in this report have been taken directly from the above report and are the work product of Noranda. Since the figures and plates are Noranda work product, the numbering system of these illustrations is not always in chronological order. The tables, figures, and plates are presented at the end of the report section where they are first mentioned. Tables are presented first, followed by figures, and then plates. In various illustrations abbreviations for certain elements are represented by the chemical symbol:

Copper = Cu
Gold = Au
Molybdenum = Mo
Lead = Pb
Zinc = Zn
Arsenic = As
Antimony = Sb
Vanadium = V

Other sources of information used in this report are stated in Item 23: References.

As author of this report and qualified person, I Fred H. Lightner, have visited the El Morro property. I have observed the drilling, sampling, and core logging conducted in the field. Since our joint venture partner, Noranda is conducting all work programs I have had no direct responsibility. Based on my experience and qualifications, I am of the opinion that work conducted by Noranda and the results obtained have been done in a professional manner, which meets or exceeds acceptable industry standards. To my knowledge and belief all data generated by Noranda are true and accurate.

Three separate and distinct mineralized areas have been identified at the El Morro property, El Morro, La Fortuna, and El Negro. An inferred mineral resource has been estimated for only one of the areas, La Fortuna. In this report basic information will be given for all three mineralized areas but more detail and specific information will be presented for the La Fortuna area.

In this report the term "Metallica" can refer to either Metallica Resources Inc. or Minera Metallica Limitada, the wholly owned Chilean subsidiary of Metallica Resources Inc. Also the term "Noranda" can refer to either Noranda Inc. or Noranda Chile Ltda, the wholly owned Chilean subsidiary of Noranda Inc.

Item 6: Property Description and Location

6.1 Location

The El Morro copper-gold project is located in north central Chile; Region III (Atacama); Huasco Province; Alto del Carmen and Tierra Amarilla Communities. The property is about 80 kilometers east of the city of Vallenar at an approximate –28° 30' latitude and –70 ° longitude. The following Universal Transverse Mercator (UTM) coordinates of 6,838,000 on the North, 419,000 on the East, 6,823,000 on the South, and 405,000 on the West generally bound the property. The property has been legally surveyed and all concessions within the Metallica / Noranda Joint Venture are contiguous. Figure 1 - El Morro Project Location Map, presents the location of the El Morro property.

The El Morro property consists of a total of 16,400 hectares, with 2,273 hectares controlled through existing option to purchase agreements. Metallica staked the remaining 14,127 hectares. The entire property package is collectively referred to as the El Morro property. In addition to the above property, Noranda has applied for an additional 2,500 hectares of exploration claims that would become part of the joint venture under Metallica's area of interest.

In September 1999 Metallica and Noranda entered into an exploration agreement on the El Morro property and amended the agreement in February 2000. Noranda can earn a 70 percent interest in the property by making aggregate exploration and development expenditures of US$10 million over a six-year period beginning September 1999, making a payment to Metallica in September 2005 of US$10 million, and providing a bankable feasibility study by September 2007. After Noranda has earned its 70 percent interest, Metallica has a one-time election to have Noranda provide for 70 percent of Metallica's 30 percent contribution of development costs. Effectively Noranda would provide 91 percent of the capital and Metallica 9 percent. The carried financing will be at an interest rate of Noranda's cost of financing plus 1 percent. Metallica retained an area of interest of one kilometer from the outside boundary of the El Morro property. Noranda is making all property payments as part of its earn-in requirement.

6.2 Purchase Option Agreements

Noranda and Metallica have five separate purchase option agreements, underlying their agreement, two of which were signed by Metallica and three by Noranda. These option to purchase agreements are summarized as follows:

6.21 Minera Metallica Limitada and Rene Martin Jure

Parties

Minera Metallica Limitada, and Rene Martin Jure on behalf of Legal Mining Companies Cantarito Uno de la Sierra Juntas de Cantarito de la Estancia Huasco Alto and Tronquito uno de la Sierra Portezuelo de Cantarito de la Estancia Huasco Alto (Martin).

Properties

A list of concessions comprising the Cantarito and Tronquito mining properties is presented in Table 1 - Concessions of the Martin Purchase Option Agreement. The two properties have a combined area of approximately 305 hectares.

Term

On June 4, 1998, Metallica and Martin executed an option to purchase contract whereby Martin agreed irrevocably, to sell, assign and transfer the mining properties to Metallica. The term of the option is 4 years and will expire on June 4, 2002.

Price

The total purchase price amounts to US$1,500,000, payable in five installments, according to the following schedule:

US$20,000, paid upon deed execution
US$30,000, paid on June 4, 1999
US$75,000, paid on June 4, 2000
US$150,000, paid on June 1, 2001
US$1,225,000, payable as of June 4, 2002

Likewise, once the option has been exercised and the exploitation of the properties has been started, Metallica shall pay the Vendors a Net Smelter Return (NSR) amounting to 2 percent of the mineral ore obtained in the concessions that will be the object of the mining purchase contract. This NSR may not be in effect for a period exceeding 50 years. Prior to June 4, 2003, Metallica may elect to purchase one half of the NSR, equal to 1 percent for $US500,000.

6.22 Minera Metallica Limitada and BHP Chile Inc.

Properties

The list of concessions comprising the BHP Chile Inc. (BHP) properties is presented in Table 2 - Concessions of the BHP Purchase Option Agreement.

Term

On September 2, 1999, Metallica and BHP executed an option to purchase contract whereby BHP agreed irrevocably, to sell, assign and transfer the mining properties to Metallica. The term of the option is 4 years and will expire on September 2, 2003.

Price

The total purchase price amounts to US$1,690,000, payable in five installments, according to the following schedule:

US$40,000, paid upon deed execution
US$150,000, paid on July 31, 2000
US$500,000, paid on July 31, 2001
US$500,000, payable as of July 31, 2002
US$500,000, payable as of July 31, 2003

Likewise, once the option has been exercised and the exploitation of the properties has been started, Metallica shall pay the Vendors a NSR amounting to 2 percent of the mineral ore obtained in the concessions that will be the object of the mining purchase contract.

Transfer

Through public deed dated September 30, 1999, BHP Chile Inc. authorized Minera Metallica Limitada to assign this contract to Noranda Chile Limitada.

6.23 Noranda Chile S.A. and Santiago del Carmen Cayo Salinas

Properties

Mr. Santiago del Carmen Cayo Salinas (Santiago Cayo) currently owns eleven shares in Legal Mining Company, Santa Julia Uno de la Sierra Fortuna which is the owner of the exploitation concession Santa Julia 1–3.

Term

On October 20, 2000, Santiago Cayo and Noranda executed an option to purchase contract whereby Santiago Cayo agreed irrevocably, to sell, assign and transfer the one hundred percent of the eleven shares Santiago Cayo currently holds and those it might acquire in the future in Legal Mining Company "Santa Julia Uno de la Sierra Fortuna". The term of the option is 2 years and will expire on October 20, 2002.

Price

The total purchase price amounts to US$30,000 for the shares, payable according to the following schedule:

US$5,000, paid upon deed execution
US$5,000, paid on October 19, 2001
US$20,000, payable as of October 20, 2002 was prepaid on October 19, 2001 and the purchase option was exercised.

Likewise, once the option has been exercised within 2 years of the start of production, Noranda shall pay the Vendor, in a single installment a "production bonus" equal to US$133,333.

6.24 Noranda Chile S.A. and Luis Alberto Cayo Salinas

Properties

Mr. Luis Alberto Cayo Salinas (Luis Cayo) currently owns eleven shares in Legal Mining Company, Santa Julia Uno de la Sierra Fortuna that is the owner of the exploitation concession Santa Julia 1-3.

Term

On October 20, 2000, Luis Cayo and Noranda executed an option to purchase contract whereby Luis Cayo agreed irrevocably, to sell, assign and transfer the one hundred percent of the eleven shares Luis Cayo currently holds and those it might acquire in the future in Legal Mining Company "Santa Julia Uno de la Sierra Fortuna". The term of the option is 2 years and will expire on October 20, 2002.

Price

The total purchase price amounts to US$30,000 for the shares, payable according to the following schedule:

US$5,000, paid upon deed execution
US$5,000, paid on October 19, 2001
US$20,000, payable as of October 20, 2002 was prepaid on October 19, 2001 and the purchase option was exercised.

Likewise, once the option has been exercised within 2 years of the start of production, Noranda shall pay the Vendor, in a single installment a "production bonus" equal to US$133,333.

6.25 Noranda Chile S.A. and Johnny Cayo Salinas and Siblings

Properties

Mr. Johnny Cayo Salinas and Siblings (Cayo Villalba Brothers) currently have a right to acquire eleven shares in Legal Mining Company, Santa Julia Uno de la Sierra Fortuna which is the owner of the exploitation concession Santa Julia 1-3. A court ruling confirming their ownership is expected soon.

Term

On February 5, 2001, Johnny Cayo Salinas and Noranda executed an option to purchase contract whereby Johnny Cayo Salinas agreed irrevocably, to sell, assign and transfer the one hundred percent of the eleven shares Cayo Villalba Brothers might acquire in the future in Legal Mining Company "Santa Julia Uno de la Sierra Fortuna". The option will expire on October 20, 2002.

Price

The total purchase price amounts to US$25,000 for the shares, payable according to the following schedule:

US$4,000, paid upon deed execution
US$3,000, payable as of February 5, 2002
US$18,000, payable as of October 20, 2002

Likewise, once the option has been exercised within 2 years of the start of production, Noranda shall pay the Vendor, in a single installment a "production bonus" equal to US$133,333.

Mineral rights at the El Morro property are held through the above option to purchase agreements and a series of Exploration and Mining (Exploitation) Concessions held by Metallica and Noranda. All Exploration Concessions have been granted the appropriate permits and have been protected by the payment of the applicable mining taxes. In most cases the 2-year period granted to the Exploration Concessions has expired during July, August, and September of 2001. Therefore, application for Mining Concessions based on these Exploration Concessions, have been filed. In Chile, the holder of a previous Exploration Concession has a preferential right to the granting of a Mining Concession. The new applications for the Mining Concessions are in process. Additional Exploration Concessions have been staked as protection layers over the area of interest. Application for granting of these additional exploration permits is also in progress. The following tables and figure present the various concessions of the Metallica / Noranda joint venture.

Table 3 - Exploration Concessions of the Metallica / Noranda Joint Venture
Table 4 - Mining Concessions of the Metallica / Noranda Joint Venture
Table 5 - Protection Layers of Concessions of the Metallica / Noranda Joint Venture
Table 6 - Area of Interest Exploration Concessions of the Metallica / Noranda Joint Venture

Figure 2 - El Morro Property and Ownership illustrates the El Morro property and concession ownership. Also shown on Figure 2 are the location of the currently identified zones of mineralization and resources. There are no other mine workings, tailings ponds, waste deposits or important natural features or improvements at the El Morro property or in the immediate vicinity. A detailed claim map, Propidad Minera, an unlabeled Plate, is also presented.

6.3 Legal Issues

As part of the Noranda due diligence, prior to its agreement with Metallica, Noranda encountered some conflicting concessions at the El Morro property. A total of nine concessions owned by

Compañía Minera Hornitos (Hornitos) are in conflict. Initially Metallica filed five separate suits to revoke the following five concessions:

Las Minas de Cantaritos Cuatro 1/300
Las Minas de Cantaritos Cinco 1/300
Las Minas de Cantaritos Seis 1/300
Las Minas de Cantaritos Ocho 1/300
Las Minas de Cantaritos Nueve 1/300

Grounds for the revocation were that Hornitos furnished false survey records in its court filings and landmarks or boundary stones were never constructed. Metallica believes that both technical and legal evidence demonstrate that it was impossible to have conducted the land survey in the manner presented by Hornitos.

On August 21, 2000, the First Court of First Instance of Vallenar disallowed the claim filed by Metallica and later on November 29, 2000, the Court of Appeals of Copiapó annulled the first judgment and revoked the concessions of Hornitos, instructing the cancellation of the applicable registrations.

All five cases, one for each separate concession, are currently at the Supreme Court awaiting an appeal for annulment by Hornitos. The Court decision is expected later this year.

A second group of four concessions, owned by Hornitos is also in conflict at the El Morro property:

Minas de Cantaritos Uno 1/300
Las Minas de Cantaritos Dos 1/300
Las Minas de Cantaritos Tres 1/300
Las Minas de Cantaritos Siete 1/300

Metallica has again filed four suits to revoke these claims on similar grounds and attorneys are currently working on the evidence to be submitted for trial. Figure 2 - El Morro Property and Ownership illustrates the area in conflict. The area of conflict does not affect any of the known mineralized zones at La Fortuna and El Negro and only a small portion of the mineralized zone at El Morro is conflicted.

6.4 Surface Rights

The El Morro project is located on private lands controlled by Comunidad Agricola los Huascoaltinos, who granted Noranda a voluntary easement on January 20, 2001. The price paid by Noranda was $1,320,000 Chilean Pesos or approximately US$2,000. Noranda has the right to occupy the land and conduct exploration until the agreement expires on December 10, 2001, at which time the easement will require renegotiation.

6.5 Environmental Permitting

The National Environmental Committee (CONAMA) and Regional Environmental Committees (COREMAs) are the agencies responsible for environmental management in Chile. For a project or activity to be environmentally evaluated, it must be submitted into the Environmental Impact Evaluation System (SEIA) and the CONAMA is responsible for administrating the environmental impact evaluation procedures. Both exploration and mine development projects are included. The type of assessment required for each project can be either an:

Environmental Impact Assessment (EIA)
Environmental Impact Declaration (DIA)

In broad terms, an EIA in Chile is comparable with international guidelines for an EIA and is required if there is sufficient reason for speculating that the project may produce certain specified environmental

impacts. A DIA is a document that establishes that the project will comply with current norms and environmental standards. A DIA for the El Morro project was filed in Copiapo before the CONAMA - III Region on October 5, 2001. The scope of the permit was for an advanced evaluation stage by the use of drilling for a period of the next three years. The evaluation is in progress, but approval is expected in December, 2001.

There are currently no known environmental liabilities at the El Morro project.

Table 1 - Concessions of the Martin Purchase Option Agreement

Concession Name	Concession Type	Area (hectares)	Registry of Mines				Location		
			Page	Volume	Year	Office	Community	Province	Region
Cantarito 183 – 186	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 199 – 202	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 215 – 218	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 231 – 234	Mining	175	7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 299 – 306	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 341 – 348	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cantarito 389 – 391	Mining		7	8	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 290	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 343 - 346	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 380 - 383	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 396 - 399	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 407	Mining	130	46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 432 - 434	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 463 - 464	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 473 - 474	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tronquito 493 - 496	Mining		46	9	1984	Vallenar	Alto del Carmen	Huasco	Atacama (III)

Table 2 - Concessions of the BHP Purchase Option Agreement

Concession Name	Concession Type	Area (hectares)	Registry of Mines				Location		
			Page	Volume	Year	Office	Community	Province	Region
Niquel 1 - 10	Mining	50	315	81	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Zinc 1 - 10	Mining	50	346	86	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Plomo 1 - 10	Mining	50	285	76	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cobalto 1 - 30	Mining	150	360	88	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Estano 1 - 57	Mining	263	307	80	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Potasio 1 - 50	Mining	236	338	85	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cuarzo 1 - 55	Mining	239	325	83	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Galena 1 - 57	Mining	277	366	89	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Litio 1 - 39	Mining	300	352	87	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Titaneo 1 - 33	Mining	141	290	77	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Bario 1 - 40	Mining	200	279	75	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Uranio 1 - 4	Mining	4	297	78	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Silice 1	Mining	1	320	82	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Tasio 1	Mining	1	333	84	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)
Cobre 1 - 6	Mining	6	302	79	1996	Vallenar	Alto del Carmen	Huasco	Atacama (III)

Table 3 - Exploration Concessions of the Metallica / Noranda Joint Venture

Concession Name	Area (hectares)	Registration – Discovery Record Page	No.	Year	Office	Community	Filing Date	Expiration Date
Morro 1	300	1.829 VTA.	1343	1999	Vallenar	Alto del Carmen	16-Mar-99	15-Mar-01
Morro 2	300	1.831 VTA.	1344	1999	Vallenar	Alto del Carmen	16-Mar-99	15-Mar-01
Morro 3	300	1.833 VTA.	1345	1999	Vallenar	Alto del Carmen	16-Mar-99	15-Mar-01
Morro 4	300	1.835 VTA.	1346	1999	Vallenar	Alto del Carmen	16-Mar-99	15-Mar-01
Morro 6	200	1.837 VTA.	1347	1999	Vallenar	Alto del Carmen	5-Mar-99	4-Mar-01
Morro 7	300	1.839 VTA.	1348	1999	Vallenar	Alto del Carmen	5-Mar-99	4-Mar-01
Morro 12	300	1.845 VTA.	1351	1999	Vallenar	Alto del Carmen	10-Mar-99	9-Mar-01
Morro 13	300	1.847 VTA.	1352	1999	Vallenar	Alto del Carmen	10-Mar-99	9-Mar-01
Morro 14	300	1.841 VTA.	1349	1999	Vallenar	Alto del Carmen	10-Mar-99	9-Mar-01
Morro 16	200	1.843 VTA.	1350	1999	Vallenar	Alto del Carmen	10-Mar-99	9-Mar-01
Morro 17	300	2419	1914	1999	Copiapo	Tierra Amarilla	12-Mar-99	11-Mar-01
Morro 18	300	2.420 VTA.	1915	1999	Copiapo	Tierra Amarilla	12-Mar-99	11-Mar-01
El Morro 1	300	1.803 VTA.	1330	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 2	300	1.805 VTA.	1331	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 3	300	1.807 VTA.	1332	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 4	300	1.809 VTA.	1333	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 5	200	1.811 VTA.	1334	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 6	200	1.813 VTA.	1335	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 7	300	1.815 VTA.	1336	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 8	300	1.817 VTA.	1337	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 9	200	1.819 VTA.	1338	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 10	200	1.821 VTA.	1339	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 11	300	1.823 VTA.	1340	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 12	300	1.825 VTA.	1341	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 13	300	1.827 VTA.	1342	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 14	300	1927	1410	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 15	200	1929	1411	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 16	200	1931	1412	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 17	300	135 VTA.	100	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 18	200	137	101	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 19	300	139	102	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 20	300	140 VTA.	103	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 21	300	142 VTA.	104	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 22	300	144	105	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 25	300	146	106	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 26	300	147 VTA.	107	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 28	300	149 VTA.	108	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 29	300	1933	1413	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 30	300	1935	1414	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 31	300	1937	1415	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 32	300	151	109	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 33	300	153	110	2000	Copiapo	Tierra Amarilla	7-May-99	6-May-01
El Morro 34	300	1939	1416	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 35	300	1941	1417	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 36	300	1943	1418	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 37	300	1945	1419	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 39	300	1947	1420	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 40	300	1949	1421	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 41	300	1951	1422	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 42	300	1953	1423	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01

Table 3 - Exploration Concessions of the Metallica / Noranda Joint Venture (continued)

Concession Name	Area (hectares)	Registration – Discovery Record Page	No.	Year	Office	Community	Filing Date	Expiration Date
El Morro 43	300	1955	1424	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 44	300	1957	1425	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 45	300	1959	1426	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 46	300	1961	1427	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 47	300	1963	1428	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 48	300	1965	1429	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 49	300	1967	1430	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 50	300	1969	1431	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 51	300	1971	1432	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 52	300	1973	1433	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 53	300	1975	1434	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro 54	300	1977	1435	1999	Vallenar	Alto del Carmen	7-May-99	6-May-01
El Morro A	300	814	666	2000	Vallenar	Alto del Carmen	2-Jun-00	9-Nov-02
El Morro B	300	815	667	2000	Vallenar	Alto del Carmen	2-Jun-00	9-Nov-02
El Morro C	300	816	668	2000	Vallenar	Alto del Carmen	2-Jun-00	9-Nov-02
El Morro D	300	817	669	2000	Vallenar	Alto del Carmen	2-Jun-00	9-Nov-02

Table 4 - Mining Concessions of the Metallica / Noranda Joint Venture

Concession Name	Area (hectares)	Registration - Discovery Record Page	No.	Year	Office	Community	Filing Date	Judgment Date
Morro 1	300	760 VTA.	624	1999	Vallenar	Alto del Carmen	7-May-99	13-Feb-01
Morro 2	284	762	625	1999	Vallenar	Alto del Carmen	7-May-99	19-Jan-01
Morro 3	294	763 VTA.	626	1999	Vallenar	Alto del Carmen	7-May-99	12-Feb-01
Morro 4	282	765	627	1999	Vallenar	Alto del Carmen	7-May-99	12-Feb-01

Table 5 - Protection Layers of Concessions of the Metallica / Noranda Joint Venture

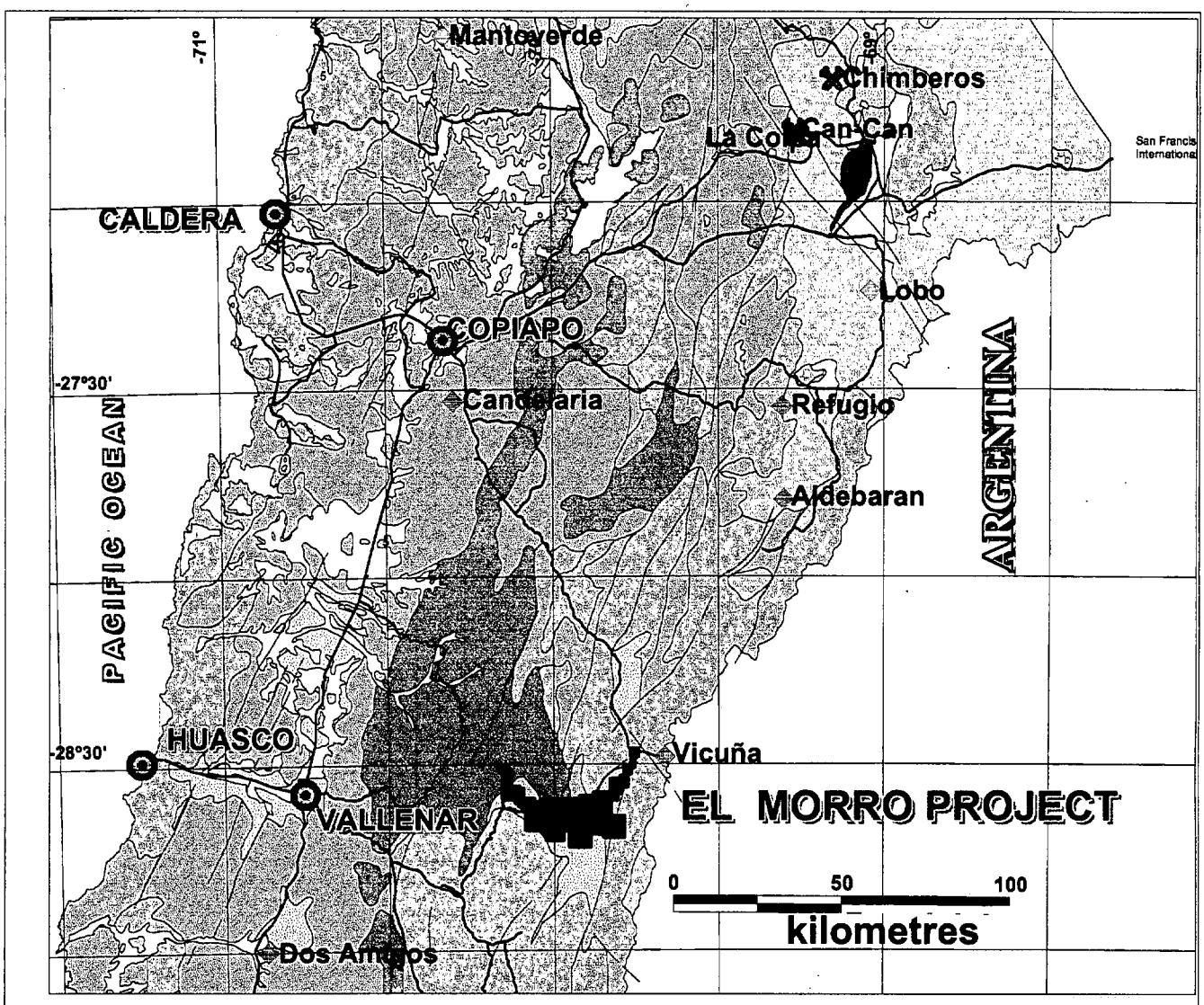
Concession Name	Area (hectares)	Registration – Discovery Record Page	No.	Year	Office	Community	Filing Date	Expiration Date
Cazadero 1	200	514	399	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 2	200	515	400	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 3	300	516	401	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 4	200	517	402	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 5	300	518	403	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 6	300	519	404	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 7	300	520	405	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 8	300	521	406	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 9	300	522	407	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 10	300	523	408	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 11	300	524	409	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 12	300	525	410	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 13	300	526	411	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 14	300	527	412	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 15	300	528	413	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 16	300	529	414	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 17	300	530	415	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 18	300	531	416	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 19	300	532	417	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 20	300	533	418	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 21	300	534	419	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 22	300	535	420	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 23	300	536	421	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 24	300	537	422	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 25	300	538	423	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 26	300	539	424	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 27	300	540	425	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 28	200	541	426	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 29	300	542	427	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 30	200	543	428	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 31	300	544	429	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 32	300	545	430	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 33	300	546	431	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 34	300	547	432	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 35	300	548	433	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 36	300	549	434	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 37	200	550	435	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 38	200	551	436	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Cazadero 39	300	490 Vta	368	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 40	300	492	369	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 41	300	493 Vta	370	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 42	300	495	371	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 43	300	496 Vta	372	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 44	300	498	373	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 45	300	499 Vta	374	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 46	300	501	375	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Cazadero 47	300	502 Vta	376	2001	Copiapo	Tierra Amarilla	2-Mar-01	In Process
Caza 1	300	488 Vta	382	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 2	300	490	383	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process

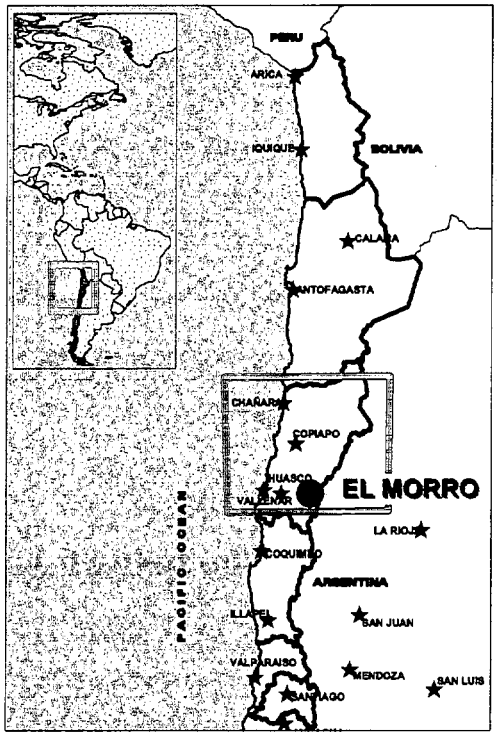
Table 5 - Protection Layers of Concessions of the Metallica / Noranda Joint Venture (continued)

Concession Name	Area (hectares)	Registration – Discovery Record Page	No.	Year	Office	Community	Filing Date	Expiration Date
Caza 3	300	491 Vta	384	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 4	300	493	385	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 5	300	494 Vta	386	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 6	300	504	377	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Caza 7	300	540 Vta	404	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Caza 8	300	496	387	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 9	300	497 Vta	388	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 10	300	499	389	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 11	300	500 Vta	390	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 12	300	502	391	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 13	300	503 Vta	392	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 14	300	505	393	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 15	300	506 Vta	394	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 16	300	508	395	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 17	300	509 Vta	396	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 18	300	511	397	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Caza 19	200	512 Vta	398	2001	Vallenar	Alto del Carmen	5-Mar-01	In Process
Pircas 1	200	505 Vta	378	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Pircas 3	300	508 Vta	380	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Pircas 5	200	511 Vta	382	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process

Table 6 - Area of Interest Exploration Concessions of the Metallica / Noranda Joint Venture

Concession Name	Area (hectares)	Registration – Discovery Record Page	No.	Year	Office	Community	Filing Date	Expiration Date
Morrito 25	100	431 Vta	344	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 26	100	433	345	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 27	100	434 Vta	346	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 28	100	436	347	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 29	100	437 Vta	348	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 30	100	439	349	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 31	100	440 Vta	350	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 32	100	442	351	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 33	100	443 Vta	352	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Morrito 34	200	445	353	2001	Vallenar	Alto del Carmen	1-Mar-01	In Process
Macho 1	300	505 Vta	378	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Macho 3	300	508 Vta	380	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Macho 7	100	514 Vta	384	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Macho 8	100	516	385	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Pircas 1	100	505 Vta	378	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Pircas 3	300	508 Vta	380	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process
Pircas 5	200	511 Vta	382	2001	Copiapo	Tierra Amarilla	3-Mar-01	In Process





LOCATION MAP

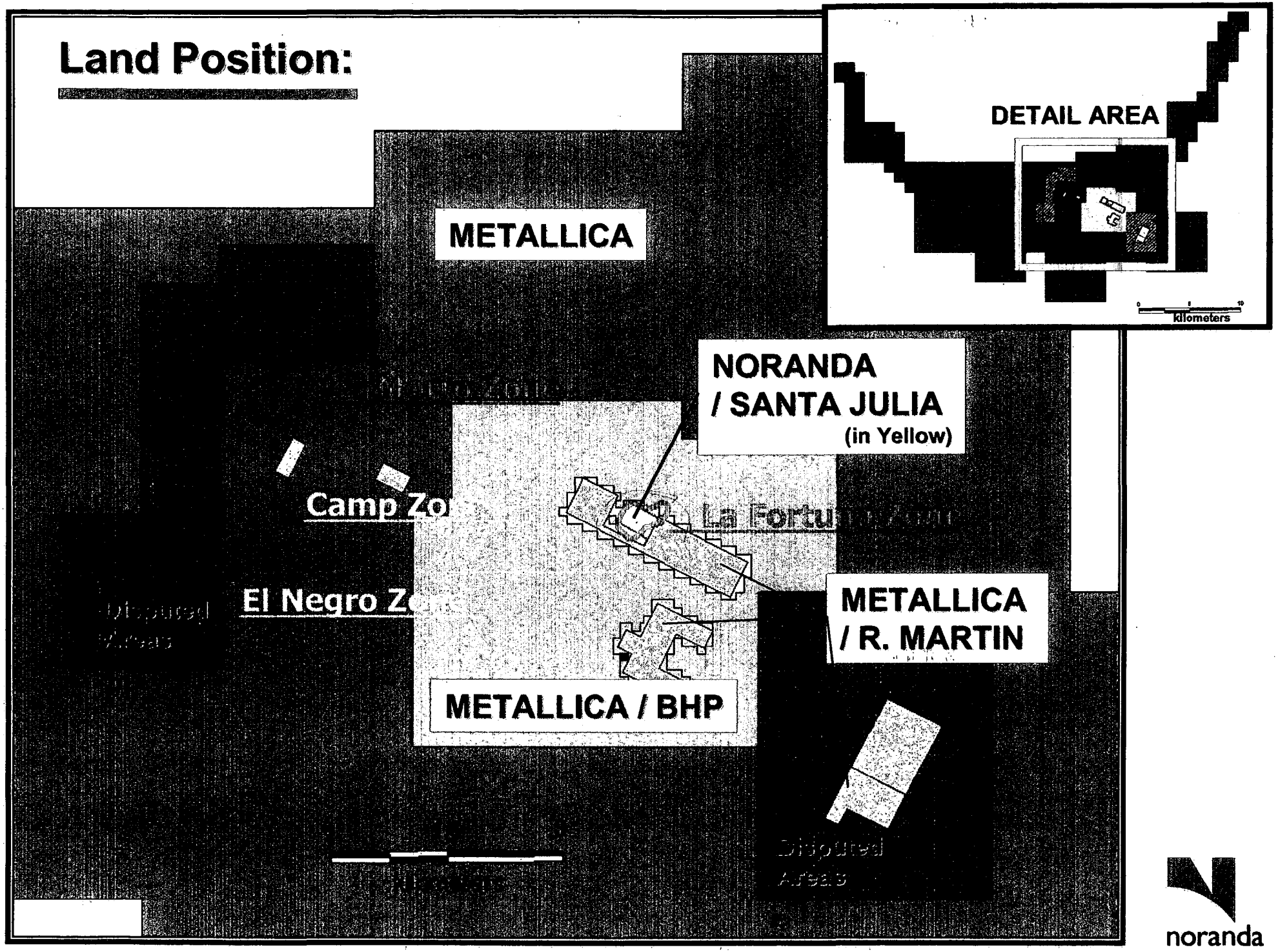
LEGEND

- QUATERNARY
- TERTIARY AND QUATERNARY VOLCANICS
- TERTIARY GRAVELS
- TERTIARY
- CRETACEOUS
- JURASSIC
- PALEOZOIC
- PROJECT
- ACTIVE MINE

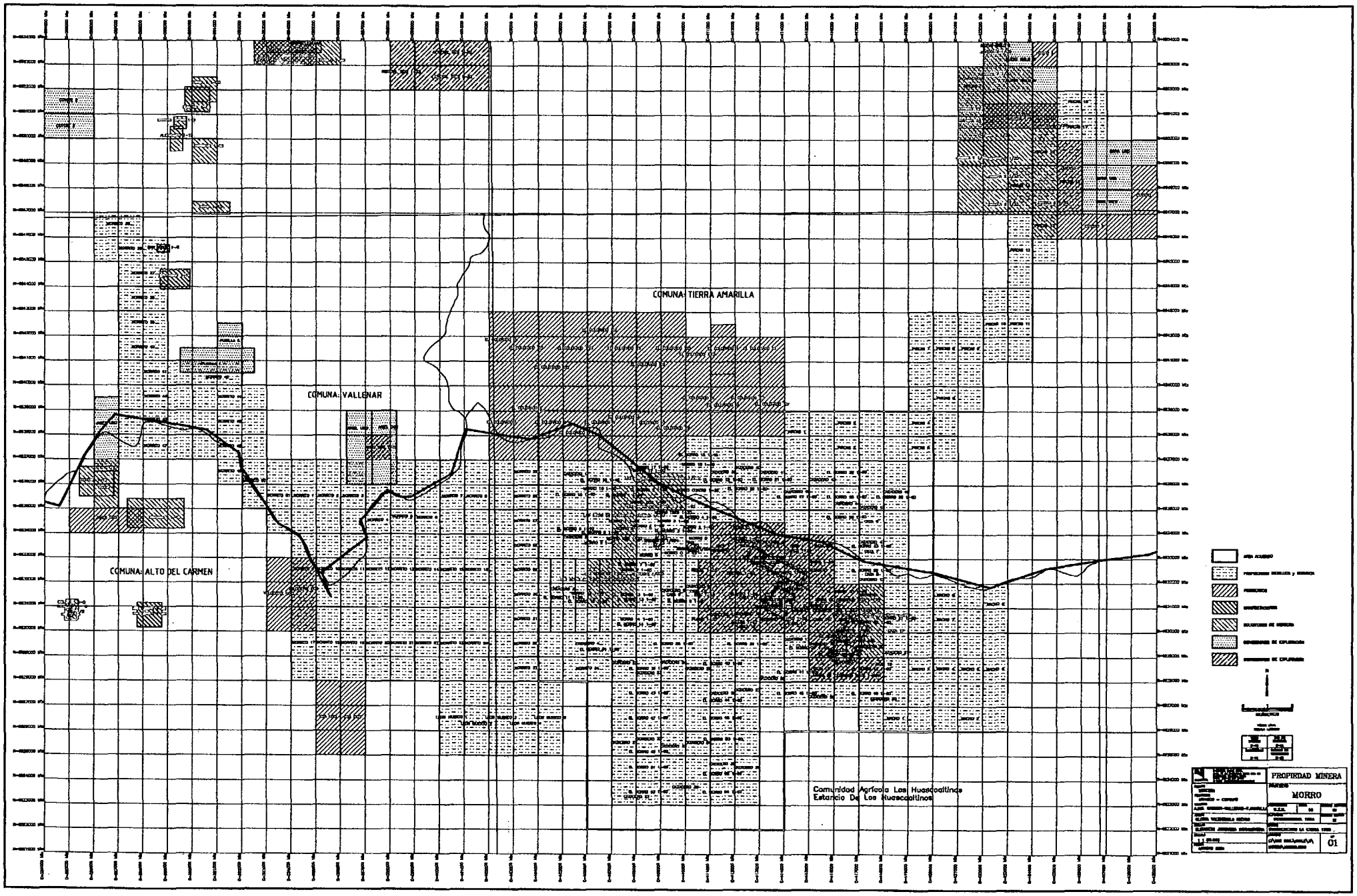
Figure 1

noranda

Land Position:



noranda


COMUNA: TIERRA AMARILLA
COMUNA: VALLENAR
COMUNA: ALTO DEL CARMEN
Comunidad Agrícola Los Huascoaltinos
Estancia De Los Huascoaltinos
PROPIEDAD MINERA
MORRO
01

Item 7: Accessibility, Climate, Local Resources, Infrastructure, and Physiography

The El Morro District is located in Region III (Atacama) of northern Chile, approximately 80 kilometers east of the town of Vallenar. The district lies in the high Andes, between 3,800 and 4,250 meters above sea level, and is characterized by a relatively mild relief. The prevailing climate is of the high cordillera type, with freezing temperatures and moderate snowfalls during March to October and dry, cool summers. Field seasons are usually limited from October to April, depending on winter climatic conditions associated with the high altitude. Vegetation is composed of hard grass and sparse, low bushes, typical of the cold cordilleran climate. Guanacos, foxes, hares, mice, vicuñas and numerous cordilleran birds constitute the fauna. Permanent water flow is observed in several nearby streams, which drain either to the Copiapo River or to the Huasco River watersheds. Several permanent ice caps are located to the east near the Argentine international border. Photographs at the end of this report section illustrate the general characteristics of the property:

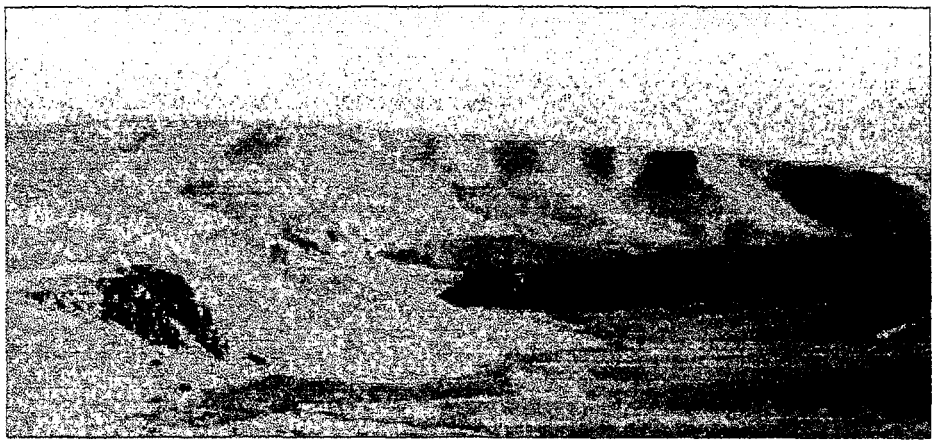
Photograph 1 El Negro Area
Photograph 2 El Morro Area
Photograph 3 La Fortuna Area

Access by road from Vallenar is approximately 140 kilometers and consists of a 45 kilometer long paved road up the Huasco river valley to Alto del Carmen, a 25 kilometer long well maintained dirt road to Chanchoquin, and a 70 kilometer narrow gravel road to the project. The closest community is El Transito with a population of 1,000, located approximately 75 kilometers by road from the property.

A wooden camp at the project hosts the geology personnel while drill contractors bring their own accommodations. The only human activity other than that related to the project is goat herding, which gravitates around the grass covered river valleys. Goat cheese and dried meat are produced during the summer months. No infrastructure exists other than the access road.

The surface rights belong to the Farmer's Community Los Huascoaltinos, who grant right of way and exploration rights to Noranda on a yearly basis.

Photograph 1 – El Negro Area



Photograph 2 – El Morro Area

Photograph 3 - La Fortuna Area

Item 8: History

According to the first available written information copper-gold mining activity existed in the district sometime before 1931. The La Fortuna mine and other smaller workings were in the area. Various reports mention open pits and vertical shafts working in copper oxides, and an estimated reserve of 3.5 to 4.0 million tonnes at 7 to 9 percent copper. Secondary sulfides were extracted at greater depths. It is not until the later years of the 1980's that reference is found about "modern" exploration, by various companies.

BHP started work on the La Fortuna project in late 1992 and by 1994 had completed exploration in the La Fortuna, El Negro and Cantarito targets, the latter an epithermal gold occurrence. A porphyry copper-gold model was interpreted for the district; however, the true potential of the La Fortuna zone was not recognized. Weak attempts to acquire the Santa Julia property were made with no success. BHP concluded that the company's expectations were not met in any of these areas and ceased activities by mid 1994, but maintained the claims.

Seeking a gold prospect, and based on the Cantarito epithermal gold occurrence, Metallica Resources Inc. joint ventured the La Fortuna area with BHP in July 1997. Metallica conducted general reconnaissance, geochemical and geophysical studies during years 1997 and 1998. In June of 1998 Metallica completed and executed the Martin purchase option agreement. In 1999 Metallica staked concessions surrounding the La Fortuna property and drilled its wholly owned El Morro area. Porphyry type copper-gold-molybdenum mineralization was intersected at the El Morro area. Metallica and BHP renegotiated the joint venture at La Fortuna into a Metallica option to purchase. At this point, Compañía Minera Hornitos tried to recover expired mining claims that had been present in the area in 1994, to which Metallica responded by filing a lawsuit in July 1999. During this period, the important potential of La Fortuna area was recognized and further attempts were made to negotiate the acquisition of the Santa Julia property.

The results attracted the attention of Noranda Chile S.A., who signed a Joint Venture agreement with Metallica in September 1999, and committed to continue the exploration of the project, with an option to acquire up to 70 percent of the property. The agreement included the Martin and BHP options to purchase owned by Metallica.

During the 1999-2000 campaign, primary attention was paid to the El Morro area, with some preliminary but crucial drilling was done at La Fortuna. At El Morro grade and continuity of mineralization were less than expected. However, the La Fortuna results were very encouraging and it became evident that the Santa Julia property, lying central to the La Fortuna system had to be acquired.

The 2000-2001 exploration campaign centered on the La Fortuna area. An agreement was reached to acquire the Santa Julia property and in early 2001 the Santa Julia was drill tested resulting in the discovery of a major mineralized porphyry body. Simultaneously, the El Negro area was drilled revealing low-grade copper-gold mineralization.

Specific details of each exploration campaign are presented in Item 12: Exploration.

Item 9: Geological Setting

9.1 Lithology

Regionally, the district is located in the Chilean high Cordillera, where the backbone unit is made up of Paleozoic to Permo-Triassic crystalline and volcanic rocks, broken up in segments by means of a series of major faults, most of them reverse. In this part of the country, there is a slight change in the direction of these structures, passing from a dominant NS attitude to the south, into a more NNE to NE trend northwards. This shift in direction appears to be associated to a corridor of NW, transpressional faults, with sinistral displacement.

Within this Paleozoic to Triassic basement, local graben structures are filled with and have preserved younger stratified rocks, going from marine sequences to continental volcano sedimentary units. The El Morro-La Fortuna areas lie in one of these graben basins, a 16 kilometer wide feature controlled on both sides by regional NS to NNE faulting. The western graben-fault could correspond to the south extension of the Domeyko fault system, the main controlling feature for the northern Chile copper porphyry belt, represented by the Collahuasi, Chuquicamata, La Escondida, El Salvador and Potrerillo mines.

The El Morro-La Fortuna copper-gold-molybdenum mineralized system represents the southernmost extension of the classic Chilean Oligocene porphyry copper belt, more than 300 kilometers south of the Potrerillos district, and is the only known gold-rich porphyry occurrence of this age in the country.

Within the El Morro La Fortuna graben, the stratigraphy is grouped into three broad units: a Permo-Triassic basement, covered by Jurassic and Tertiary rocks. The Permo-Triassic basement rocks, located at the central south sector of the project area, are composed mainly of rhyolitic crystal to lapilli tuffs and ignimbrites, with minor interstratified dacite flows. They form a massive, high relief ridge, surrounded on its eastern, northern and western sides by younger Jurassic rocks. They are tentatively assigned to the Pastos Blancos Formation, and constitute the oldest rocks in the area.

The Jurassic units consist of a volcano-sedimentary package of interbedded dacite tuffs, sandstones, conglomerates, and volcaniclastic rocks, capped by a 10 to 15 meter thick quartz-eye rhyolite welded tuff and a sequence of fine, sub-angular fragmental conglomerate and sandstones. The rhyolite, welded tuff constitutes an excellent marker horizon, which can be followed throughout the district. These strata were assigned tentatively to the Quebrada Monardes formation (Upper Jurassic-Lower Cretaceous).

To the west of the project area, these units are covered with Tertiary dacitic ignimbrites and andesitic tuffs, agglomerates and flows, assigned to the Eocene.

The latest stratigraphic unit of relevance is a sub-horizontal terrace deposit that partially covers all other rocks in the El Morro - La Fortuna graben. It is a thick sequence, locally in excess of 300 meters, of poorly consolidated pediment sediments composed of alluvial sands and gravel resulting from erosion associated to the last episode of basement uplifting.

Figure 3 - El Morro Project Stratigraphy illustrates the general stratigraphic column of the El Morro property.

9.2 Structure

The El Morro-La Fortuna areas lie at the intersection of the main NS - NE regional system, with a NW, transpressional trend, which averages N56°W at El Morro. At project scale, the porphyries of Tertiary age and the related mineralization, took advantage of this zone of weakness for emplacement. The NW system is well represented at El Morro an La Fortuna areas, where the dominant sheeted vein

pattern, silica ledges and local faulting have this trend. The NS to NE directions are seen mainly at the El Morro zone, featured by the Altares, Pajonales and Contacto faults. Also many of the Tertiary intrusive bodies like andesite and porphyry dykes, follow the same pattern, with NW and NE directions.

9.3 Intrusives

The intrusive rocks are represented by andesitic dikes and porphyry stocks and dikes. The andesites constitute minor sills and stocks intruding the Jurassic and Tertiary units throughout the district. Typically, they display trachitic texture or strong vesiculation towards the margins of the intrusions.

The porphyry bodies are of primary importance for the district, from the economic standpoint, as some of the units are at the origin of the copper - molybdenum or copper - molybdenum - gold type of mineralization at El Morro - El Negro - La Fortuna. The age of this porphyry activity has been bracketed by BHP between 36 and 30 million years.

Petrographic studies indicate that the facies related to mineralization are of dacite or granodiorite composition and are hydrothermally altered to strong potassic and/or phyllic assemblages. Porphyries of dioritic composition, considered to be post mineral, are usually less affected by alteration. Studies carried out by Metallica using whole rock chemical analysis (1999), show that these rocks are derived from magmas of calc-alkalic composition, which relate to porphyry copper - molybdenum systems.

9.4 Mineral Occurrences

The three main hydrothermal alteration systems with associated copper-gold-molybdenum mineralization, at the La Fortuna, El Negro and El Morro areas, are related to intrusives. The largest hydrothermal alteration system is the La Fortuna-Cantarito area located in the northeast corner of the district. A quartz-sericite alteration assemblage covers a surface area in excess of 1.2 square kilometers. At the center of this alteration system a dacitic porphyry body intrudes andesitic conglomerates and dacite tuffs.

Approximately three kilometers to the south west of La Fortuna is the El Negro prospect. Here, a mineralized quartz-stockwork zone is developed at the contact between potassicaly altered granodioritic porphyry and andesitic sandstone-conglomerate sequences. The potassic (biotite) altered area covers about 0.5 square kilometers. The potassic alteration passes almost directly into propylitic alteration with only local phyllic or argillic alteration assemblages.

On the west side of the district, four kilometers west of La Fortuna at El Morro the existence of an intrusive is circumstantial. Here, the geophysical data, the geochemical and alteration patterns, and the presence of peripheral porphyry dikes, suggest the existence of an intrusive at depth. A northwest oriented quartz stock work zone occurs in the central zone of El Morro. The hydrothermal alteration covers a surface area of approximately one square kilometer and is characterized by kaolinitic external halos, that grade inward to quartz-sericite alteration and a potassic core.

Plate 1 - El Morro District 1:10,000 Geology illustrates the general geology of the El Morro property.

EL MORRO PROJECT STRATIGRAPHY

1999

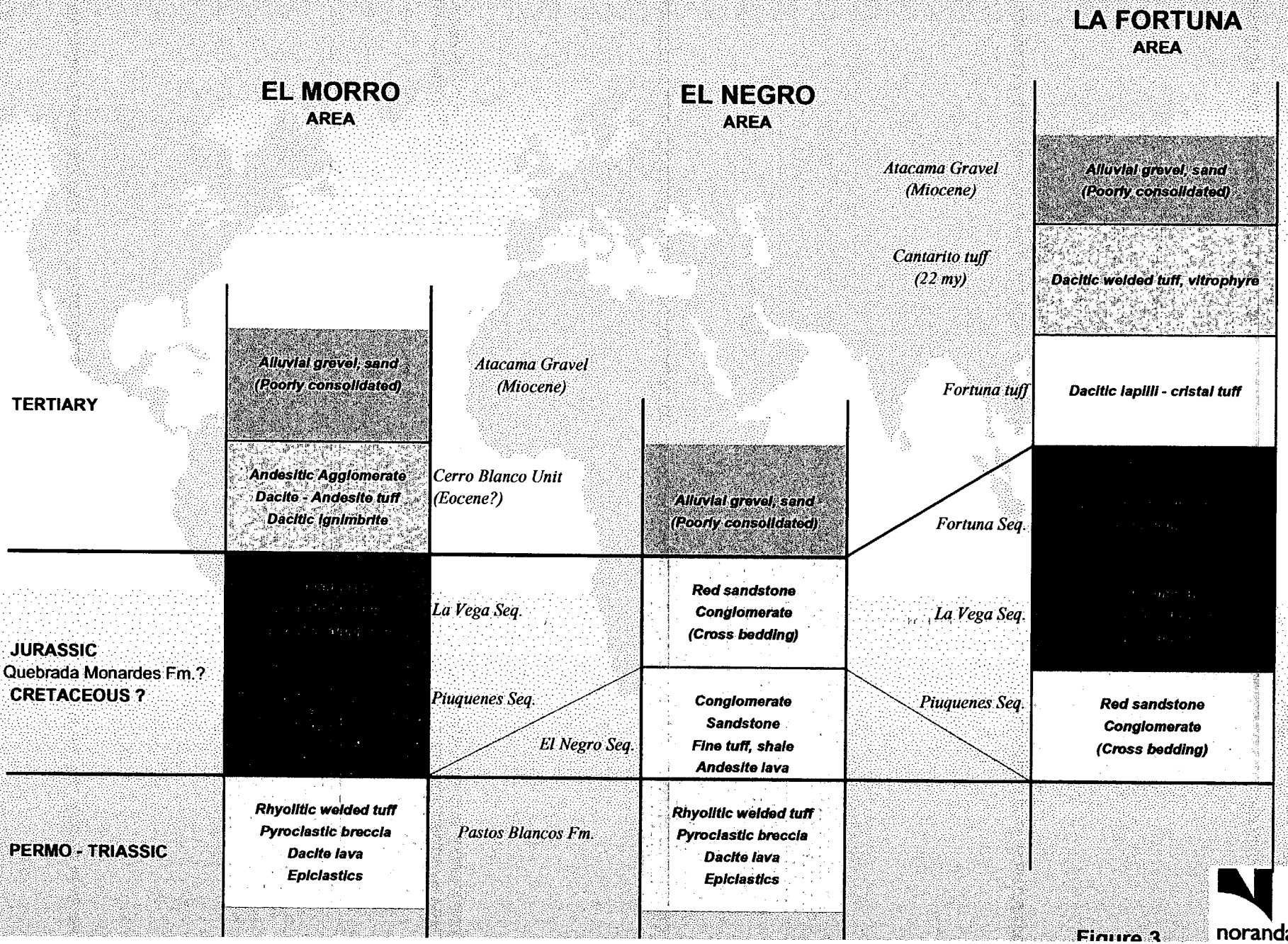
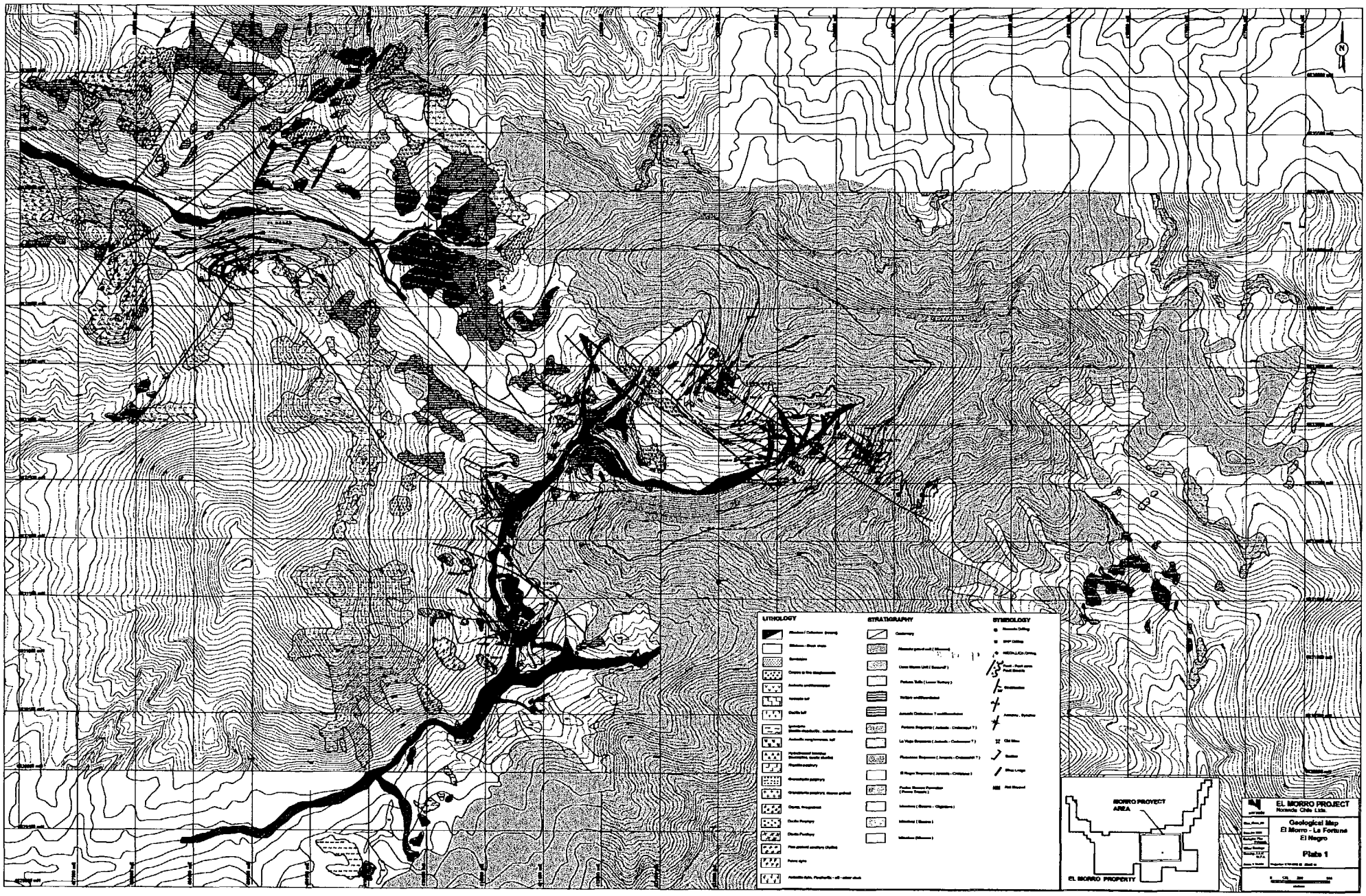


Figure 3

noranda


LITHOLOGY
STRATIGRAPHY
STRUCTURE
MORRO PROYECT AREA
EL MORRO PROPERTY
EL MORRO PROJECT
Rosendo Chile Ltda.
Geological Map
El Morro - La Fortuna
El Negro
Plate 1

Item 10: Deposit Types

10.1 El Morro Area

Based on field observations, the stratigraphy is grouped into three broad units: a Permo-Triassic basement, Jurassic and Tertiary rocks. The Permo-Triassic basement rocks are composed mainly of rhyolitic crystal to lapilli tuffs and ignimbrites, with minor interstratified dacite flows. The younger Jurassic rocks consist of a volcano-sedimentary package of interbedded dacite tuffs, sandstones, conglomerates, and volcaniclastic rocks. To the west of the project area, these units are covered with Tertiary dacitic ignimbrites and andesitic tuffs, agglomerates and flows.

At least two major, northeast trending faults are visible along the contact zone between the Jurassic and the Tertiary units. Andesitic dikes, sills and small stocks intrude the Jurassic and Tertiary units with frequent porphyritic texture, but of pre-mineral origin. Independently from the andesites, a granodioritic porphyry of very limited distribution was identified in outcrop and in diamond drill core. This porphyry has been described as a biotite – amphibole granodiorite. Besides the granodiorite porphyry, petrographic studies on surface and core samples have also recognized another intrusive unit in this area, a dacite porphyry (feldspar, biotite) of difficult macroscopic identification because of the fine-grained texture and advanced level of hydrothermal alteration.

Within the Triassic basement, local graben structures are filled with and have preserved younger stratified rocks, going from marine sequences to continental volcano sedimentary units. The El Morro area lies in one of these graben basins, at the intersection of the main NS – NE system. The El Morro porphyry intrusion was emplaced at the intersection of the two fault systems. The sheeted vein pattern visible at the El Morro mineralized zone trends to the NW. Other intrusive bodies like andesite and porphyry dykes, follow the same pattern, with NW and NE directions.

Based on surface mapping, three main alteration mineral assemblages were defined in the area. They correspond to high temperature – high pressure, potassic - propylitic assemblages overprinted by phyllic, and intermediate argillic assemblages.

Plate 2 - El Morro Area 1:5,000 Geology illustrates the geology of the El Morro area.

10.2 La Fortuna Area

La Fortuna is a classic copper-gold porphyry-style deposit, the first one of this type found in the Eocene-Oligocene Porphyry Copper Belt of northern Chile. All the other porphyries in the country, found in the Maricunga belt, are of Miocene age. Mineralization is related to cylindrical or dykelike, multistage subvolcanic intrusions of granodioritic to dioritic composition, emplaced in a gently east dipping sequence of andesitic conglomerate, tuffs and sediments. Multistage intrusions are present at La Fortuna, related to Oligocene sub-volcanic igneous activity, which is at the origin of all the mineralized porphyries at the district.

10.21 Lithology and Structure

Frequently, at the contact zone between wallrock and porphyry units, hydrothermal breccias are seen, with strongly altered matrix evidencing superimposed alteration events. Typical assemblages are quartz-alunite and tourmaline-sericite. Lithic fragments are porphyritic, in some cases with mineralized stockwork. Locally, the breccia itself has some minor quartz veining. The breccias usually have low-grade mineralization and hardly ever crop out.

All of these lithologies are covered discordantly by the poorly consolidated Atacama Gravel unit that forms all of the high ridges around the area. These gravels formed essentially as pediment deposits,

composed of alluvial sands and gravels resulting from erosion of the important basement block located directly east of La Fortuna.

At the base of this sedimentary package and to the east of the area, a layer of welded tuff (Cantarito Tuff) and block-and-ash deposit is present. An explosive event was probably at the origin of these deposits, which culminated with the emplacement of a dacite dome observed at the headwaters of the Cantarito creek. A maximum age for this package is given by the Cantarito tuffs, dated at 22 million years.

The main structural trend present in the area, documented by surface mapping, geochemistry, and geophysics, is N60°W. Most of the sheeted veining, silica ledges, quartz-alunite veins and major faults are oriented NW. Molybdenum and gold surface soil anomalies have the same trend, as well as the gradient array IP and resistivity anomalies. However, there are some indications of a deeper, more subtle structural control, with a NE or NNE trend similar to the El Negro intrusive trend.

10.22 Intrusives

Granodiorite Porphyry

The older Santa Julia intrusives are of granodioritic, or quartz monzonitic composition, consisting of a medium to fine-grained quartz-feldspar groundmass and plagioclase phenocrysts. Corroded quartz eyes may be locally present. Mafic minerals may exist but are completely altered. This rock unit is affected by strong, multidirectional veining and multiple alteration events, and is the main productive unit found so far. The shape or extension of this porphyry is unknown, as it does not out crop and is covered either by colluvium or Atacama gravels.

Feldspar – Amphibole Porphyry

This porphyry unit has also granodioritic composition but because of less intense veining and alteration, mafic phenocrysts are still visible, usually feldspar, amphibole and locally biotite. Mineralization, although present, is lower grade.

Diorite Porphyry

The diorite is a post mineral porphyry unit, usually present as dykes or small plugs, with amphibole-feldspar phenocrysts, and local, minor biotite or quartz. The porphyries intrude the local stratigraphy, constituted by a volcano-sedimentary sequence composed of sandstones, tuffs and andesitic conglomerares. Near the contacts, the sequence is strongly affected by alteration and is very fractured and faulted. Also, little mineralization is seen in the volcano-sedimentary units, usually the only sulfide is pyrite.

10.23 Alteration

The full range of alteration assemblages, typical of copper-gold porphyries, is present at La Fortuna. The outcropping portion of the deposit clearly shows a telescoped suite of events, which goes from the deep, high temperature-high pressure potassic alteration type into the intermediate argillic, phyllic and finally advanced argillic types, all in a vertical distance no more than 200 meters.

Advanced Argillic Assemblage

This alteration suite, with the association quartz-alunite-kaolinite (dickite), is widespread in the upper portions of the system. Downwards, progressively it is restricted to structures and fault-zones, until it fades out below the 4100 elevation.

Intermediate Argillic Assemblage

This alteration type, characterized by the illite-smectite-chlorite association, is the main overprinting alteration event seen in the porphyry units at the Santa Julia drilling. It gives the rock a diagnostic greenish color and a medium to low hardness. It is common below 4000 meters and still present at 3500 meters.

Phyllic Assemblage

Phyllic alteration, with the muscovite-tourmaline (pyrite) assemblage, is seen to coexist with the above mentioned advanced argillic type in the upper portions of the system and the intermediate argillic type lower down. As evidenced by the drilling, at lower levels the potassic suite persists, with strong intermediate argillic and local phyllic overprint.

Potassic Assemblage

This assemblage, hardly visible at surface in the Santa Julia area, is clearly present in most of the holes drilled in porphyry. It is characterized by fine, flaky biotite, hematite, magnetite and potassium feldspar (pink orthoclase). In all the drilling, this assemblage is overprinted at various degrees by the previous two types. This alteration type is related to polydirectional quartz veining, particularly in the Granodiorite Porphyry unit, although also affecting the Feldspar – Amphibole porphyries. The very strong quartz stockwork seen at the top of the La Fortuna Hill, where the Advanced Argillic assemblage is widespread, gives an idea about the amount of telescoping which affects this system.

Plate 7 - La Fortuna-El Negro Area, 1:5,000 Geology illustrates the geology.

10.3 El Negro Area

El Negro is considered to be a suite of porphyritic intrusives ranging from dioritic to granitic, emplaced in the El Negro volcano-sedimentary sequence. Phenocrysts are usually feldspars and amphiboles in the more basic facies, while the more acid ones have feldspar, biotite and quartz phenocrysts. Locally, a strongly altered aplitic rock composed of a saccaroidal aggregate of quartz feldspar is seen, as small plugs or dykes in the other units. A similar aggregate is seen as stockwork. The individual intrusive pulses usually are small in size, not greater than 200 to 300 meters in diameter, or occur as dykes. The most productive porphyry unit encountered to date in the area is granodioritic, with feldspar-biotite-quartz phenocrysts and medium grained groundmass. This unit is called the El Negro Porphyry.

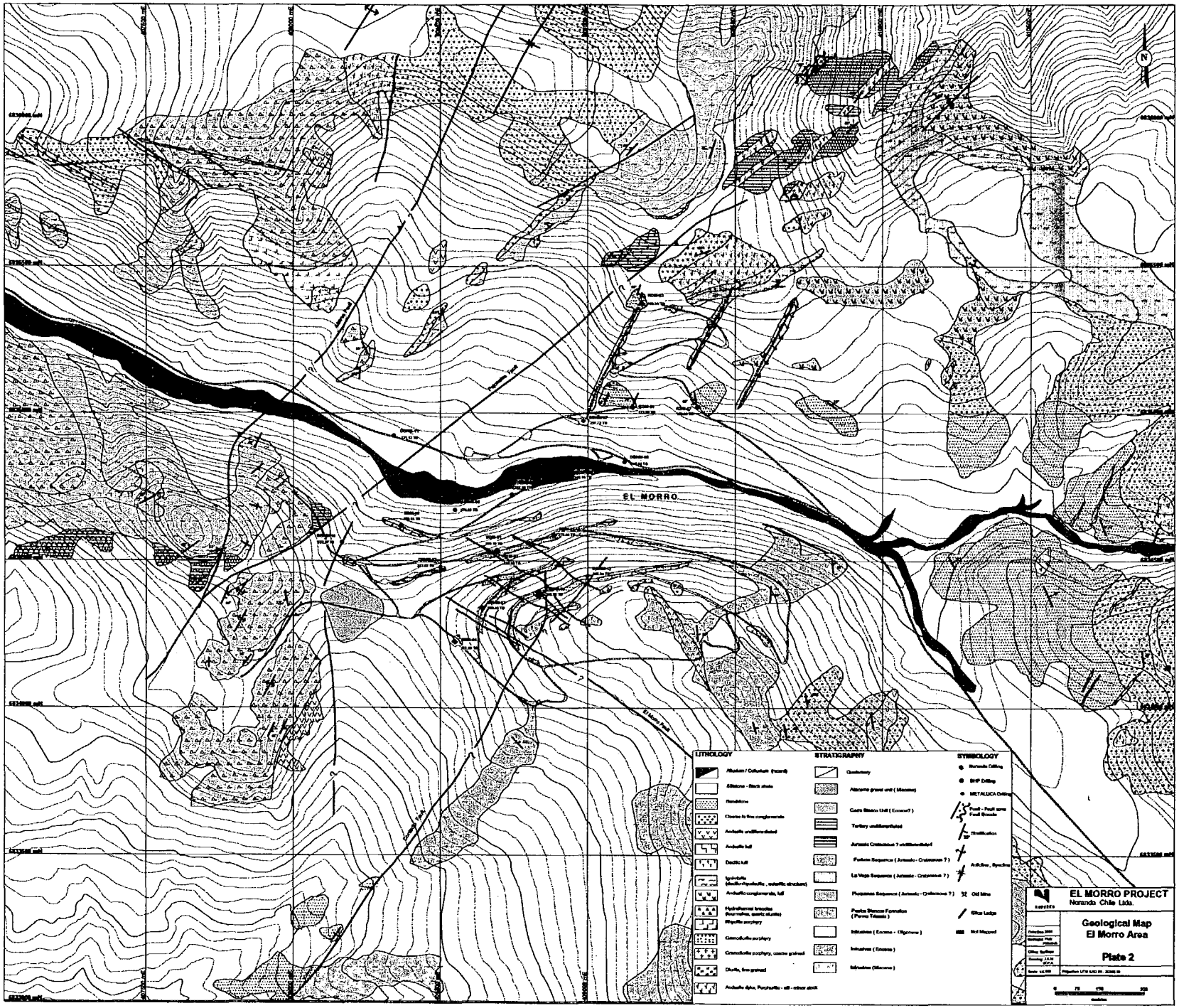
Wallrock is usually constituted by aphanitic andesite, sandstone, micro-conglomerates or fine grained crystal tuff, arranged in a gently east dipping stratified sequence.

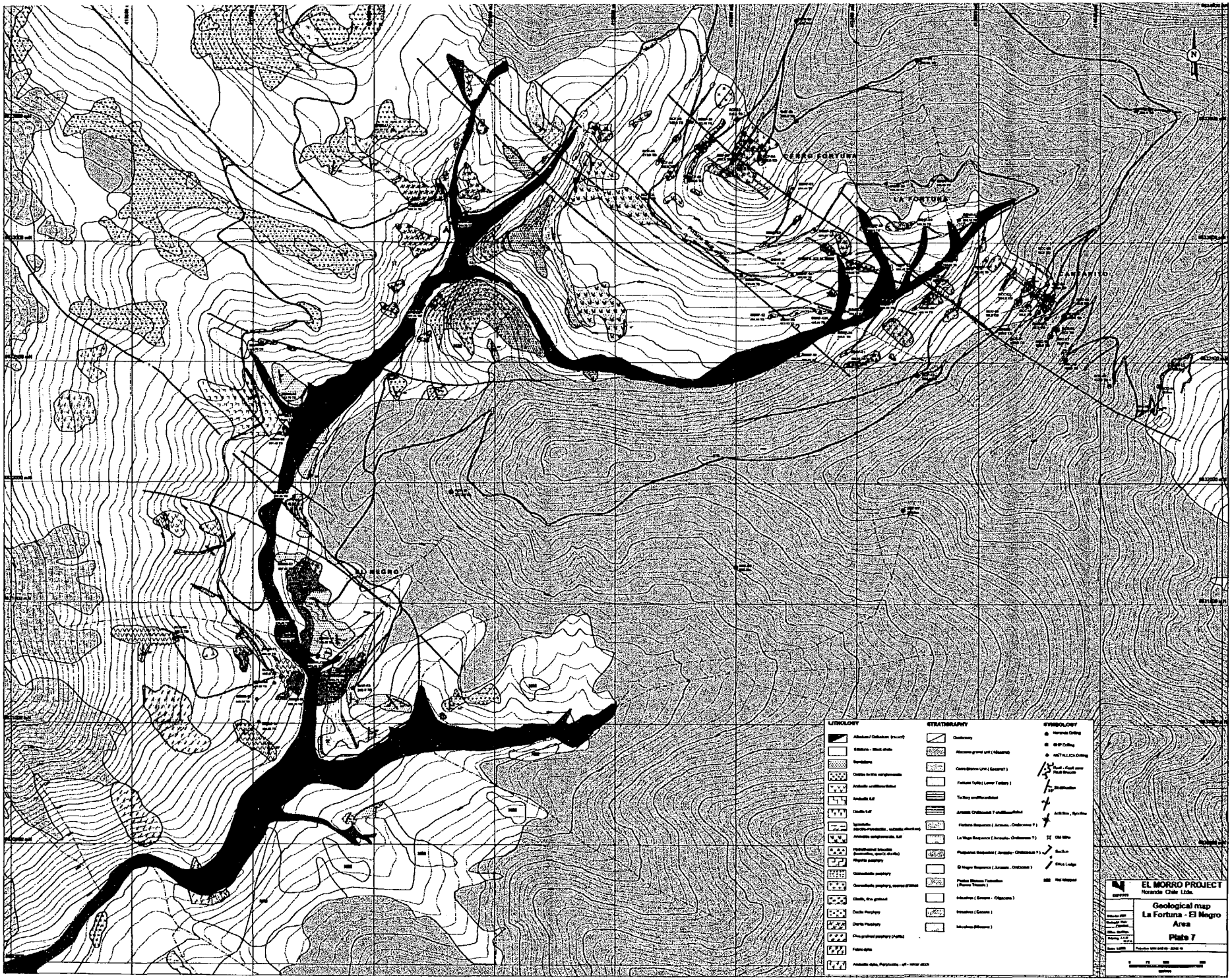
Similar to the general district trend, faulting and some of the veining are NW oriented, however, the intrusives follow a rough NS to NNE direction, or locally even an EW trend. This could be the reflection of a deeper, regional structural control.

The El Negro alteration environment is essentially restricted to potassic assemblages, considered as potassic metasomatism. Main alteration minerals are fine biotite, magnetite and minor amounts of potassium feldspar. Most frequently this alteration type is accompanied by strong veining.

Other alteration types are seen only locally, such as clay or phyllic alteration. The possible occurrence of a skarn type association is under study. Outwards from the main alteration zone, propyllitic and chloritic alteration is seen.

Plate 7 - La Fortuna-El Negro Area, 1:5,000 Geology illustrates the geology of the El Negro area.


EL MORRO
LITHOLOGY
STRATIGRAPHY
SYMBOLOGY
EL MORRO PROJECT
Noranda Chile Ltda.
Geological Map
El Morro Area
Plate 2


CERRO FORTUNA
LA FORTUNA
EL NEGRO
LITHOLOGY
STRATIGRAPHY
SYMBOLOGY
EL MORRO PROJECT
Horande Chile Ltda.
Geological map
La Fortuna - El Negro
Area
Plate 7

Item 11: Mineralization

11.1 El Morro Area

Knowledge about the mineralization system and grade distribution at El Morro is based on diamond drill holes and indicates that it corresponds to a porphyry copper-molybdenum environment, with high gold content. A clear zoning in metal distribution is observed, horizontally as well as vertically. A central, copper-gold rich zone is surrounded by a pyritic halo with classic vertical zoning. A leached horizon overlies an upper secondary enrichment zone and a lower primary sulfide zone. Typically, the leached horizon does not show copper oxides, although it may have higher gold values.

According to the drilling information, which now consists of 12 diamond and 7 reverse circulation holes, the sulfide zone starts with a secondary enrichment blanket between 24 and 224 meters thick. Arial distribution of this secondary mineralization, although detected over a wide area (500 meters x 1000 meters), is stronger at a central, oval shaped 350 meter x 450 meter zone, with a thickness varying between 100 and 230 meters and grade, ranging from 0.45 to 0.83 percent copper.

The main mineral of the secondary enrichment zone is chalcocite, which appears disseminated or in veins, as coatings on pyrite or replacement rims on chalcopyrite. The copper grades are usually one to two times higher than in the primary zone. Gold grades are consistently lower than in the leached horizon and molybdenum may also slightly decrease.

Below the secondary enrichment zone, weak supergene chalcocite continues for a few meters, until only primary sulfides are present: pyrite, chalcopyrite and molybdenite, rare bornite and covellite. Coincident with the higher-grade zone described for secondary copper, the primary mineralization has better values below the same zone, averaging from 0.21 to 0.31percent copper, with molybdenum and gold values between 81 and 330 parts per million and 0.02 and 0.3 parts per million respectively.

Outwards, a zone of low-grade primary mineralization is seen over an area in excess of 0.5 square kilometers. The extent of this zone, running over 0.1percent copper, is still not well defined, although seems to be closed to the south, southeast and southwest.

In the primary sulfide zone, the copper-molybdenum mineralization occurs mostly in zoned quartz veinlets and to a lesser extent, as fine-grained dissemination throughout the rock.

11.2 La Fortuna

The available information indicates a consistent picture of mineralization in a surface area of roughly 1,200 meters x 900 meters, with a known depth of 722 meters. Porphyry-type copper-gold mineralization at La Fortuna includes the typical vertical zoning, with a leached horizon, a discontinuous copper oxide zone, an enrichment zone, and primary sulfides.

11.21 Leached Horizon

Conditions for leaching and secondary enrichment are considered to be favorable in this project. A 10 million year period, between the formation of the deposit and the Miocene gravel cover, is enough time to expose the deposit and leach it to the point it is now found. Moreover, this situation is similar to other known Eocene-Oligocene porphyry deposits in the country. A major regional uplift is also necessary to accomplish this process, possibly documented by the presence of a major Paleozoic structural block to the east of the project, set in place by reverse faulting previous to the Atacama gravel deposition.

The leached horizon is extremely variable at La Fortuna. Thickness of the leached horizon as great as 300 meters can coexist with places where there is hardly any, like at Santa Julia mine. This suggests

structural, mineralogical or lithological control of the leaching process, or a combination of these factors. Copper grades in the leached zone are usually 0.01 to 0.05 percent.

11.22 Oxide Zone

As a general rule, where mineralized porphyry is close to surface, the leaching is not well developed and copper oxides exist, indicating lower pyrite content and better neutralizing conditions of the rock. Therefore, the holes drilled in porphyry have copper oxides above the sulfide zone, or in a mixed assemblage with the sulfides. This situation is best observed at surface, in the Santa Julia mine. The usual oxide minerals are atacamite, chrysocolla and minor copper wad. The thickness of the oxide zone may vary from tens of meters up to 100 meters, with grades reaching 0.4 percent copper. Where mixed copper oxides with secondary enrichment exist, much higher grades are obtained.

11.23 Secondary Enrichment

Most of the drilling in the area shows secondary enrichment, although sometimes in minor quantities, in all of the intersected lithologies. The higher copper grades, reaching values of up to 7 percent, are seen in wallrock, near the margins of the mineralized porphyry stock, associated with strong faulting and hydrothermal breccias. Enriched values at the porphyry itself are typically in the 0.6-0.8 percent copper range, although locally may reach 1 percent copper. Thickness may reach 100 meters, but typically is in the 30 meter to 60 meter range. Fault zones favor the development of thicker enrichment. Secondary sulfide minerals are chalcocite and covellite, deposited either on chalcopyrite-pyrite or as dissemination and fracture coating.

Elsewhere, outside the mineralized zone, even though there is secondary mineralization, grades and thickness are less important.

11.24 Primary Sulfides

The better grade primary copper sulfides are associated to the Granodiorite Porphyry lithology unit, together with significant amounts of gold. Sulfide mineralogy is represented by chalcopyrite, bornite and local minor amounts of covellite-chalcocite. Pyrite is subordinate. Gold was not seen, but strictly follows copper grades in an almost 1 to 1 relation (percent copper to gram per tonne gold). Molybdenum is usually between 30 and 100 parts per million.

The sulfides occur as fine dissemination or in quartz veinlets, but also are seen as fine sulfide veining. Veinlets in the porphyries tend to be arranged in all directions, especially at depth. Higher up, into the epithermal zone of alteration, a more sheeted veining is observed, with prevailing NW direction. Veinlets seen in the porphyry are of several types, the classic ones for this type of deposit:

- Quartz veinlets with magnetite (or hematite), K-spar and occasional chalcopyrite-bornite and no alteration halos
- Quartz veinlets with chalcopyrite, bornite, and pyrite with no alteration halos
- Sulfide veinlets, with pyrite-chalcopyrite, and a sericitic halo

Grade distribution in the Granodiorite Porphyry unit is laterally and vertically uniform, between 0.5 and 0.7 percent for copper. Higher-grade zones exist, especially for gold, which may reach 1.4 gram per tonne over 158 meters (DDHF-29).

The Feldspar -Amphibole Porphyry is the other productive unit, with copper values fluctuating between 0.1 and 0.3 percent copper and similar gold (0.1 gram per tonne – 0.3 gram per tonne). This rock is found in a few holes and seems to outline a dykelike body on the northern limit of the mineralized area, and projecting westward, into the Fortuna west zone.

11.3 El Negro Area

Although no important mineralization and continuity was encountered, most of the drilling came with values of some interest, related to primary sulfides. Sulfides are found almost from surface, most of the time mixed with copper oxides to a depth of a few tenths of meters. Secondary enrichment is absent or exists at a minor scale. Primary mineralization continues lower down, composed of variable amounts of pyrite, chalcopyrite and bornite. Magnetite is a common constituent.

Item 12: Exploration

Over the history of the property, BHP, Metallica, and Noranda have conducted significant exploration work programs. A summary of the general scope of the investigations is presented in Table 7 - Summary of El Morro Exploration Programs. All drilling will be addressed in Item 13: Drilling. This section will present a summary of the other exploration activities conducted at the property.

12.1 General Geology

General geology includes such items as geological mapping, core logging, sample management, camp management, contractor management, geological analyses, and data interpretation. During the last field season of 2000/2001 work was carried out with a total of four geologists, three helpers, six drill controllers, four core splitters, one cook and one bulldozer operator.

Besides the in-house technical staffs of BHP, Metallica, and Noranda, over the history of the El Morro property several contractors and consultants have provided professional services to the exploration effort. Table 8 - Exploration Contractors provides a summary of the more important contractors and consultants.

All of the data and results provided from outside contractors and consultants were reviewed and evaluated by the in-house technical staffs of BHP, Metallica, or Noranda. In the opinion of the author, the technical database of the project has been collected in a professional manner and meets or exceeds industry standards for a project of this nature.

12.2 Geochemistry

12.21 Talus sampling

In 1998 Metallica conducted a talus sampling program at two different areas of the El Morro mineralized zone; a multi-element analysis of the northern zone, and a copper-gold-molybdenum analysis of the southern zone. The copper-gold-molybdenum anomalies confirmed the exploration potential of the El Morro area. The following figures present the results of the copper-gold-molybdenum geochemical sampling for the El Morro Area:

Figure 4 El Morro Area, Talus Geochem, Cu
Figure 5 El Morro Area, Talus Geochem, Au
Figure 6 El Morro Area, Talus Geochem, Mo

Continued interpretation of the geochemistry by consultant geochemist Mike Parr has resulted in the recommendation for additional drilling at El Morro. An exploratory hole 250 meters SE of RDM-7, with a minimum depth of 240 meters to reach possible deep-seated mineralization and at least two holes in the area north of holes DDHM-5 and 6 were suggested.

In 1999 Metallica completed a 100-meter x 100-meter grid talus sampling over the La Fortuna area. The copper-gold-molybdenum anomalies also confirmed the exploration potential at the La Fortuna area. Results for the La Fortuna geochemical sampling are presented in the following figures:

Figure 7 La Fortuna Area, Talus Geochem, Cu
Figure 8 La Fortuna Area, Talus Geochem, Au
Figure 9 La Fortuna Area, Talus Geochem, Mo
Figure 10 La Fortuna Area, Talus Geochem, Pb
Figure 11 La Fortuna Area, Talus Geochem, Zn
Figure 12 La Fortuna Area, Talus Geochem, As

Figure 13 La Fortuna Area, Talus Geochem, Sb
Figure 14 La Fortuna Area, Talus Geochem, V

A strong copper anomaly of 0.27 percent is present at La Fortuna coupled with high gold values of up to 0.32 gram per tonne. Molybdenum is anomalous, more or less coincident with gold. The anomaly distribution of lead, zinc, arsenic, antimony, and vanadium behave as expected in a porphyry system.

At the northern end of El Negro a zone identified as the Camp area has produced copper-gold-molybdenum geochemical anomalies covering a surface area close to 0.6 kilometer x 1.2 kilometer. A 50 meter long chip channel sample on a road cut near the camp, gave 0.26 percent copper, 0.13 gram per tonne gold and 22 part per million molybdenum. The area was tested in a preliminary manner by drilling with positive but low-grade results in copper, gold and molybdenum. This mineralization is considered to be discontinuous and it is not yet well understood.

12.22 La Fortuna Diamond Drill ICP Study

In order to define zoning of elements besides copper, gold, molybdenum, and silver in the La Fortuna system and also verify possible significant levels of deleterious elements (such as lead, arsenic, mercury, etc.), 5 percent of the sample population was tested by ICP analysis. The data was received only recently and interpretation of results is in progress. Preliminary observations show that no deleterious elements are present in major amounts. For instance, arsenic and lead are only sporadically above 100 part per million and most of the mercury values stay below 100 part per billion.

12.3 Geophysical Surveys

Initially the El Morro project was comprised of three separate geophysical grids known as El Morro, El Negro and La Fortuna, previously referred to as Cantarito. During 1998, Quantec Geofísica Limitada (Quantec) conducted a gradient array induced polarization (IP) survey at the El Morro project. During early 1999, gradient IP and ground magnetic surveys were conducted at the El Morro, El Negro and La Fortuna grids. From late 1999 to mid 2000, each of the grids was extended until they overlapped, effectively creating a single larger grid. Several reconnaissance lines were also surveyed on a separate grid, El Burro. Numerous lines were surveyed with dipole-dipole array IP at El Morro, El Negro and La Fortuna to provide better control and depth information for the anomalous zones. Some historical BHP airborne magnetic and radiometric information also resides in the El Morro geophysical database.

The IP and resistivity surveys were conducted in the time domain with the gradient, dipole-dipole, and pole-dipole arrays. The gradient array utilized current dipoles 2 to 4 kilometer in length. Station and dipole spacing were 100 meters. The dipole-dipole array with a dipole spacing of 200 meters was employed on the grids. The ground magnetic survey was conducted on the same lines and grids as the gradient array IP survey. Station spacing was 10 meters, and all data were corrected for diurnal drift using readings from a base station. A summary of the geophysical coverage is presented in Table 9 - Summary of Survey Coverage. Examples of the gradient IP, gradient resistivity, and magnetic data and coverages are presented in the following figures:

Figure 25 Gradient Array Survey: Chargeability Plan Map
Figure 26 Gradient Array Survey: Apparent Resistivity Plan Map
Figure 27 Ground Magnetic Survey: Pole Reduced Plan Map

Data quality for the project is generally considered good. The entire survey area was covered with gradient array IP/resistivity array surveying, and numerous selected lines were additionally surveyed with dipole-dipole array. Background chargeability values were similar for both array types, and consistent with normal background levels throughout Chile. Resistivity backgrounds were also comparable and consistent with background levels from this latitude and elevation in Chile. Although some differences may exist between values between the two different array types in some areas, this

is understandable and related to the varying penetration depths that the two different systems achieve in certain areas.

Geophysical surveying has been effective in mapping sulfide mineralization that could include copper and gold mineralization associated with porphyry systems. At least four mineralized systems have been defined in the work, all of which are interpreted to represent porphyry systems at different stages of advancement.

12.31 El Morro

At El Morro, a very large mineralized system is defined by the geophysics; a magnetic low over the system core with moderate to strong chargeability, and moderate to low resistivities. Peripheral to this core zone, is a very strongly anomalous chargeability zone with very low associated resistivity and a moderate magnetic anomaly that maps pyritic andesite.

12.32 La Fortuna

At La Fortuna, the porphyry system is well developed and an associated mineral deposit has been defined. This system displays all the typical geophysical signatures common to most economic porphyry systems: magnetic low reflecting a magnetite destructive phyllic alteration phase, moderate to strong chargeability indicating abundant presence of sulfide mineralization, and low resistivities indicating both the presence of mineralization and significant clay alteration. A large mineralized system is indicated by the geophysical data, and 3D modeling clearly depicts the additional potential the deposit offers.

12.33 El Negro and Camp Areas

The El Negro and Camp zones display strong magnetic anomalies indicative of potassic alteration, and therefore do not appear to have undergone a subsequent phyllic alteration stage. The El Negro system is quite large with the very well developed pyritic halo measuring at least 2 kilometers in diameter. It also shows a strong magnetic core indicative of strong potassic alteration. The Camp Zone is similar, but far more moderate in nature in all respects: moderate magnetic high, moderate to strong chargeability, and moderate (at best) low resistivity association

Table 10 - Main Geophysical Properties by Area provides a summary of the important geophysical attributes of each mineralized area.

12.34 Recommendations

Given the extremely positive results obtained from the La Fortuna porphyry deposit, and the amount of copper and gold mineralization throughout the various porphyries of this promising 'porphyry cluster', an aggressive expansion of the geophysical coverage is recommended. A program consisting of an additional 60 kilometers of dipole-dipole array IP/resistivity surveying is proposed. All new lines will be surveyed with ground magnetics, amounting to approximately 38 kilometers of new magnetic data. The recommended program covers the highest priority targets as defined by the magnetic information, alteration, and geological reconnaissance mapping.

12.4 Regional Exploration Targets

12.41 El Burro

The El Burro area at the southern end of the El Morro property, is a strong magnetic anomaly detected by the BHP airborne campaign but is totally covered with Atacama Gravels. Three reconnaissance pole-dipole IP/resistivity lines were completed over the El Burro area. Due to the low resistivities

associated with the Atacama gravels, the penetration depth actually achieved is not clear. All lines returned nothing but very low background values. Results are inconclusive.

12.42 Rincon de Cantaritos

This area, located 2 kilometers East and SE of the La Fortuna, is of some interest because of the scattered siliceous blocks, one of which assayed 0.3 gram per tonne gold, 6 gram per tonne silver, and 149 gram per tonne mercury. A N40°W trending fault zone where a narrow zone (1 to 5 meters) of quartz - alunite - barite alteration developed, gave 2.3 part per million gold. A nearby siliceous block, yielded 10 part per million gold. The origin of the siliceous material remains uncertain. Careful examination should be done on the NW part of the area where hydrothermal alteration might be hidden under Atacama Gravel cover.

12.43 Cerro Colorado

The area is covered by a south extension of the El Negro gradient array geophysics and shows, on the northern side, a combination of very strong IP response, low resistivity and a magnetic low, suggesting strong sulfide dissemination and magnetite destructive alteration. Exploratory drilling is recommended to check the stockwork and the anomalies.

Table 7 - Summary of El Morro Exploration Programs

Area	Geology	Geochemisrty	Geophysics
		BHP Exploration 1992 / 1993 Season	
La Fortuna	Geological mapping		T.E.M
Cantarito	Geological mapping		T.E.M
El Negro	Geological mapping	Chip	
Regional			Airborne Magnetics
		Metallica Exploration 1997 / 1998 Season	
El Morro	Mapping / trenching	Talus / PIMA alteration study	IP
La Fortuna	Geological mapping	Chip / PIMA alteration study	
Cantarito		Chip / PIMA alteration study	
		Enzyme leach / MMI profiles	
El Negro	Geological mapping	Chip samples	
Regional	Mapping / Landsat TM		Interpretation
		Metallica Exploration 1997 / 1998 Season	
El Morro	Geological mapping	Trench	IP / ground magnetics
La Fortuna	Geological mapping	Talus / trench	IP / ground magnetics
Cantarito	Geological mapping	Talus / trench	
El Negro	Geological mapping	Trench	IP / ground magnetics
Regional	Geological mapping	Stream sediment	
		Noranda Exploration 1999 / 2000 Season	
El Morro	Geological mapping	Chip	IP / ground magnetics
La Fortuna	Geological mapping	Talus / chip	IP
Cantarito	Geological mapping	Chip	
El Negro			IP / ground magnetics
Regional	Geological mapping	Chip	IP
		Noranda Exploration 2000 / 2001 Season	
El Morro		Interpretation	Interpretation
La Fortuna	Core logging	ICP	Interpretation
Cantarito			Interpretation
El Negro	Core logging	Chip	Interpretation
Regional	Core logging		Interpretation

PIMA = portable infrared measuring aparatus
T.E.M. = transient electo magnetics
ICP = inductively coupled plasma
MMI = molecular morphology and imaging

Table 8 - Exploration Contractors

Contractor or Consultant	Services Provided
Conners Drilling	Core drilling
Lakefield Research	Metallurgical testing
Cariola Perez Cotapos	Land and legal
Knight & Piesold	Environmental permitting
ALS Chemex Labs	Chemical analysis
CIMM	Chemical analysis
ACTLABS	Chemical analysis
Bondar Clegg	Chemical analysis
Barry Smee, Ph.D	Analytical precision and methods
Lucia Cuitiño	Mineralogy
Image2 Mapping	Landsat and alteration atudies
Lithotech	Geological management, PIMA analyses
Michael Parr	Geochemisrty consultant
Chris Ludwig	Geophysical consultant
Quantec Geophysical	Geophysical surveying

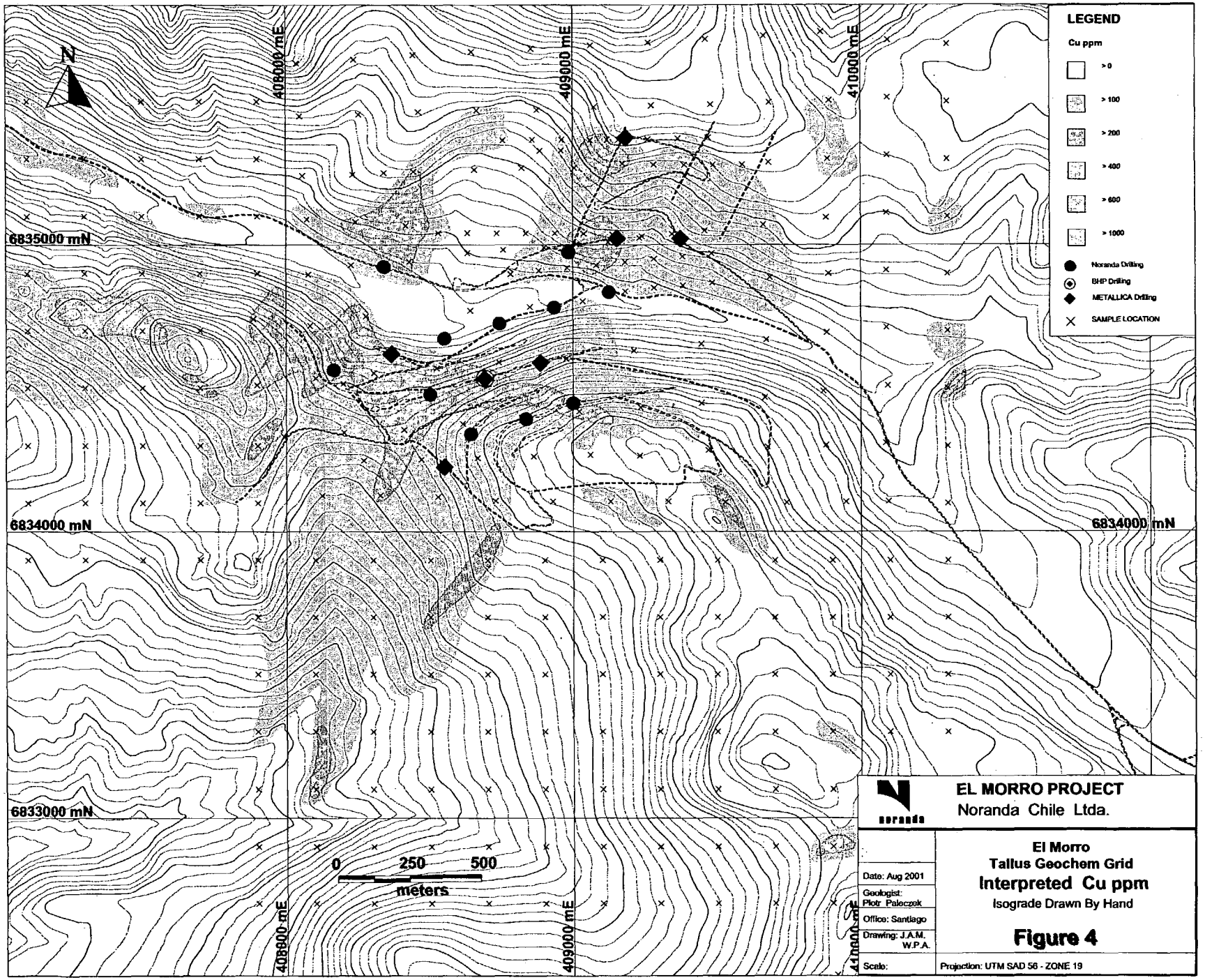
Table 9 Summary of Geophysical Survey Coverage

Area	Survey Type	Lines Surveyed	Total Distance (kilometers)
El Negro (& Camp)	Dipole-Dipole	3	15.6
El Negro (& Camp)	Gradient	17	39.8
El Negro (& Camp)	Ground Magnetic	24	36.8
El Morro	Ground Magnetic	31	62.2
El Morro	Gradient	15	33.8
El Morro	Dipole-Dipole	6	24.0
El Burro	Pole-Dipole	3	15.0
Fortuna (Cantarito)	Dipole-Dipole	8	31.2

Table 10 Main Geophysical Properties by Area

AREA	CHARGEABILITY (Gradient)	CHARGEABILITY (dipole – dipole)	RESISTIVITY	GROUND MAGNETICS (Pole Reduced)
El Morro	Dominant chargeability high (>22 mV/V) over 2000m x 2000m surface area. Central more moderate values partially match Cu mineralization. Tendency to arrange in NS trends.	Most of the IP features obtained with Gradient are repeated with dipole-dipole. With inversion of data, depth slicing also shows good correlation.	Resistive low surrounds mineralized zone (<250 Ωm). Approximately coincident with chargeability anomaly (2000m x 2000m). Mineralization within the 100 to 350 Ωm range.	Very strong NS and NNE trending magnetic anomaly (>150 nT). Bounds the mineralized area to the west. Weaker to the north (>150 nT). Higher grade zone within local magnetic low (<0 nT).
La Fortuna	Moderate high (>13 mV/V) fits mineralized zone. Clear NW tendency. Atacama Gravels may reduce penetration of signal around periphery.	The inverted dipole profiles show very good correlation of top of sulfides with the 20 mV/V contour-line. Better penetration through gravel than Gradient. Good prediction tool for next drilling stage, particularly to the NW.	Mineralized zone within low resistive area (100 – 200 Ωm). More resistive values in epithermal zones (200 to 400 Ωm). Lowest resistivities (>100 Ωm) in Atacama gravels.	Generalized Mag low (<0 nT), particularly along the NW structural trend, associated with magnetite destructive alteration, basically absent in the other areas.
El Negro	Higher grade zone coincident with chargeability low (≤10 mV/V). This might be caused by magnetite effect. High IP surrounds the area, locally corresponding to pyritic halo.	Highly magnetic properties of the potassic alteration zone affects the dipole-dipole survey. Low to negative values in central part. Eastern half shows higher chargeability (>13 mV/V) at depth (>300m).	Higher grade zone with more resistive values (>250 Ωm). Locally, lower values surround the area (<250 Ωm) corresponding with pyritic halo.	Strong magnetic high (>500 nT) associated with porphyry intrusions and potassic alteration (secondary biotite – magnetite).
Camp	Modest chargeability (15 to 22 mV/V). Irregular distribution.	Slightly lower response as for gradient. Under 300m, a high IP zone (>30 mV/V) is seen 800m to the NNE.	Irregular low resistivity values (350 to 150 Ωm).	Similar to El Negro, less intense Mag high (>200 nT).

m = meters mV/V = millivolt / volt Ωm = ohm meters nT = nano Teslas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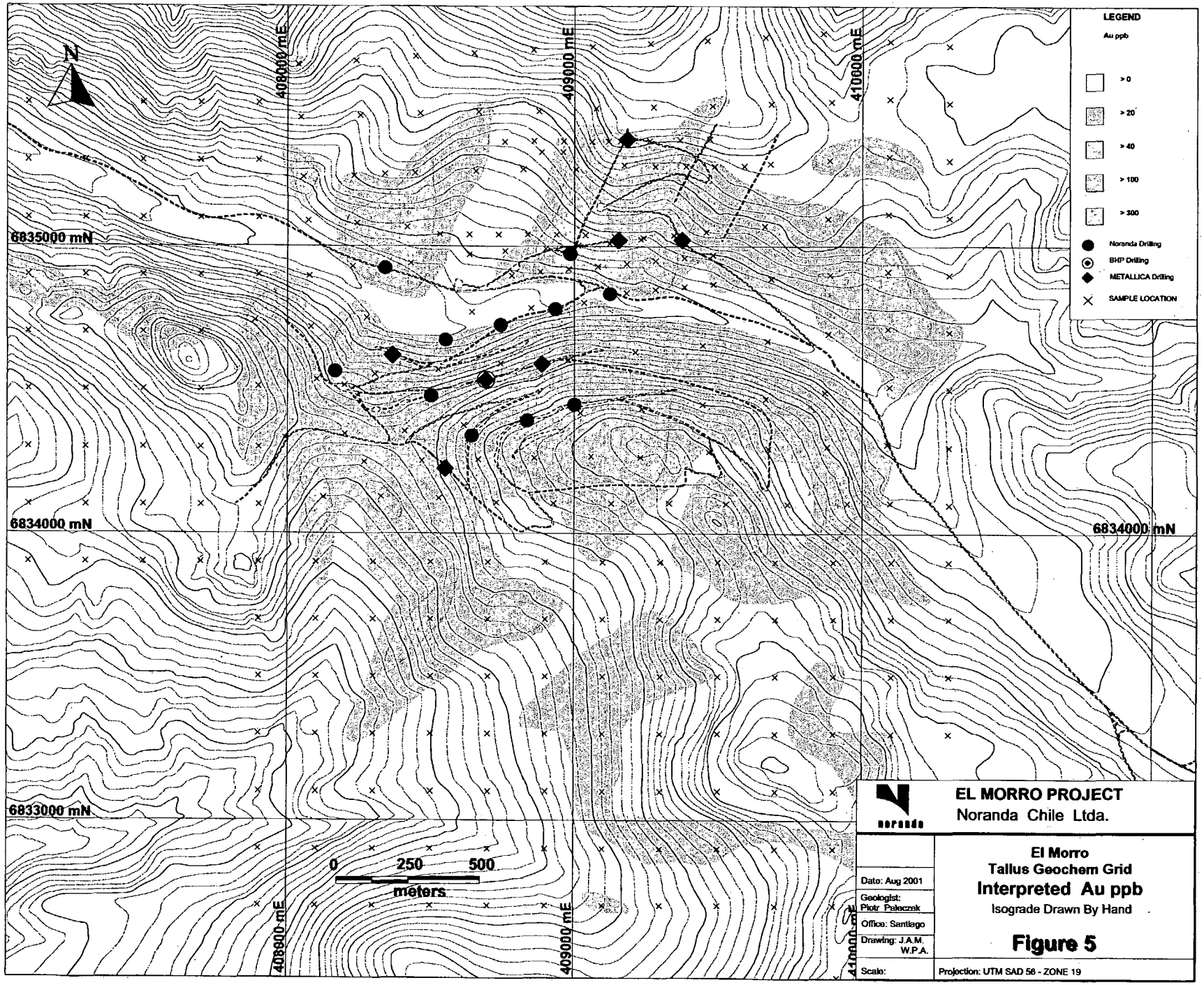
408000 mE
409000 mE
410000 mE
6835000 mN
6834000 mN
6833000 mN
0 250 500
meters
LEGEND
Cu ppm
> 0
> 100
> 200
> 400
> 600
> 1000
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
EL MORRO PROJECT
Noranda Chile Ltda.
El Morro
Tallus Geochem Grid
Interpreted Cu ppm
Isograde Drawn By Hand
Figure 4
Date: Aug 2001
Geologist: Piotr Paloczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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409000 mE
410000 mE
6835000 mN
6834000 mN
6833000 mN
0
250
500
meters
LEGEND
Au ppb
> 0
> 20
> 40
> 100
> 300
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
EL MORRO PROJECT
Noranda Chile Ltda.
El Morro
Tallus Geochem Grid
Interpreted Au ppb
Isograde Drawn By Hand
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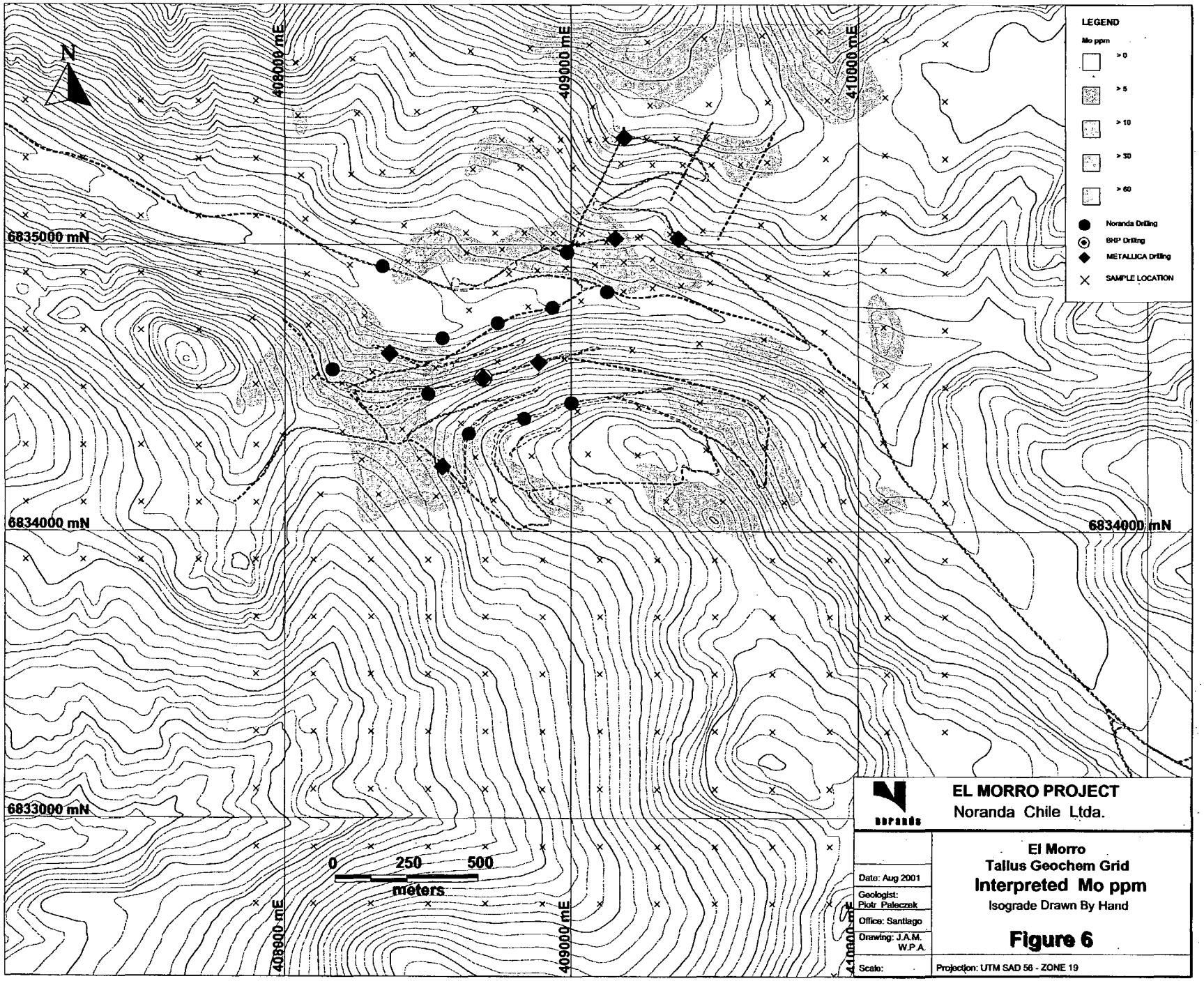
Date: Aug 2001
Geologist: Piotr Palaczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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409000 mE
410000 mE
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6834000 mN
6833000 mN
0
250
500
meters
LEGEND
Mo ppm
> 0
> 5
> 10
> 30
> 60
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
EL MORRO PROJECT
Noranda Chile Ltda.
El Morro
Tallus Geochem Grid
Interpreted Mo ppm
Isograde Drawn By Hand
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Date: Aug 2001
Geologist: Piotr Paleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
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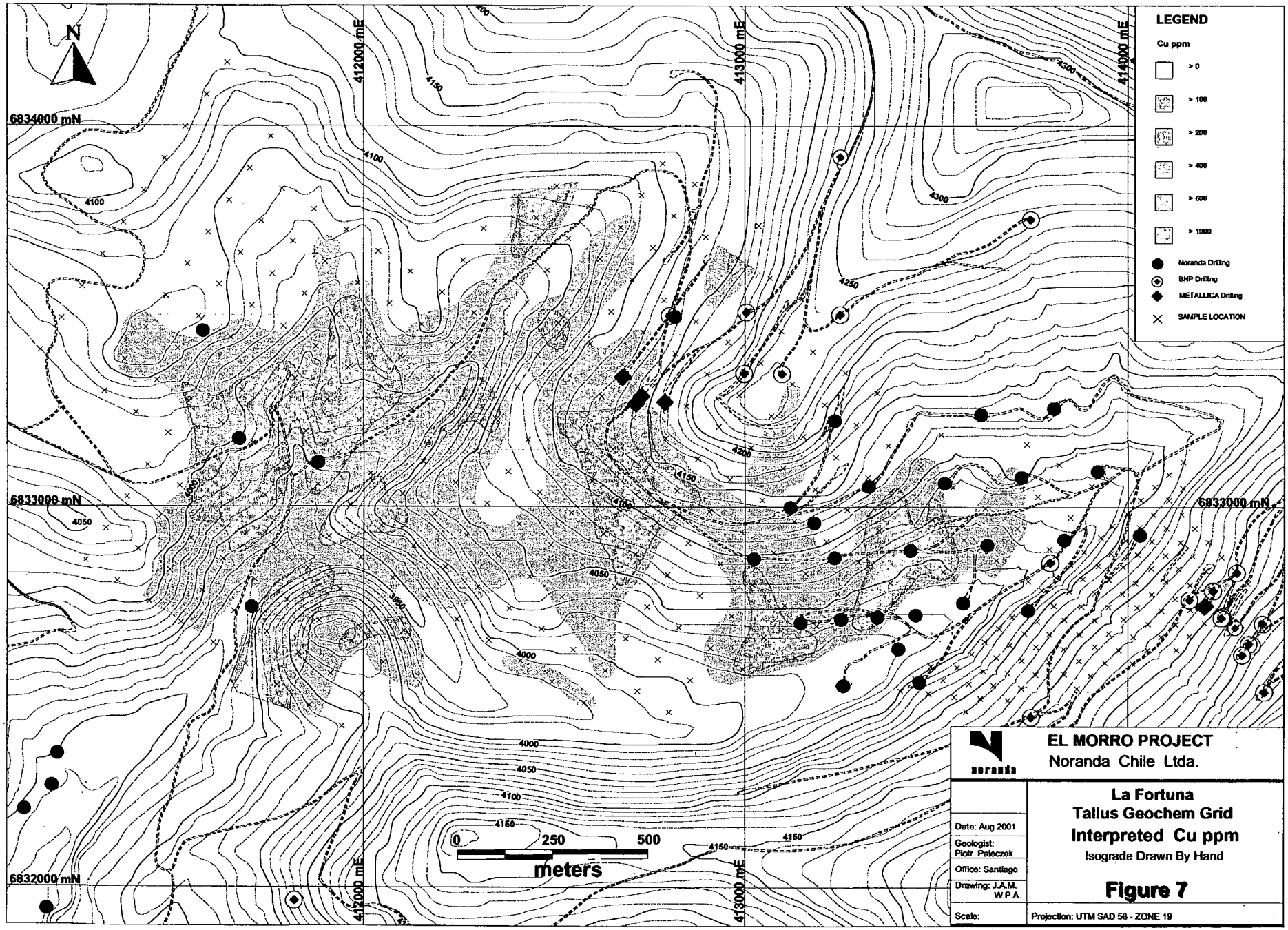
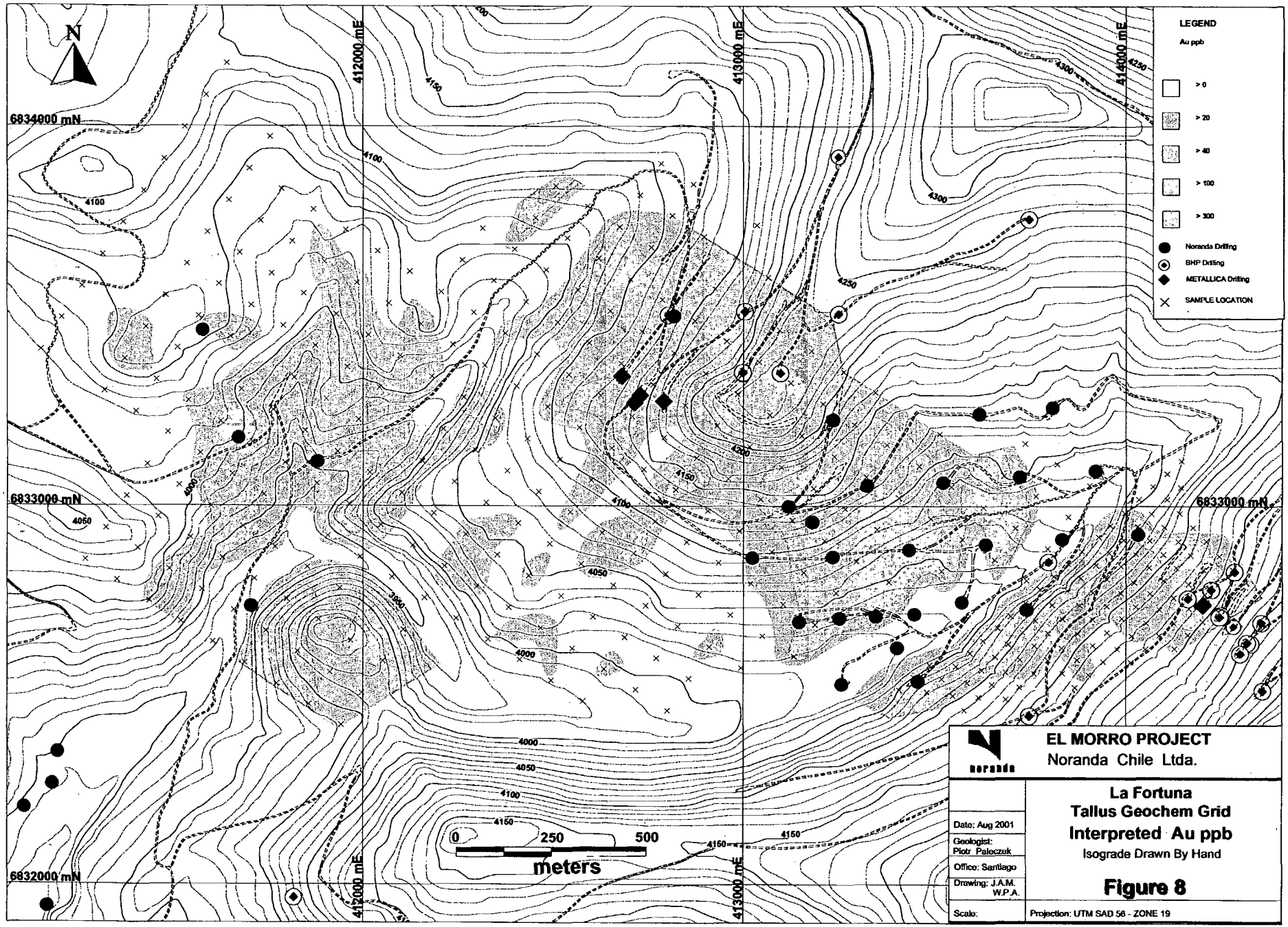
Projection: UTM SAD 56 - ZONE 19


N
6834000 mN
6833000 mN
6832000 mN
412000 mE
413000 mE
414000 mE
LEGEND
Cu ppm
> 0
> 100
> 200
> 400
> 600
> 1000
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted Cu ppm
Isograde Drawn By Hand
Figure 7
Date: Aug 2001
Geologist: Piotr Paleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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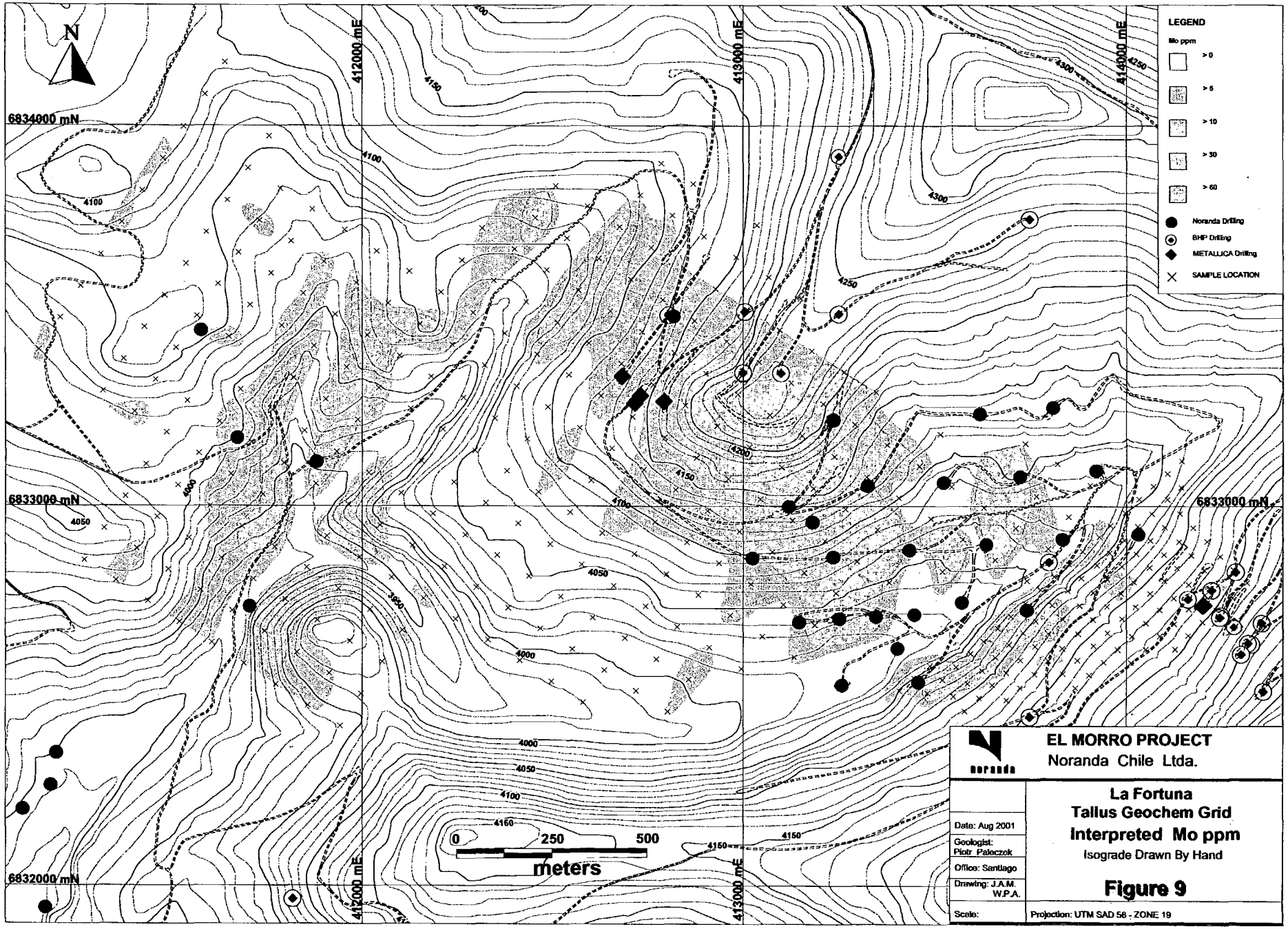
413000 mE
414000 mE
6834000 mN
6833000 mN
6832000 mN
LEGEND
Au ppb
> 0
> 20
> 40
> 100
> 300
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted Au ppb
Isograde Drawn By Hand
Figure 8
Date: Aug 2001
Geologist: Piotr Paloczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19


N
412000 mE
413000 mE
414000 mE
6834000 mN
6833000 mN
6832000 mN
LEGEND
Mo ppm
> 0
> 5
> 10
> 30
> 60
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted Mo ppm
Isograde Drawn By Hand
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Date: Aug 2001
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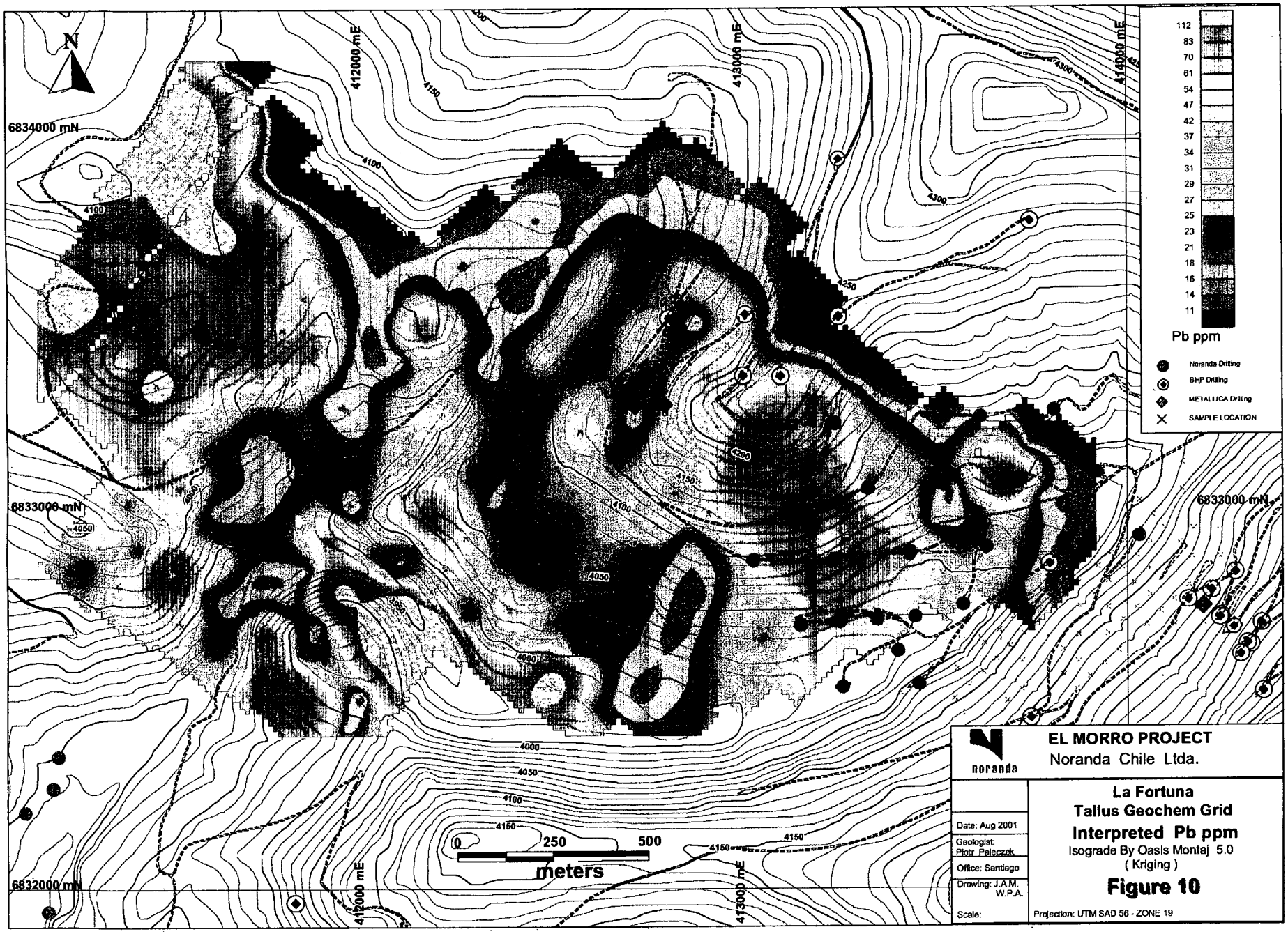
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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4150
4300
4250
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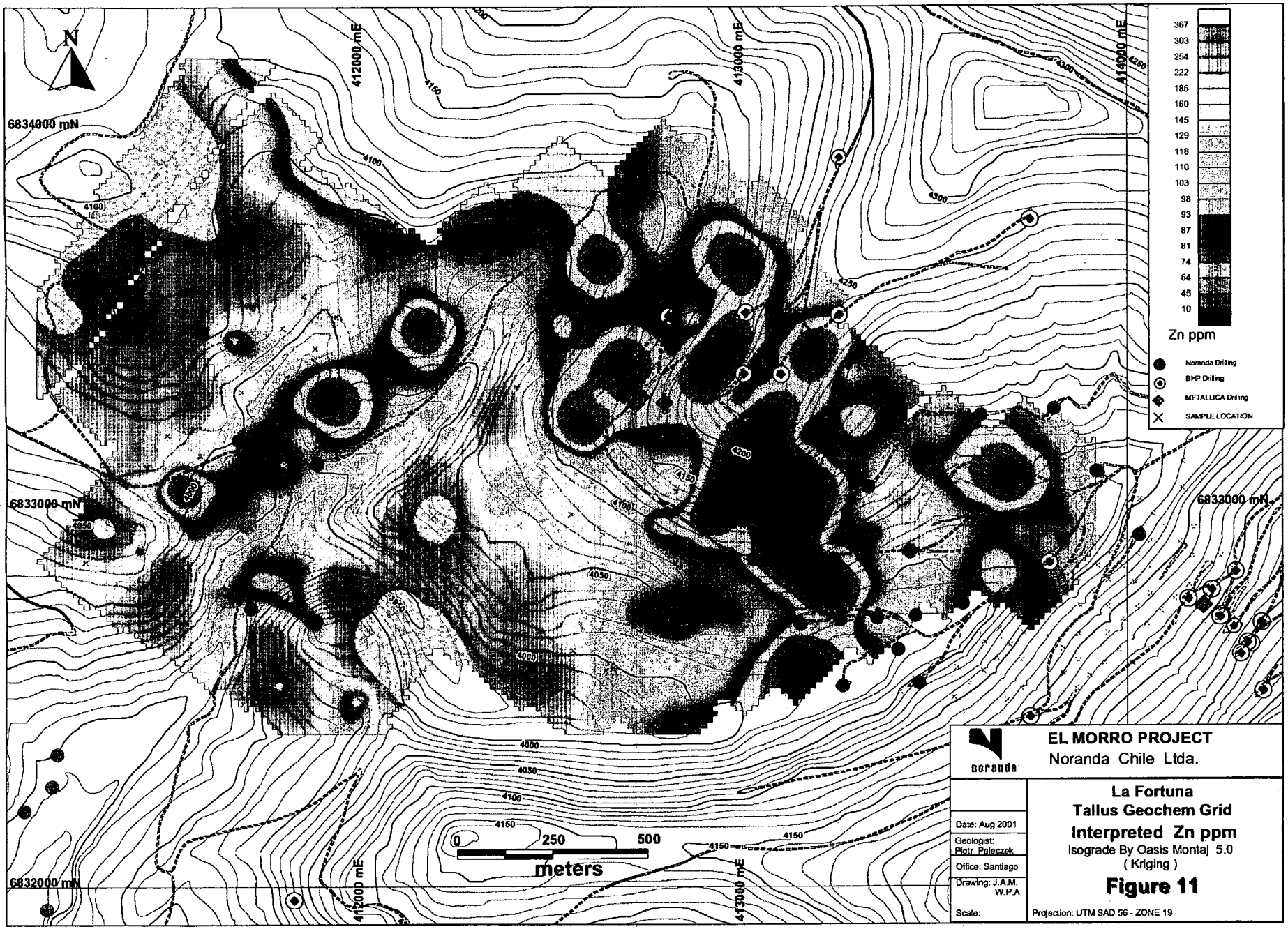
4000
112
83
70
61
54
47
42
37
34
31
29
27
25
23
21
18
16
14
11
Pb ppm
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
noranda
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted Pb ppm
Isograde By Oasis Montaj 5.0
(Kriging)
Figure 10
Date: Aug 2001
Geologist: Piotr Peleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19


N
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4150
4300
4250
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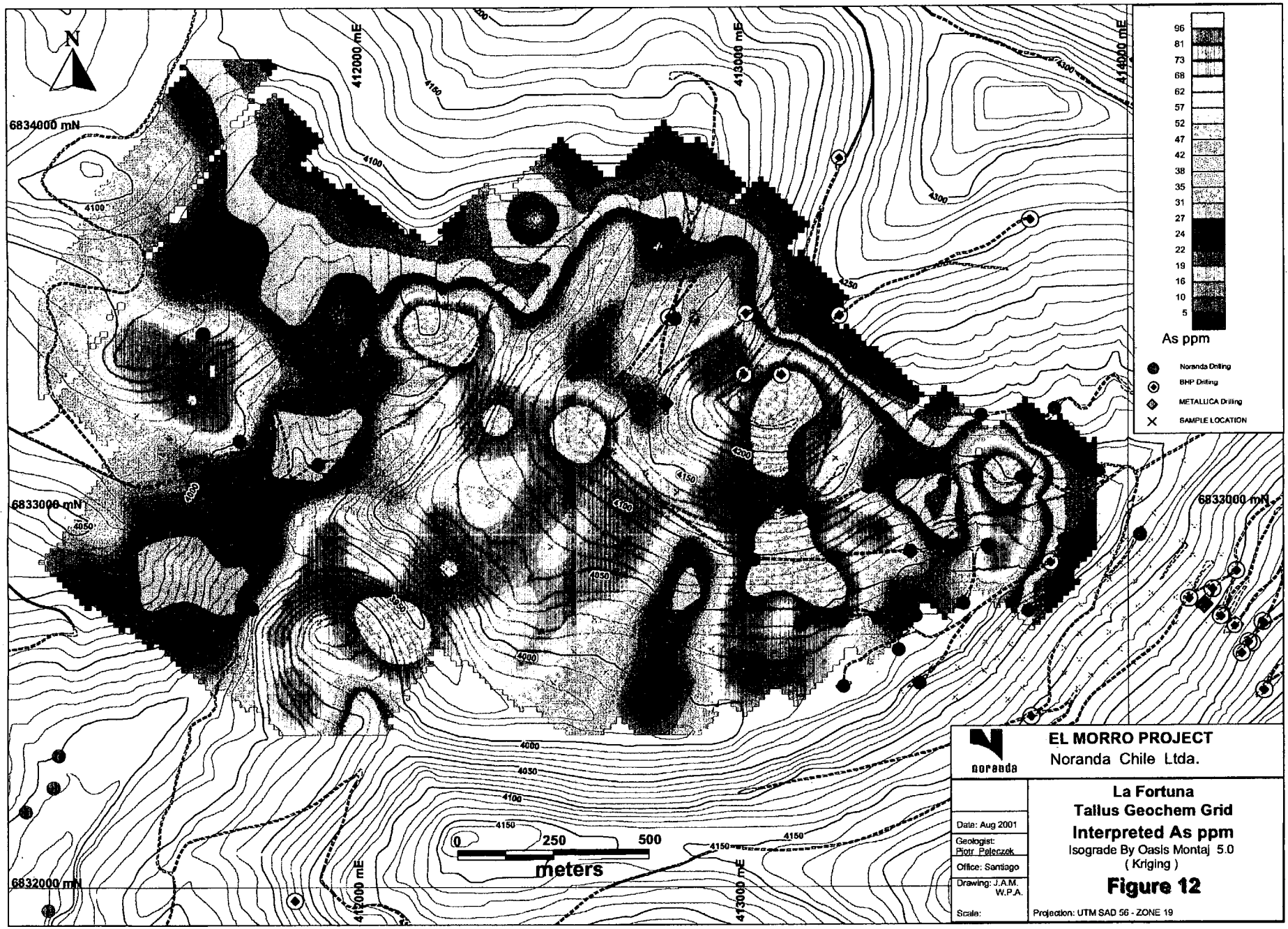
4000
367
303
254
222
186
160
145
129
118
110
103
98
93
87
81
74
64
45
10
Zn ppm
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
noranda
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted Zn ppm
Isograde By Oasis Montaj 5.0
(Kriging)
Figure 11
Date: Aug 2001
Geologist: Piotr Peleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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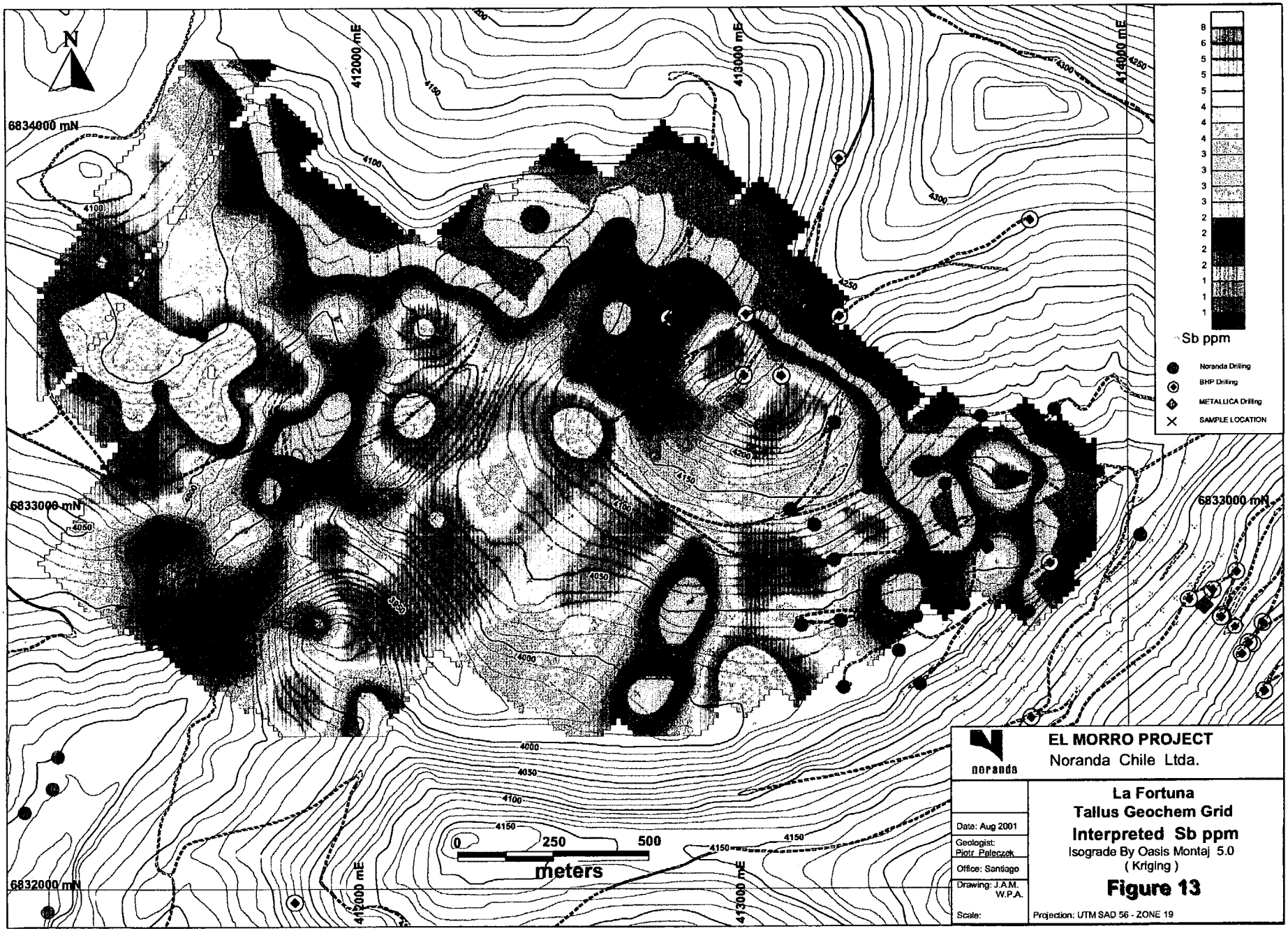
47
42
38
35
31
27
24
22
19
16
10
5
As ppm
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
noranda
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted As ppm
Isograde By Oasis Montaj 5.0
(Kriging)
Figure 12
Date: Aug 2001
Geologist: Piotr Peleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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414000 mE
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6832000 mN
Sb ppm
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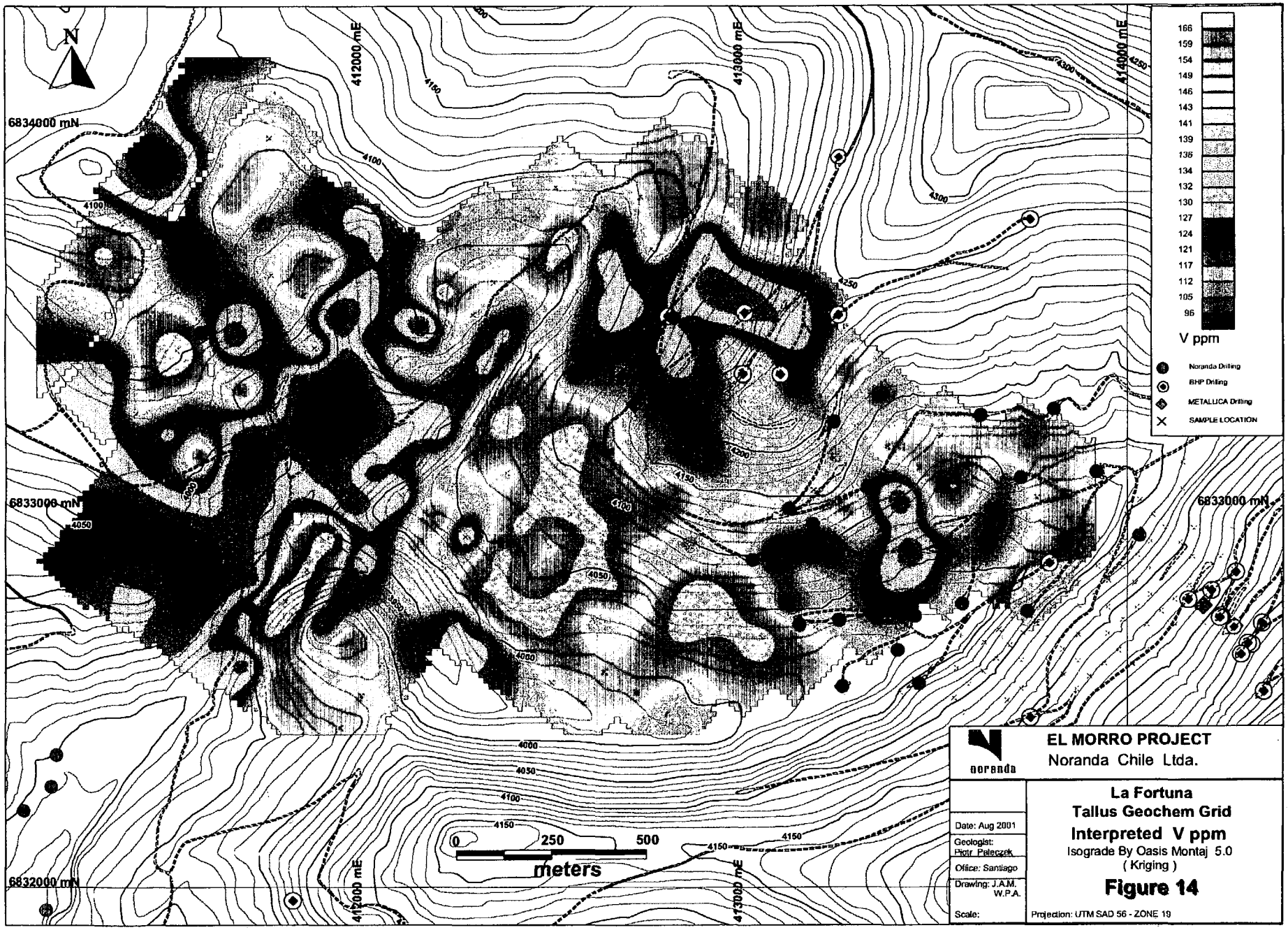
6
5
5
5
4
4
3
3
3
3
2
2
2
2
1
1
1
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
EL MORRO PROJECT
Noranda Chile Ltda.
noranda
La Fortuna
Tallus Geochem Grid
Interpreted Sb ppm
Isograde By Oasis Montaj 5.0
(Kriging)
Figure 13
Date: Aug 2001
Geologist: Piotr Paleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19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4150
4300
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4000
166
159
154
149
146
143
141
139
136
134
132
130
127
124
121
117
112
105
96
V ppm
Noranda Drilling
BHP Drilling
METALLICA Drilling
SAMPLE LOCATION
0
250
500
meters
noranda
EL MORRO PROJECT
Noranda Chile Ltda.
La Fortuna
Tallus Geochem Grid
Interpreted V ppm
Isograde By Oasis Montaj 5.0
(Kriging)
Figure 14
Date: Aug 2001
Geologist: Piotr Paleczek
Office: Santiago
Drawing: J.A.M. W.P.A.
Scale:
Projection: UTM SAD 56 - ZONE 19

Figure 23 Gradient Array Survey: Chargeability Plan Map

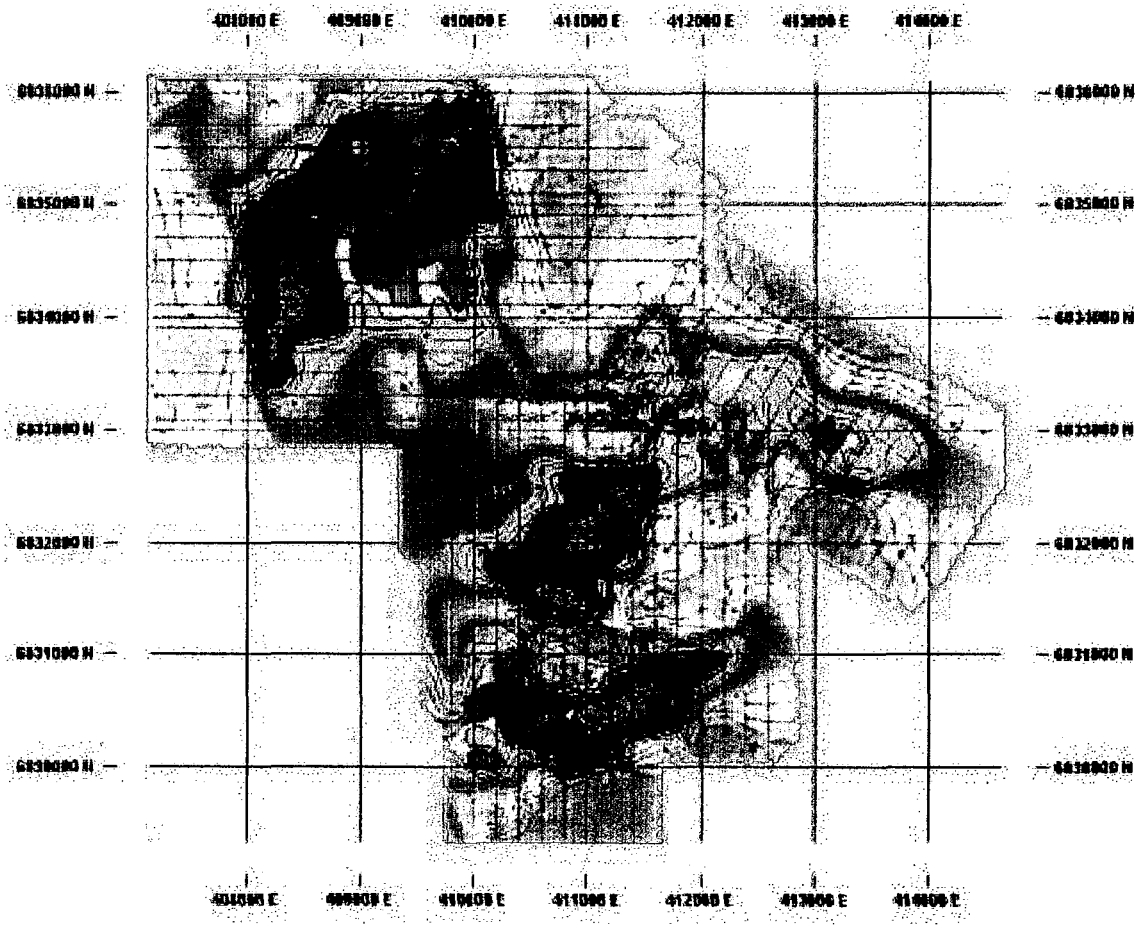


Figure 24 Gradient Array Survey: Apparent Resistivity Plan Map

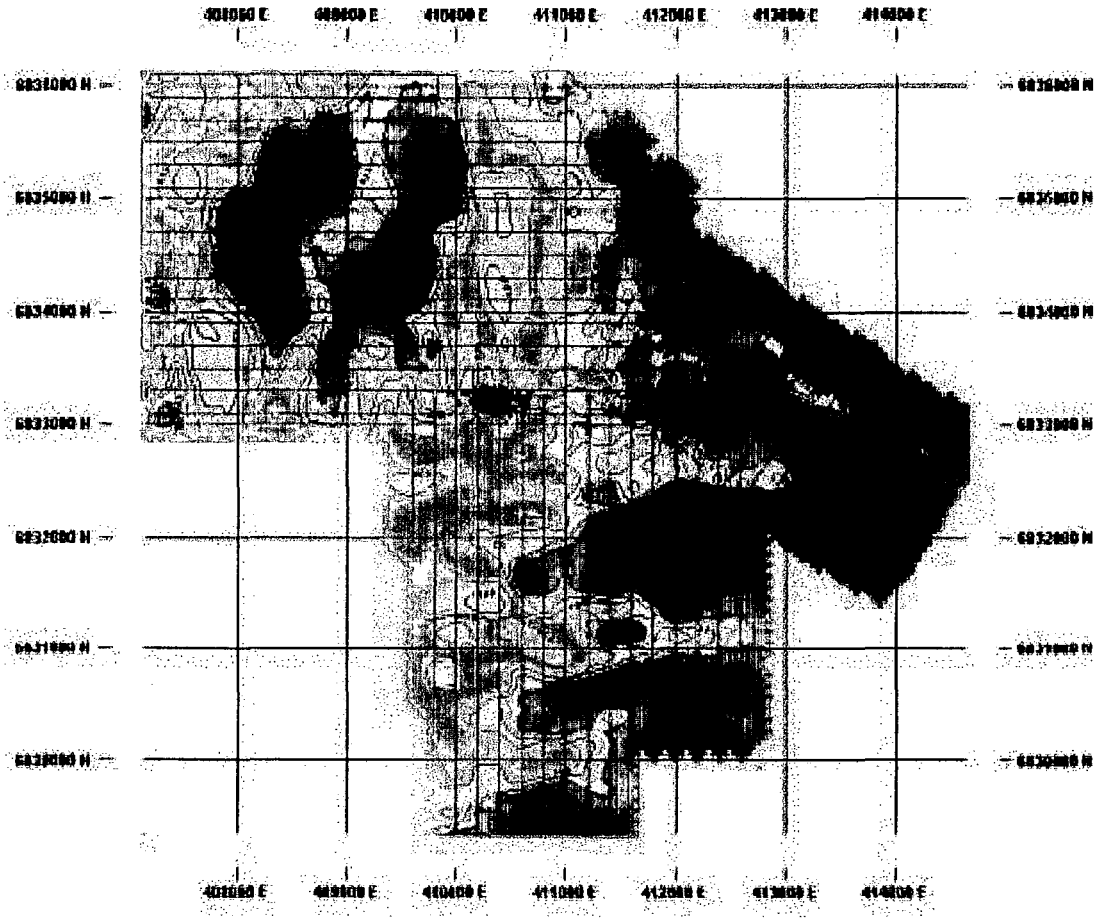
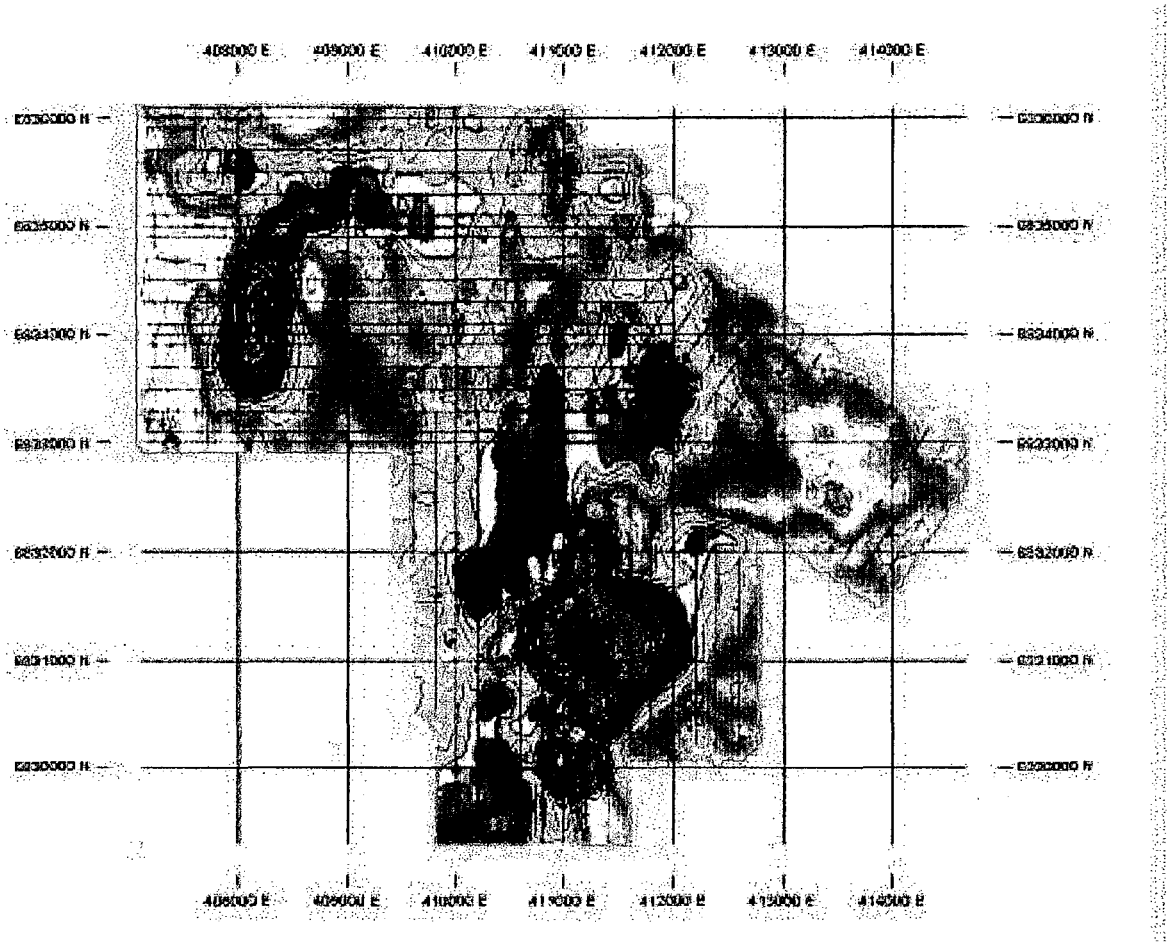


Figure 25 Ground Magnetic Survey: Pole Reduced Plan Map



Item 13: Drilling

13.1 History

In 1993 and 1994 BHP Minerals drilled 29 holes totaling 5,044 meters. Of this total, 3,572 meters were in 28 reverse circulation holes and 1,472 meters were in eight core holes. Seven of the eight core holes were a combination of reverse circulation and diamond drilling. BHP's drilling was directed towards La Fortuna and Cantarito, with a single reverse circulation hole at El Negro.

In 1999 Metallica drilled 3,213 meters in 17 reverse circulation holes, and a single core hole of 500 meters in the four known target areas of El Morro, La Fortuna, El Negro, and Cantarito. Metallica's single core hole was a twin to a reverse circulation hole at El Morro. The core hole was approximately 20 percent higher grade in both copper and gold values as compared to the reverse circulation hole.

In 2000 and through April of 2001, Noranda has completed 56 diamond drill holes totaling 19,569 meters. All of this work was directed at the El Morro, La Fortuna, and El Negro zones. To date, drilling at the El Morro property totals 28,326 meters, which consists of 6,785 meters of reverse circulation drilling and 21,541 meters of diamond drill core. Table 11 - Summary of Drill Campaigns presents the details of the drilling at the El Morro property.

13.2 Drill Hole Data

13.21 General

Tables that provide a summary of the diamond drill core information and results are found at the end of this report section:

Table 12	El Morro Drill Hole Data
Table 13	El Morro Drill Hole Results
Table 14	La Fortuna Drill Hole Data
Table 15	La Fortuna Drill Hole Results
Table 16	El Negro Drill Hole Data
Table 17	El Negro Drill Hole Results

Plates that present drill hole location maps for all areas and cross sections for the El Morro area are contained in the following illustrations:

Plate 3 El Morro Area, Drillhole Location Map
Plate 4 El Morro Area, Section 1, 1:2,000 Geology
Plate 5 El Morro Area, Section 2, 1:2,000 Geology
Plate 6 El Morro Area, Section 3, 1:2,000 Geology
Plate 8 La Fortuna – El Negro Area, Drillhole Location Map

Since continuity of mineralization at El Negro has not yet been established, cross sections for El Negro are not included. A more complete set of cross sections for La Fortuna is presented later in Item 19: Mineral Resource and Mineral Reserve Estimates.

The analytical results and locations of the 45 reverse circulation drill holes completed by BHP and Metallica are NOT presented in the figures or tables for the following reasons:

- They have no significant values because they were shallow holes exploring for near surface gold mineralization. No reverse circulation holes were drilled within the La Fortuna zone of higher-grade mineralization.

- Historical data from seven of these holes, some with significant values, in the general El Morro area are subject to verification because of the poor correlation of reverse circulation and diamond drill core analytical results.

Seven BHP holes were drilled with a combination of reverse circulation and core and the analytical results that are available for the BHP core are presented. The analytical methods and qualified individual for the BHP core results is unknown.

13.22 El Morro

Plate 3 - El Morro Area, Drillhole Location Map presents the drilling at the El Morro Area. The drilling pattern at El Morro consists of a 200-meter spaced hexagonal grid, centered on the discovery hole DDHM-1. Coverage of the northern portion of the prospective area is only partial. Two widely spaced holes were placed near the northern limit of the property.

The zone of best mineralization encountered to date is contained in the area of approximately 400 meters by 1,000 meters. The mineralized zone at El Morro is open to the northeast and will be subject to further investigation by Noranda. . At El Morro the drilling has an average inclination of 70 degrees. Therefore the length of the inclined holes must be multiplied by a factor of 0.94 to obtain the actual vertical dimension. The total core length 3,449 meters drilled by Noranda and Metallica actually represents 3,242 meters of true vertical distance.

13.23 La Fortuna

Plate 8 - La Fortuna-El Negro Area, Drillhole Location Map presents the drilling at the La Fortuna Area. A zone of higher-grade mineralization that has been encountered to date is still open to the north and northwest and at depth. It is contained an area of approximately 500 meters by 800 meters that includes drill holes: DDHF-04, DDHF-05, DDHF-12A, DDHF-18, DDHF-19, DDHF-21, DDHF-24, DDHF-25, and DDHF-26. Drilling has outlined a halo of lower grade mineralization that extends over a minimum area of 1,200 meters by 900 meters.

The last drill campaign was largely focused on the La Fortuna area and concentrated on the Santa Julia property. The drilling program consisted in a regular, 200-meter spaced grid of holes to outline the basic geometry of the mineralization intersected during the previous campaign. Deeper drilling was soon necessary, so holes as long as 722 meters were drilled. At La Fortuna the drilling has an average inclination of 70 degrees. Therefore the length of the inclined holes must be multiplied by a factor of 0.94 to obtain the actual vertical dimension. The total core length 11,347 meters drilled by Noranda actually represents 10,666 meters of true vertical distance.

13.24 El Negro

Plate 8 - La Fortuna-El Negro Area, Drillhole Location Map presents the drilling at the El Negro area. Although a number of holes have encountered intercepts of significant copper and molybdenum mineralization continuity remains to be established. At El Negro the drilling has an average inclination of 63 degrees. Therefore the length of the inclined holes must be multiplied by a factor of 0.89 to obtain the actual vertical dimension. The total core length 5,273 meters drilled by Noranda actually represents 4,693 meters of true vertical distance.

Table 11 – Summary of Drill Campaigns

		Cantarito	La Fortuna	El Negro	El Morro	Totals
BHP Drilling 1993 - 1994	RC Holes	14	13	1		28
	RC Meters	1,376	2,096	100		3,572
	Core Holes		8			8
	Core Meters		1,472			1,472
Metallica Drilling 1999	RC Holes	4	4	2	7	17
	RC Meters	340	908	418	1,547	3,213
	Core Holes				1	1
	Core Meters				500	500
Noranda Drilling 2000 – 2001	Core Holes		28	17	11	56
	Core Meters		11,347	5,273	2,949	19,569
Totals	RC Holes	18	17	3	7	45
	RC Meters	1,716	3,004	518	1,547	6,785
	Core Holes		36	17	12	65
	Core Meters		12,819	5,273	3,449	21,541
	Total Meters					28,326

Table 12 El Morro Drill Hole Data

Hole	UTM N	UTM E	Elevation	Length	Azimuth	Inclination
DDM-001	6,834,534	408,691	3,968	500	257°	-71°
DDHM-02	6,834,480	408,500	3,963	264	210°	-70°
DDHM-03	6,834,342	408,642	4,034	300	210°	-70°
DDHM-04	6,834,395	408,835	4,054	346	210°	-70°
DDHM-05	6,834,675	408,550	3,875	275	210°	-70°
DDHM-06	6,834,727	408,743	3,880	292	210°	-70°
DDHM-07	6,834,975	408,985	3,916	258	210°	-70°
DDHM-08	6,834,836	409,125	3,889	246	210°	-70°
DDHM-09	6,834,782	408,935	3,881	250	210°	-70°
DDHM-10	6,834,565	408,165	3,939	232	130°	-70°
DDHM-11	6,834,925	408,340	3,867	221	245°	-70°
DDHM-12	6,834,450	409,000	4,062	265	210°	-70°

Table 13 El Morro Drill Hole Results

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
DDM-01	6	78	72	0.03	99	0.43
	78	248	170	0.83	144	0.26
	248	500	252	0.31	187	0.10
DDHM-02	3	62	59	0.03	84	0.08
	62	156	94	0.15	69	0.08
	156	264	108	0.11	84	0.05
DDHM-03	9	70	61	0.02	15	0.10
	70	132	62	0.17	16	0.08
	132	300	168	0.04	16	0.07
DDHM-04	3	140	137	0.01	12	0.03
	140	346	206	0.17	22	0.09
DDHM-05	16	48	32	0.05	51	0.17
	48	146	98	0.44	51	0.07
	146	216	70	0.20	70	0.06
	216	275	59	0.40	95	0.09
DDHM-06	19	42	23	0.03	230	0.16
	42	220	178	0.52	187	0.14
	220	292	72	0.46	281	0.08
DDHM-07	6	44	38	0.01	174	0.23
	44	118	74	0.26	217	0.10
	118	258	140	0.15	259	0.05
DDHM-08	18	48	30	0.03	25	0.05
	48	148	100	0.17	80	0.06
	148	246	98	0.14	53	0.04
DDHM-09	18	26	8	0.03	352	0.08
	26	104	78	0.24	149	0.09
	104	250	146	0.16	230	0.07
DDHM-10	15	94	79	0.05	48	0.05
	94	232	138	0.06	64	0.03
DDHM-11	12	40	28	0.06	41	0.06
	40	72	32	0.15	60	0.06
DDHM-11	72	178	106	0.04	44	0.03
	178	221	43	0.12	84	0.05
DDHM-12	3	64	61	0.01	3	0.03
	64	116	52	0.03	2	0.02
	116	265	149	0.02	4	0.03

Table 14 La Fortuna Drill Hole Data

Hole	UTM N	UTM E	Elevation	Length	Azimuth	Inclination
RFC-08	6,833,754	413,748	4,244	132		-90°
RFC-11	6,832,852	413,798	4,051	165	220°	-70°
RFC-12	6,832,447	413,748	4,148	324	30°	-70°
DDF-01	6,833,345	412,999	4,208	400	180°	-65°
DDHF-02	6,833,000	413,119	4,136	273	210°	-70°
DDHF-03	6,833,228	413,236	4,182	350	210°	-70°
DDHF-04	6,833,079	413,723	4,093	304	210°	-70°
DDHF-05	6,832,705	413,251	4,032	233	30°	-70°
DDHF-06	6,833,185	411,676	3,998	199	30°	-70°
DDHF-07	6,833,095	413,951	4,085	296	210°	-70°
DDHF-08	6,832,913	413,835	4,063	299	210°	-70°
DDHF-09	6,832,728	413,740	4,084	492	210°	-65°
DDHF-10	6,832,531	413,257	4,013	243	210°	-70°
DDHF-11	6,832,539	413,457	4,052	203	210°	-65°
DDHF-12[a]	6,832,711	413,347	4,029	456	30°	-70°
DDHF-13	6,832,695	413,146	4,038	422	30°	-70°
DDHF-14	6,833,261	413,810	4,122	309	30°	-70°
DDHF-15	6,832,927	414,030	4,115	323	30°	-70°
DDHF-16	6,832,865	413,024	4,094	722	30°	-70°
DDHF-17	6,833,463	411,580	4,059	283	50°	-70°
DDHF-18	6,832,867	413,234	4,083	454	30°	-70°
DDHF-19	6,832,886	413,434	4,060	500	30°	-70°
DDHF-20	6,833,500	412,818	4,133	422	30°	-70°
DDHF-21	6,832,900	413,634	4,056	658	30°	-70°
DDHF-22	6,833,125	411,900	3,957	320	50°	-65°
DDHF-23	6,832,748	413,571	4,039	441	30°	-70°
DDHF-24	6,833,064	413,523	4,086	590	30°	-70°
DDHF-25	6,833,201	413,582	4,127	535	30°	-70°
DDHF-26	6,833,055	413,325	4,119	651	30°	-70°
DDHF-27	6,832,717	413,447	4,030	269	30°	-70°
DDHF-28	6,832,626	413,402	4,022	501	30°	-70°
DDHF-29	6,832,959	413,180	4,119	602	30°	-70°

Table 15 La Fortuna Drill Hole Results

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
DDF-01	8	293	285	0.02	44	0.15
	293	389	96	0.12	34	0.04
	389	400	11	0.29	33	0.05
RCF-08	219	229	10	0.02	25	0.04
	229	276	47	0.26	NA	0.02
RCF-11	36	161	125	0.03	28	0.07
	161	201	40	0.35	32	0.06
RCF-12	31	169	139	0.01	8	0.03
	169	173	4	0.37	1	0.01
	173	333	160	0.01	10	0.05
	333	345	12	0.47	92	0.42
RCF-12	345	355	10	0.01	4	0.01
DDHF-02	33	76	42	0.02	18	0.04
	76	144	68	0.38	5	0.03
	144	273	129	0.06	14	0.03
DDHF-03	36	280	244	0.01	54	0.07
DDHF-03	280	322	42	0.28	56	0.12
	322	350	28	0.14	65	0.07
DDHF-04	9	150	141	0.02	48	0.32
	150	220	70	1.15	52	0.35
	220	304	84	0.40	63	0.36
DDHF-05	11	30	19	0.02	53	0.11
	30	88	58	0.74	51	0.14
	88	184	96	0.30	50	0.20
	184	233	49	0.67	42	0.50
DDHF-06	6	90	84	0.09	20	0.05
	90	106	16	0.78	348	0.11
	106	150	44	0.07	71	0.03
	150	199	49	0.32	299	0.15
DDHF-07	59	154	95	0.01	13	0.03
	154	196	42	0.36	27	0.06
	196	296	100	0.06	20	0.05
DDHF-08	27	110	83	0.02	21	0.04
	110	182	72	0.22	34	0.05
	182	204	22	0.08	22	0.04
	204	226	22	0.23	24	0.03
	226	299	73	0.06	16	0.03
DDHF-09	9	310	301	0.01	26	0.06
	310	374	64	0.19	12	0.02
	374	402	28	0.08	11	0.01
	402	484	82	0.26	5	0.03
	484	492	8	0.07	8	0.00
DDHF-10	36	76	40	0.04	18	0.02
	76	243	167	0.01	4	0.01
DDHF-11	9	74	65	0.02	38	0.04
	74	114	40	0.22	46	0.06
	114	203	89	0.12	54	0.06
DDHF-12A	0	62	62	0.98	89	0.20
	62	108	46	3.28	41	0.21
	108	456	348	0.69	34	0.52

Table 15 La Fortuna Drill Hole Results (continued)

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
DDHF-13	21	52	31	0.02	6	0.03
	52	222	170	0.08	36	0.04
	222	322	100	0.20	55	0.11
	322	386	64	0.35	46	0.22
	386	422	36	0.71	25	0.50
DDHF-14	66	188	122	0.02	52	0.23
	188	274	86	0.05	17	0.05
	274	309	35	0.13	18	0.08
DDHF-15	5	188	184	0.01	8	0.02
	188	230	42	0.07	5	0.02
	230	306	76	0.20	6	0.07
	306	323	17	0.01	1	0.01
DDHF-16	30	62	32	0.03	7	0.01
	62	102	40	0.42	6	0.01
	102	160	58	0.25	4	0.01
	160	334	174	0.05	12	0.02
	334	416	82	0.09	25	0.05
DDHF-16	416	598	182	0.16	53	0.09
DDHF-16	598	722	124	0.29	43	0.14
DDHF-17	6	283	277	0.02	3	0.02
DDHF-18	35	98	63	1.52	42	0.18
	98	162	64	0.30	43	0.21
	162	220	58	0.65	43	0.46
	220	310	90	0.86	51	1.02
	310	418	108	0.42	12	0.61
	418	454	36	0.03	5	0.06
DDHF-19	24	140	116	0.64	30	0.56
	140	192	52	0.59	32	0.59
	192	500	308	0.64	32	0.61
DDHF-20	7	144	137	0.04	49	0.25
	144	174	30	0.78	23	0.24
	174	310	136	0.21	32	0.29
	310	422	112	0.19	35	0.28
DDHF-21	15	52	37	0.17	59	0.37
	52	114	62	1.05	110	0.28
	114	152	38	0.32	61	0.30
	152	176	24	0.87	80	0.38
	176	328	152	0.38	52	0.35
	328	568	240	0.29	42	0.33
	568	658	90	0.16	55	0.15
DDHF-22	4	120	116	0.16	122	0.20
	120	272	152	0.06	41	0.07
	272	312	40	0.24	21	0.38
	312	320	8	0.03	11	0.04
DDHF-23	35	60	26	0.08	93	0.13
	60	132	72	0.26	78	0.13
	132	296	164	0.35	71	0.23
	296	441	145	0.23	94	0.17
DDHF-24	14	106	93	0.35	47	0.44
	106	152	46	0.54	81	0.85

Table 15 La Fortuna Drill Hole Results (continued)

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
DDHF-24	152	388	236	0.53	66	0.81
	388	488	100	0.63	99	1.11
	488	590	102	0.33	49	0.68
DDHF-25	68	178	110	0.04	24	0.57
	178	218	40	0.80	39	0.63
	218	386	168	0.39	55	0.54
	386	535	149	0.18	46	0.18
DDHF-26	13	84	71	0.39	38	0.31
	84	106	22	1.05	42	0.43
	106	236	130	0.15	36	0.16
	236	651	415	0.86	23	0.77
DDHF-27	4	14	10	0.14	68	0.25
	14	86	72	0.84	74	0.30
	86	254	168	0.40	64	0.30
	254	269	15	0.26	64	0.18
DDHF-28	4	20	16	0.42	68	0.15
	20	40	20	1.06	90	0.15
	40	322	282	0.38	83	0.24
	322	501	179	0.51	104	0.36
DDHF-29	4	68	64	0.01	40	0.06
	68	100	32	0.20	48	0.13
	100	134	34	0.74	98	0.20
	134	414	280	0.51	68	0.35
	414	572	158	0.84	7	1.41
	572	602	30	0.45	6	0.89

Table 16 El Negro Drill Hole Data

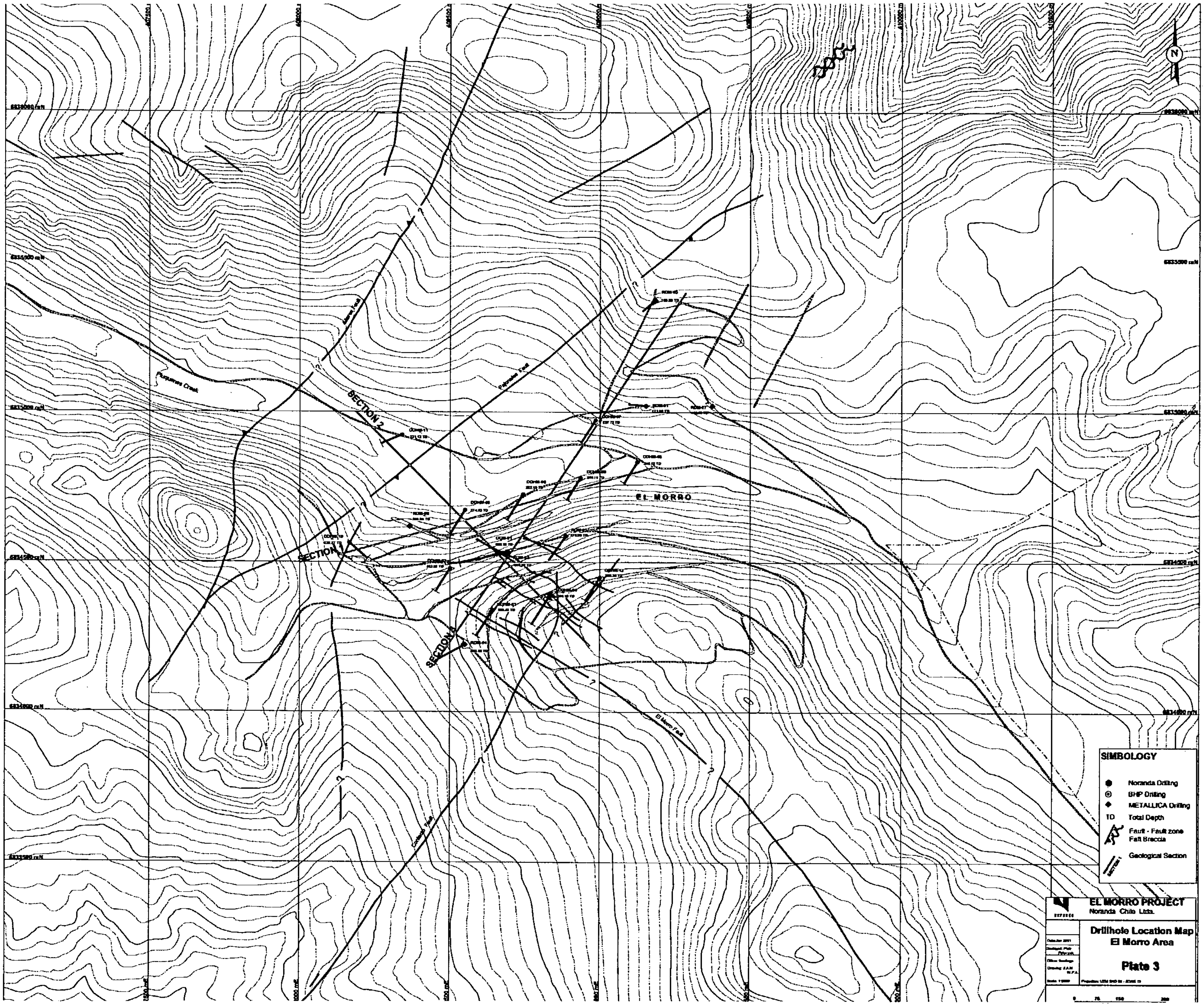
Hole	UTM N	UTM E	Elevation	Length	Azimuth	Inclination
RCF-10	6,831,964	411,819	4,083	68		-90°
DDHN-01	6,831,204	411,405	3,901	335	50°	-70°
DDHN-02	6,831,661	411,188	3,904	308	50°	-70°
DDHN-03	6,831,942	411,171	3,881	302	50°	-70°
DDHN-04	6,832,352	411,199	3,892	319	30°	-70°
DDHN-05A	6,832,736	411,707	3,923	302	50°	-55°
DDHN-06	6,832,204	411,111	3,893	362	50°	-70°
DDHN-07	6,831,338	411,187	3,847	341	50°	-60°
DDHN-08	6,831,167	411,090	3,889	358	50°	-60°
DDHN-09	6,832,594	410,997	3,948	183	50°	-60°
DDHN-10	6,831,099	411,016	3,889	343	50°	-60°
DDHN-11	6,831,422	411,165	3,855	328	50°	-60°
DDHN-12	6,831,275	411,266	3,845	371	50°	-60°
DDHN-13	6,831,268	411,095	3,863	358	50°	-60°
DDHN-14	6,831,336	411,350	3,867	269	50°	-60°
DDHN-15	6,831,123	411,183	3,851	254	50°	-60°
DDHN-16	6,831,006	411,023	3,876	269	50°	-60°
DDHN-17	6,832,268	411,185	3,887	275	45°	-65°

Table 17 El Negro Drill Hole Results

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
RCF – 10	194	217	23	0.02	NA	0.01
DDHN-01	5	34	29	0.18	6	0.81
	34	98	64	0.19	11	0.33
	98	154	56	0.21	14	0.95
	154	232	78	0.13	12	0.29
	232	335	103	0.06	12	0.08
DDHN-02	4	46	42	0.08	79	0.06
	46	86	40	0.37	987	0.12
	86	134	48	0.08	416	0.13
	134	308	174	0.03	32	0.02
DDHN-03	4	86	82	0.10	298	0.07
	86	302	216	0.05	36	0.03
DDHN-04	4	24	20	0.26	61	0.07
	24	126	102	0.66	835	0.18
	126	158	32	0.26	94	0.06
	158	248	90	0.01	10	0.00
	248	319	71	0.06	17	0.02
DDHN-5A	17	46	29	0.14	10	0.11
	46	106	60	0.04	11	0.04
	106	302	197	0.02	13	0.01
DDHN-06	5	92	87	0.03	11	0.03
	92	196	104	0.09	18	0.05
	196	361	165	0.04	15	0.02
DDHN-07	5	262	257	0.12	26	0.11
	262	341	79	0.07	24	0.06
DDHN-08	5	34	29	0.14	13	0.10
DDHN-08	34	156	122	0.23	16	0.22
	156	358	202	0.11	18	0.14
DDHN-09	3	183	180	0.01	2	0.02
DDHN-10	5	146	141	0.13	28	0.10
	146	282	136	0.21	14	0.23
	282	300	18	0.08	24	0.11
	300	320	20	0.29	38	0.42
	320	343	23	0.12	48	0.17
DDHN-11	3	70	67	0.19	30	0.12
	70	224	154	0.09	25	0.05
	224	328	104	0.14	247	0.02
DDHN-12	5	108	103	0.19	23	0.32
	108	232	124	0.13	10	0.42
	232	370	138	0.08	15	0.13
DDHN-13	3	54	51	0.10	12	0.08
	54	114	60	0.17	17	0.12
	114	358	244	0.12	20	0.12
DDHN-14	2	60	58	0.17	10	0.32
	60	269	209	0.07	24	0.09
DDHN-15	5	58	53	0.20	13	0.17
	58	252	194	0.08	9	0.10
DDHN-16	14	106	92	0.10	15	0.06
	106	216	110	0.23	8	0.36
	216	269	53	0.08	8	0.07

Table 17 El Negro Drill Hole Results (continued)

Hole	From (m)	To (m)	Length	Cu (%)	Mo (ppm)	Au (g/t)
DDHN-17	9	88	79	0.36	306	0.08
	88	114	26	0.12	49	0.04
	114	144	30	0.29	244	0.07
	144	275	131	0.02	5	0.01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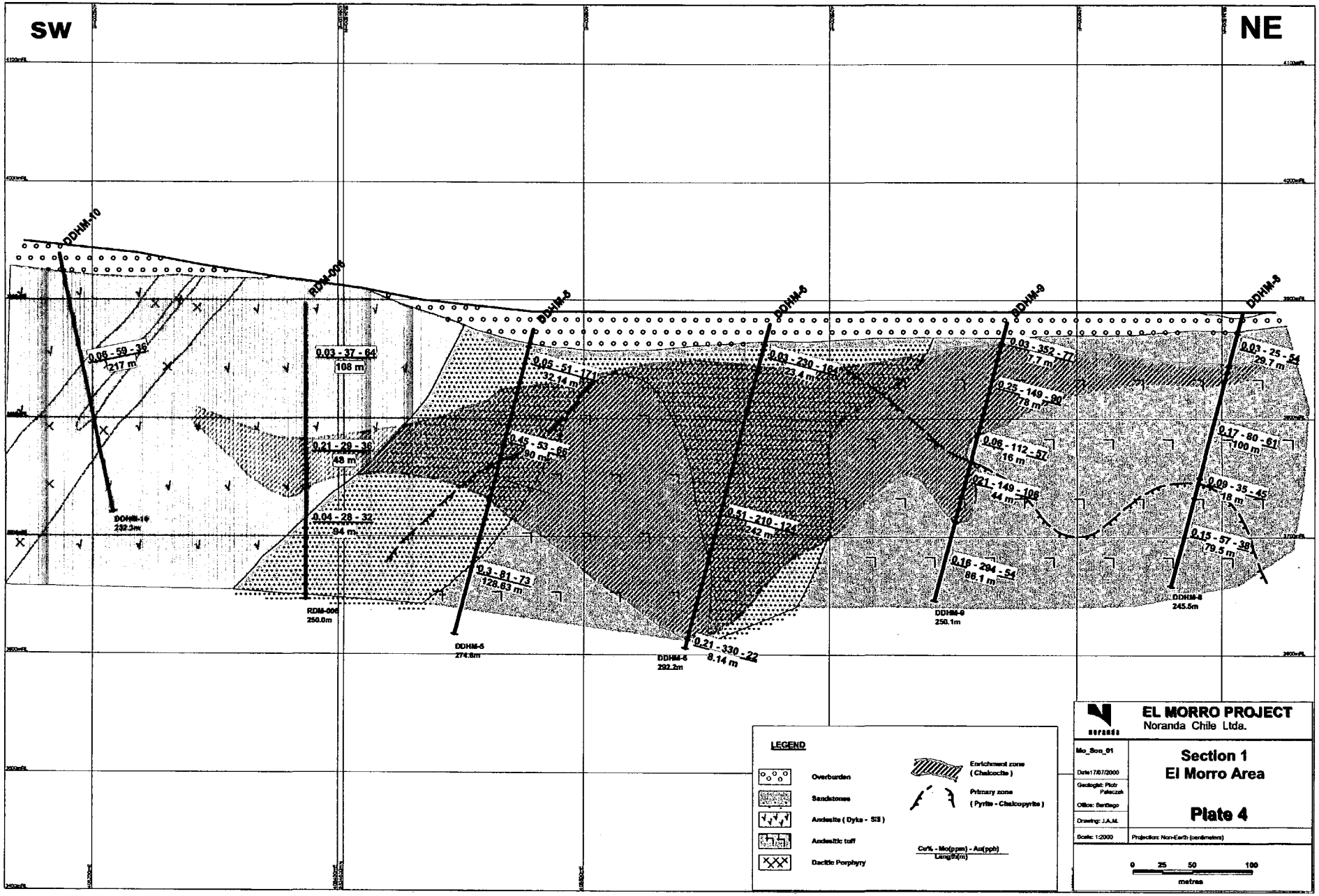
Noranda Drilling
BHP Drilling
METALLICA Drilling
TD Total Depth
Fault - Fault zone
Falt Breccia
Geological Section
EL MORRO PROJECT
Noranda Chile Ltda.
Drillhole Location Map
El Morro Area
Plate 3
EL MORRO
SECTION 1
SECTION 2
SECTION 3
El Morro Fault
Piuquenes Creek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RDM-006
DDHM-5
DDHM-6
DDHM-9
DDHM-8
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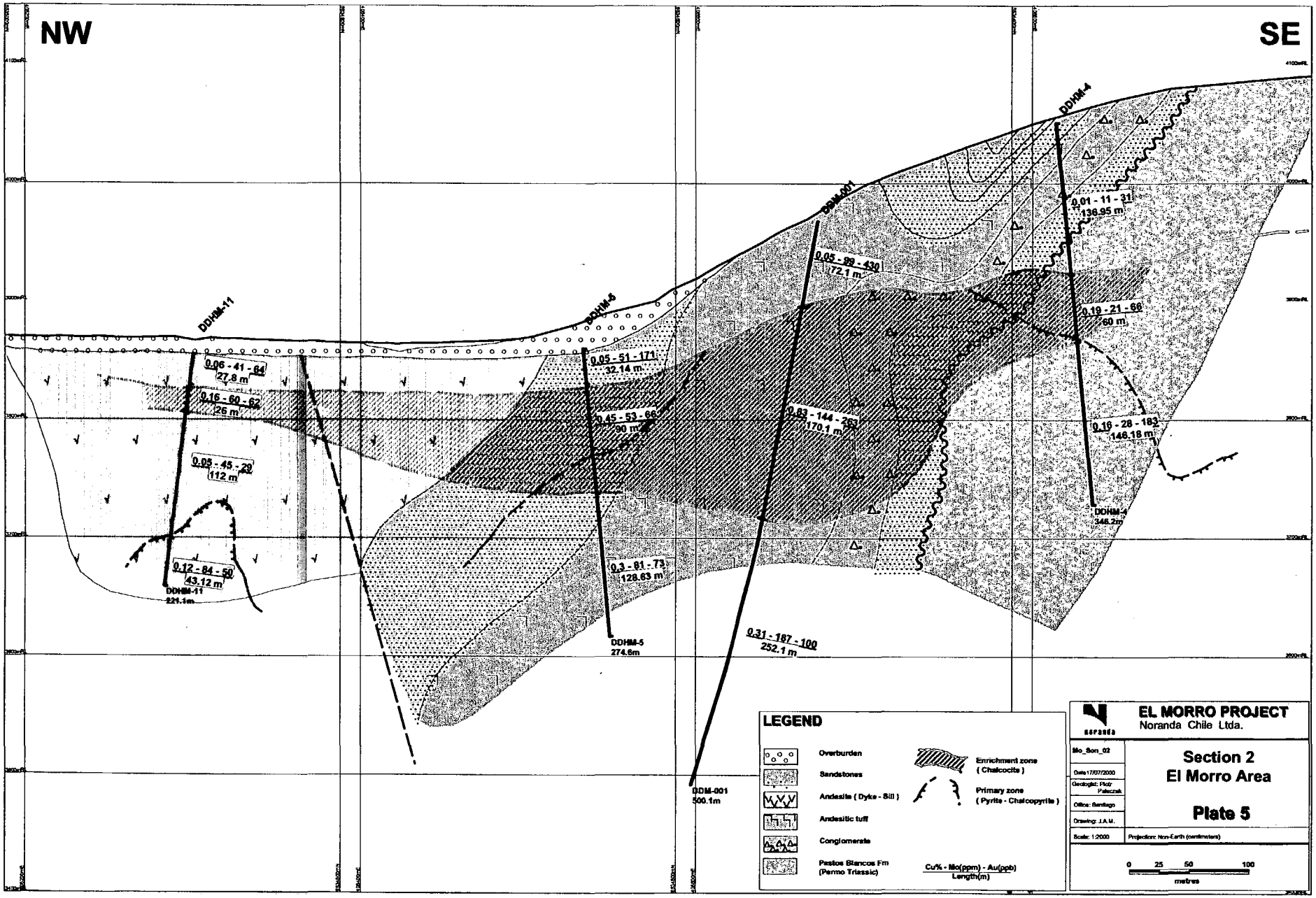
0.03 - 37 - 64
108 m
0.05 - 51 - 171
32.14 m
0.03 - 230 - 164
23.4 m
0.03 - 352 - 77
7.7 m
0.03 - 25 - 84
29.7 m
0.25 - 149 - 80
78 m
0.21 - 29 - 36
48 m
0.45 - 53 - 66
90 m
0.06 - 112 - 57
16 m
0.17 - 80 - 61
100 m
0.21 - 149 - 108
44 m
0.09 - 35 - 45
18 m
0.04 - 28 - 32
94 m
0.51 - 210 - 124
242 m
0.15 - 57 - 38
79.5 m
0.3 - 81 - 73
126.63 m
0.16 - 294 - 54
86.1 m
0.21 - 330 - 22
8.14 m
DDHM-10
232.3m
RDM-006
250.0m
DDHM-5
274.8m
DDHM-6
292.2m
DDHM-9
250.1m
DDHM-8
245.5m
LEGEND
Overburden
Sandstones
Andesite (Dyke - Sill)
Andesitic tuff
Dacitic Porphyry
Enrichment zone (Chalcocite)
Primary zone (Pyrite - Chalcopyrite)
Cu% - Mo(ppm) - Au(ppb)
Length(m)
noranda
EL MORRO PROJECT
Noranda Chile Ltda.
Mo_Sec_01
Date17/07/2000
Geologist: Piotr Paleczek
Office: Santiago
Drawing: J.A.M.
Scale: 1:2000
Section 1
El Morro Area
Plate 4
Projection: Non-Earth (centimeters)
0 25 50 100
metres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SE
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DDHM-5
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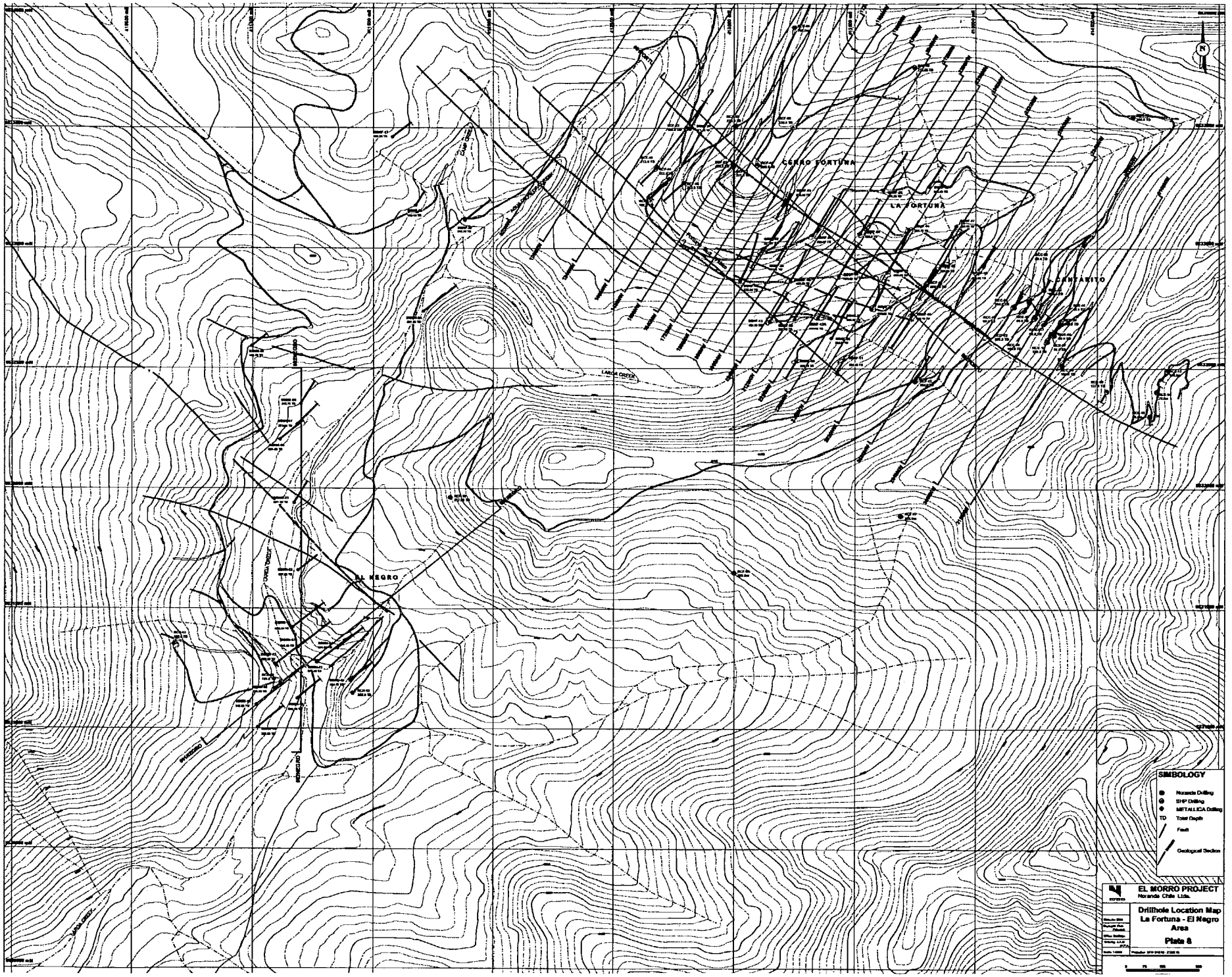
26 m
0.05 - 45 - 29
112 m
0.12 - 84 - 50
43.12 m
DDHM-11
221.1m
0.05 - 51 - 171
32.14 m
0.45 - 53 - 66
90 m
0.3 - 81 - 73
128.63 m
DDHM-5
274.6m
0.05 - 89 - 430
72.1 m
0.63 - 144 - 263
170.1 m
0.31 - 187 - 100
252.1 m
DDM-001
500.1m
0.01 - 11 - 31
136.95 m
0.19 - 21 - 66
60 m
0.19 - 28 - 183
146.18 m
DDHM-4
348.2m
LEGEND
Overburden
Sandstones
Andesite (Dyke - Sill)
Andesitic tuff
Conglomerate
Pastos Blancos Fm
(Permo Triassic)
Enrichment zone
(Chalcocite)
Primary zone
(Pyrite - Chalcopyrite)
Cu% - Mo(ppm) - Au(ppb)
Length(m)
EL MORRO PROJECT
Noranda Chile Ltda.
Mo_Son_02
Date17/07/2000
Geologist: Piotr Palaczak
Office: Santiago
Drawing: J.A.M.
Scale: 1:2000
Section 2
El Morro Area
Plate 5
Projection: Non-Earth (centimeters)
0 25 50 100
metres


SW
NE
EL MORRO PROJECT
Noranda Chile Ltda.
Section 3
El Morro Area
Plate 6


CERRO FORTUNA
LA FORTUNA
EL CAMPANITO
EL NEGRO
SIMBOLOGY
Noranda Drilling
SHP Drilling
METALLICA Drilling
TD Total Depth
Fault
Geological Section
EL MORRO PROJECT
Noranda Chile Ltda.
Drillhole Location Map
La Fortuna - El Negro
Area
Plate 8

Item 14: Sampling Method and Approach

An independent contractor, Connors, using either a Boyles 37 or Boyles 56 type drill rig, has conducted the core drilling at the El Morro project. In order to obtain higher sample volumes, most of the core diameter has been HQ, although reduction to NQ was sometimes necessary. The location of the holes are regularly surveyed and as well as down hole surveying for drill deviation.

Drilling was typically done on two 12-hour shifts, with one Canadian driller, two helpers and one Noranda controller. Core was stored in wooden boxes and brought from the drill site to the camp by either Connors or Noranda personnel. It is logged by Noranda geologists and marked for sampling at two-meter intervals.

Personnel provided by the contract Lab, Bondar Clegg, under Noranda supervision did the splitting at the project, with mechanical core splitters. The samples for assay were transported in plastic bags to the Bondar Clegg Laboratory in Coquimbo and the remaining half core has been stored at a warehouse located in La Serena. Coquimbo and La Serena are adjacent cities located some 250 kilometers south of Vallenar.

Item 15: Sample Preparation, Analyses and Security

15.1 Sample Preparation

The split half core for assay weighs 6 to7 kilograms for each two-meter interval. The sample is dried in a gas oven at 80°-100°C. After drying the entire sample is crushed to nominal minus 10 mesh size. The sample is thoroughly blended using a riffle splitter. A representative sample cut of approximately 250 grams is pulverized to 95 percent minus 150 mesh and placed in an envelop as the assay pulp for analysis. All crushing and pulverizing equipment is cleaned with compressed air after each sample. The crushing equipment is cleaned with quartz after every 20 samples and the pulverizer is cleaned with quartz after every 10 samples.

After every 40 samples a quality control sample for sizing at both the 10 mesh crush size and the 150 mesh pulverize size is taken and evaluated.

15.2 Analytical Methods

Bondar Clegg of Coquimbo, using Gannet, Canmet, and Rocklab certified standards has completed the majority of Noranda's analytical work on the project to date. The analytical method used is geochemical analysis for the copper and molybdenum values and fire assay with an atomic absorption finish for the gold values. The qualified person responsible for the design and conduct of the work performed is Michael Donnelly, General Manager Exploration – Southern Hemisphere for Noranda.

15.3 Security

In addition to the care and professionalism that Noranda applies to its entire sampling procedures, the extensive quality control program also ensures accurate results. The nature of the mineralization is such that consistent and reliable results are obtained.

Item 16: Data Verification

Noranda's standard Quality Assurance Quality Control (QAQC) procedure for advanced projects has been fully implemented into the El Morro program. The protocol is fully detailed in an internal manual of Noranda entitled "Drill Core Sampling and Analysis Protocols". The protocol calls for submission of blanks, control samples, and duplicates (remaining half of core) in all sample batches submitted to the lab. Submission of selected pulps to a second laboratory (cross-checks), analysis of reject replicates, and collection and review of laboratory internal control samples and repeats (pulp replicates) is also undertaken. A control sample database is maintained and results are evaluated for differences.

16.1 Noranda Control Standards

Standards were produced and analyzed in Canada from drill reject samples taken at the San Jose project, Arizona, and blanks were made from barren quartz vein material collected in Chile. One of two standards was inserted every 23 samples (approximately every 50 meters), alternating with one blank. Analyses of standards, blanks, and duplicates were graphed. Charts of expected values versus difference from expected values for standard and blanks were plotted. Less than 4 percent of the copper and gold values for standards and blanks were significantly different from the expected values.

16.2 Duplicates

Duplicate samples, the other half of the core, were taken every 100 meters in mineralized rock. Charts of copper analyses of core duplicates indicate satisfactory results, with most differences less than 20 percent (average 19 percent), with a few marginally greater. Gold shows a greater variation, with more differences greater than 20 percent, averaging 25 percent. The differences may be due to the orientation of mineralized veinlets and unequal distribution of some veins in each half of the split core, particularly those at an oblique angle to the core axis.

The 44 field duplicates generated during the 2000-2001 season were reviewed by Noranda consultant, Barry Smee, Ph.D., P.Geo, to evaluate precision using a modified Thompson-Howarth method. According to this, the overall precision for copper is near 12 percent at 0.3 percent concentration and gold is near 20 percent at 1 gram per tonne concentration. He concludes that both of these estimates are well within normal limits expected from a porphyry deposit, especially as all ore types were considered and all sources of error are present.

16.3 Cross-Checks

Cross-checks of pulps from the 1999-2000 program, mostly El Morro zone holes, were sent to the CIMM laboratory in Coquimbo, Chile. The CIMM results were consistently lower in copper (-5.3 percent average), lower in gold (-20.8 percent), and higher in molybdenum (+15.2 percent). To address this concern, additional cross-checking of these pulps was undertaken and the ALS Chemex laboratory in Vancouver, Canada. The Bondar-Clegg and ALS Chemex results show a much closer correlation for copper and gold. For samples with >0.25 percent copper, the average difference is only –0.36 percent of the average for Copper. The difference in the gold results in only -0.30 percent. The close correlation of the ALS Chemex and Bondar-Clegg results, along with the results of the control standards and duplicates, indicate that the Bondar-Clegg analyses are satisfactory, and the CIMM cross-check results are suspect.

Molybdenum cross-checks were 10.5 percent higher at the ALS Chemex lab, which corroborates with the CIMM lab, and there is a possibility that the Bondar Clegg lab is consistently reporting 10-15 percent lower molybdenum grades.

Cross-checks performed on rejects from the 1999-2000 drilling program at the CIMM lab produced similar comparisons as with the pulps.

All cross-checking of pulps for the 2000-2001 drilling program were performed at ALS Chemex lab in Vancouver, Canada. For copper, the average difference is –7.8 percent, which may suggest that Bondar Clegg is reporting lower results than ALS Chemex. However, this may be attributable to the few outliers beyond the 20 percent difference. For grades over 1 percent copper the graph indicates a trend, with an average difference of –12.4 percent, suggesting Bondar Clegg is reporting lower results at higher grades. More cross checks of higher grade material must be performed. For gold, the average is +3.35 percent, but for grades > 300 part per billion gold it is only +2.63 percent.

For molybdenum, the graph suggests a negative trend, with an average difference of –14.8 percent. Again, the differences aren't likely to impact the economics of this project, however the indication of a systematic negative bias for molybdenum analyses at the Bondar Clegg lab could be significant on other projects and should be addressed.

16.4 Bondar Clegg Internal Control

Charts of repeat analyses indicated differences all fall within acceptable tolerances, of +/-10 percent for copper and molybdenum, and +/-20 percent (or very near) for gold. All control sample analyses for copper and gold also fall within an acceptable tolerance of +/- 2 standard deviations.

Item 18: Mineral Processing and Metallurgical Testing

Two separate preliminary metallurgical investigations have been conducted by Lakefield Chile. The first program was conducted in 1999 on two sample composites from reverse circulation drill cuttings. An oxide sample with 0.04 percent copper, 0.37 gram per tonne gold and 0.01 percent molybdenum and a sulfide sample with 0.6 percent copper, 0.19 gram per tonne gold and 0.015 percent molybdenum from drill hole RDM-2 were used for the testing.

For the oxide sample, a gravity concentration test was performed and only 11.9 percent of the gold was recovered, whereas using bottle cyanidation, 94 – 95 percent of the gold was recovered after 24 hrs.

For the sulfide sample (pyrite - chalcocite – chalcopyrite), the rougher flotation tests showed the best results with a grind to 80 percent under 200 mesh. Recoveries were 93.5 percent for copper, 95.2 percent for gold and 69.3 percent for molybdenum.

In 2001, Lakefield Research of Canada again conducted preliminary metallurgical testing on two composites of drill core from La Fortuna. The samples were composited to represent hypogene and supergene mineralization. Head assays for the composites were 0.60 percent copper and 0.58 gram per tonne gold for the hypogene sample and 1.22 percent copper and 0.30 gram per tonne gold for the supergene sample. The use of potassium amyl xanthate as a collector, a primary grind of approximately 150 mesh, and a flotation pH of ~10 gave copper rougher recoveries of 94 percent for both samples. The gold rougher recoveries were 75 and 79 percent for the hypogene and supergene samples respectively.

Preliminary cleaning tests indicated that final copper concentrate grades above 30 percent could be achieved for both samples with a regrind of approximately 400 mesh and a pH of ~11. Flotation conditions were not optimized and no locked cycle tests have been completed to accurately predict overall grades and recoveries.

Item 19: Mineral Resource and Mineral Reserve Estimates

Noranda, under the supervision of Michael Donnelly, General Manager Exploration – Southern Hemisphere, has completed an estimate of the inferred mineral resource at the La Fortuna area of the El Morro project.

19.1 Database for the Inferred Mineral Resource Estimation

The deposit has been drill tested on approximately 200-meter centers. Twenty-four diamond drill holes totaling 10,545 meters are present in the deposit area and were the basis for the inferred mineral resource calculation. The holes used were DDHF– 2, 3, 4, 5, 7, 8, 9, 10, 11, 12A, 13, 14, 15, 16, 18, 19, 21, 23, 24, 25, 26, 27, 28, and 29. Holes DDF-1, DDHF-6, 17, 20, 22 were not used as they are either out of the La Fortuna area or too far from the main mineralized area to assume continuity.

The drill core was assayed for copper, gold, silver and molybdenum in 2 meter intervals. The assay data was composited into 10-meter bench composites. There are 109 composites in the supergene-enriched zone and 624 composites in the primary zone. Top cutting was only performed on copper in the supergene-enriched zone for three composites in DDHF - 12A. Values were cut to 2.5 percent copper. No other top cutting was performed as a review of histograms showed no significant outliers.

The drill sections are spaced at 160 meters and geological sections were created every 80 meters. Four separate mineralogical domains were used: overburden, leached capping, supergene enriched mineralization, and primary mineralization. Interpretation of the mineralogical domains was based only on copper values. No lithological, mineralogical, structural, or metallurgical control was incorporated.

19.2 Block Model for the Inferred Mineral Resource Estimate

A block model was created using Gemcon block modeling software. The size of the blocks were 20 x 20 x 20 meters. The block model volume defined in Table 19 – Block Model Dimensions.

Blocks in the model were labeled according to mineralogical domain. Overburden was determined by using the topographic surface and the top of the leached capping surface. Leached capping defined by using the two surfaces at the top and bottom of the leached zone. The supergene enriched mineralization was outlined by constructing a 3 dimensional wireframe solid from the geologic cross sections and the solid was then used to label the blocks. The primary mineralization was defined as any block below the leached capping and supergene enriched mineralization.

19.3 Grade Interpolation for the Inferred Mineral Resource Estimate

Assays were composited into 10 meter bench composites and these values used for block interpolation. A search ellipse of 200 meters northing by 250 meters (easting) by 200 meters elevation oriented at azimuth of 350^0 was used for interpolation. The primary zone and the supergene-enriched zones were interpolated separately using the ellipse and an inverse distance squared weighting algorithm. The supergene and primary blocks were tallied at three different cutoff copper values to obtain the inferred resource estimate. The cutoff values used were 0.3, 0.4 and 0.5 percent copper.

A specific gravity of 2.5 tonnes per cubic meter, based on several measurements of typical material, was used to estimate tonnages.

19.4 Consistency of Diamond Drill Data

The length and the consistency of mineralized intervals of the diamond drill data used to calculate the inferred mineral resource at La Fortuna is illustrated in Table 19 – Mineralized

Intervals at La Fortuna. As can be seen from the table, in the 24 holes used in the inferred mineral resource estimate a total of 4,815 intervals representing 9,614 meters of drilling were contained in the database. Of these total 4,815 intervals 2,232 intervals representing 4,457 meters of drilling or 46 percent were above the cutoff of 0.3 percent copper. In general the length and consistency of the mineralized intervals is excellent. Long continuous zones of over 100 meters of mineralization are common and the better holes show continuous mineralization of 400 meters or more. A set of cross sections for La Fortuna is presented in the following figures:

Figure 15 La Fortuna, Section 1400
Figure 16 La Fortuna, Section 1560
Figure 17 La Fortuna, Section 1720
Figure 18 La Fortuna, Section 1880
Figure 19 La Fortuna, Section 2040
Figure 20 La Fortuna, Section 2200
Figure 21 La Fortuna, Section 2360
Figure 22 La Fortuna, Section 2520

19.5 Inferred Mineral Resource Results

Although the block model had the dimensions presented above, to calculate the inferred mineral resource estimate blocks from two portions of the model were eliminated from the calculation. The first portion of the model was any block below 3,475 meters where drilling density drops off significantly. The second portion is located on the northwest edge of the model, where the model is open. Mineralization in holes 25, 26 and 29 was restricted to within 100 meters northwest of these three drill holes.

The inferred mineral resources of the La Fortuna area are presented in Table 20 – La Fortuna Inferred Mineral Resources. The terms mineral resource and inferred mineral resources meet the definition as presented in the August 20, 2000 publication, Canadian Institute Of Mining, Metallurgy and Petroleum, CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines:

> A **Mineral Resource** is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.
>
> An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

Due to the uncertainty which may attach to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration.

Table 18 – Block Model Dimensions

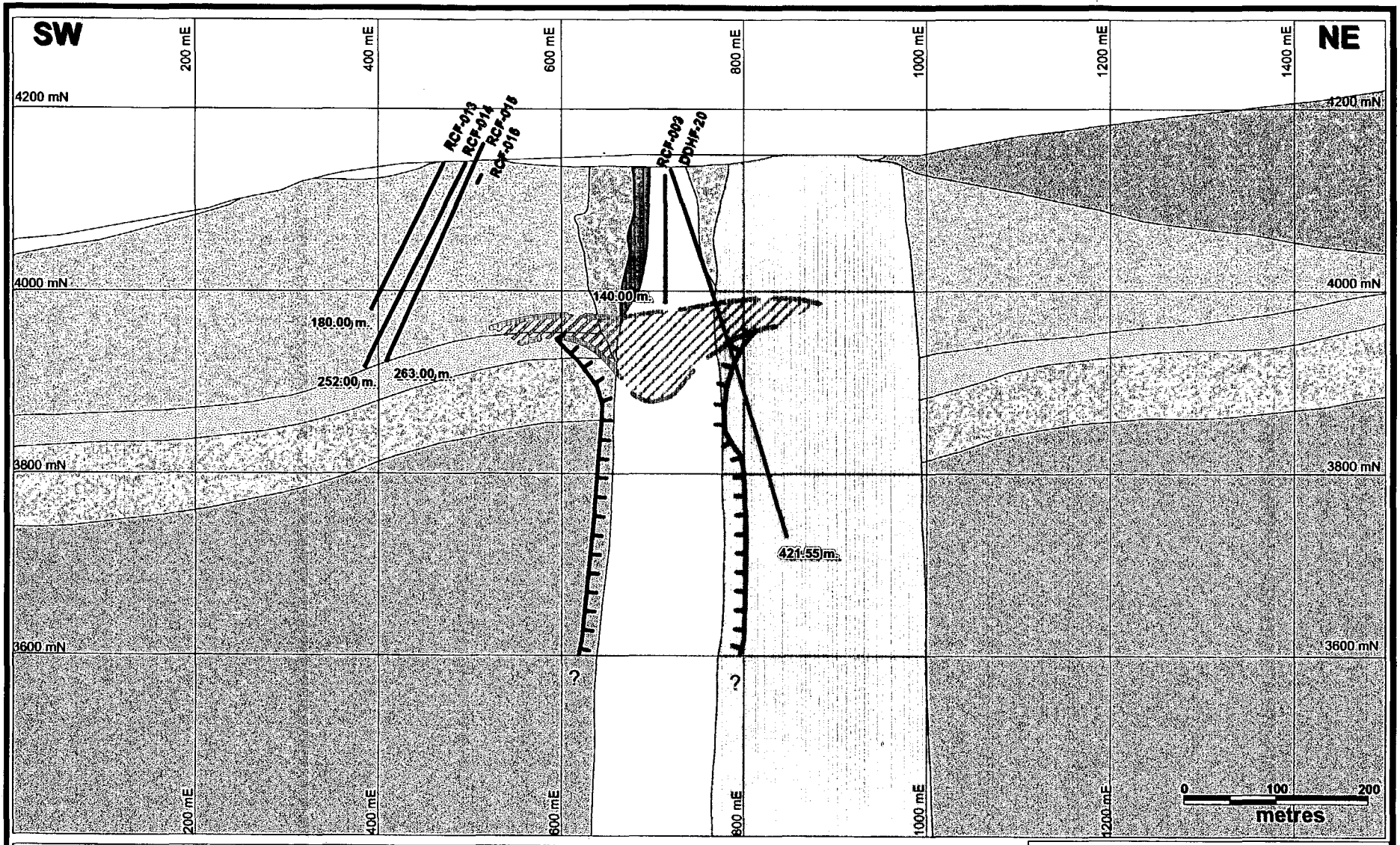
	Minimum	Maximum	No. of blocks
X (UTM Easting)	412,167	414,067	95
Y (UTM Northing)	6,832,437	6,834,737	115
Z (elevation)	3,400	4,340	47

Table 19 – Mineralized Intervals at La Fortuna

	Number	Meters
All Data		
Drill Holes	24	9,614
Intervals	4,815	9,614
Intervals > 0.30 % Copper	2,232	4,457
Intervals < 0.30 % Copper	2,583	5,157
Core Area		
Drill Holes	14	6,414
Intervals	3,216	6,414
Intervals > 0.30 % Copper	2,122	4,237
Intervals < 0.30 % Copper	1,094	2,177

Table 20 – La Fortuna Inferred Mineral Resources

Mineralization Type	Tonnes (000's)	Cu (%)	Au (g/t)	Tonnes (000's)	Cu (%)	Au (g/t)	Tonnes (000's)	Cu (%)	Au (g/t)
Supergene	65,000	0.73	0.26	60,000	0.76	0.27	50,000	0.82	0.27
Primary	475,000	0.52	0.54	350,000	0.58	0.60	230,000	0.65	0.66
Total	540,000	0.55	0.51	410,000	0.61	0.56	280,000	0.68	0.59
Cutoff Used	@ 0.3% Copper			@ 0.4% Copper			@ 0.5% Copper		



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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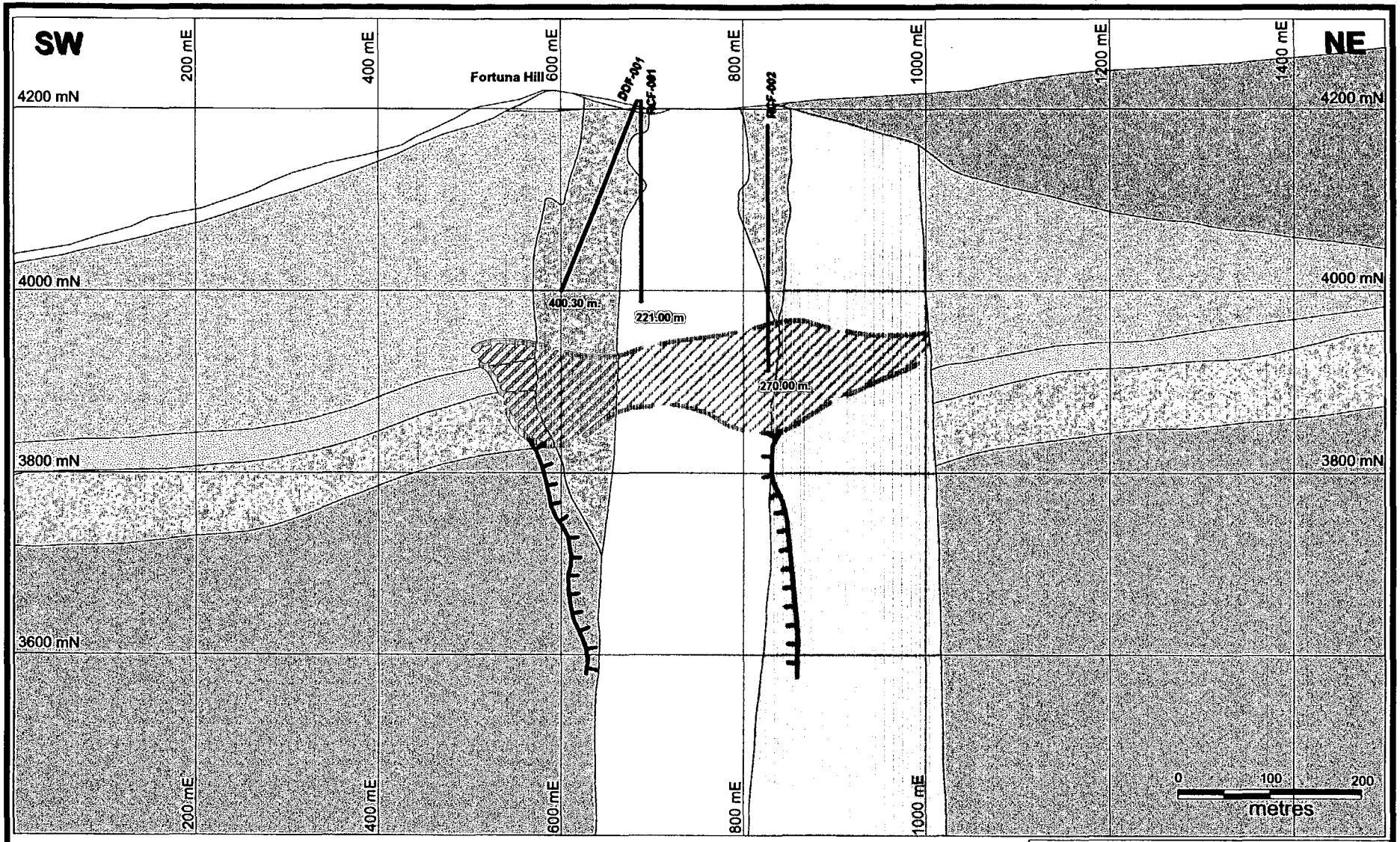
EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 1400 NW

Date: June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	**Figure 15**
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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EL MORRO PROJECT
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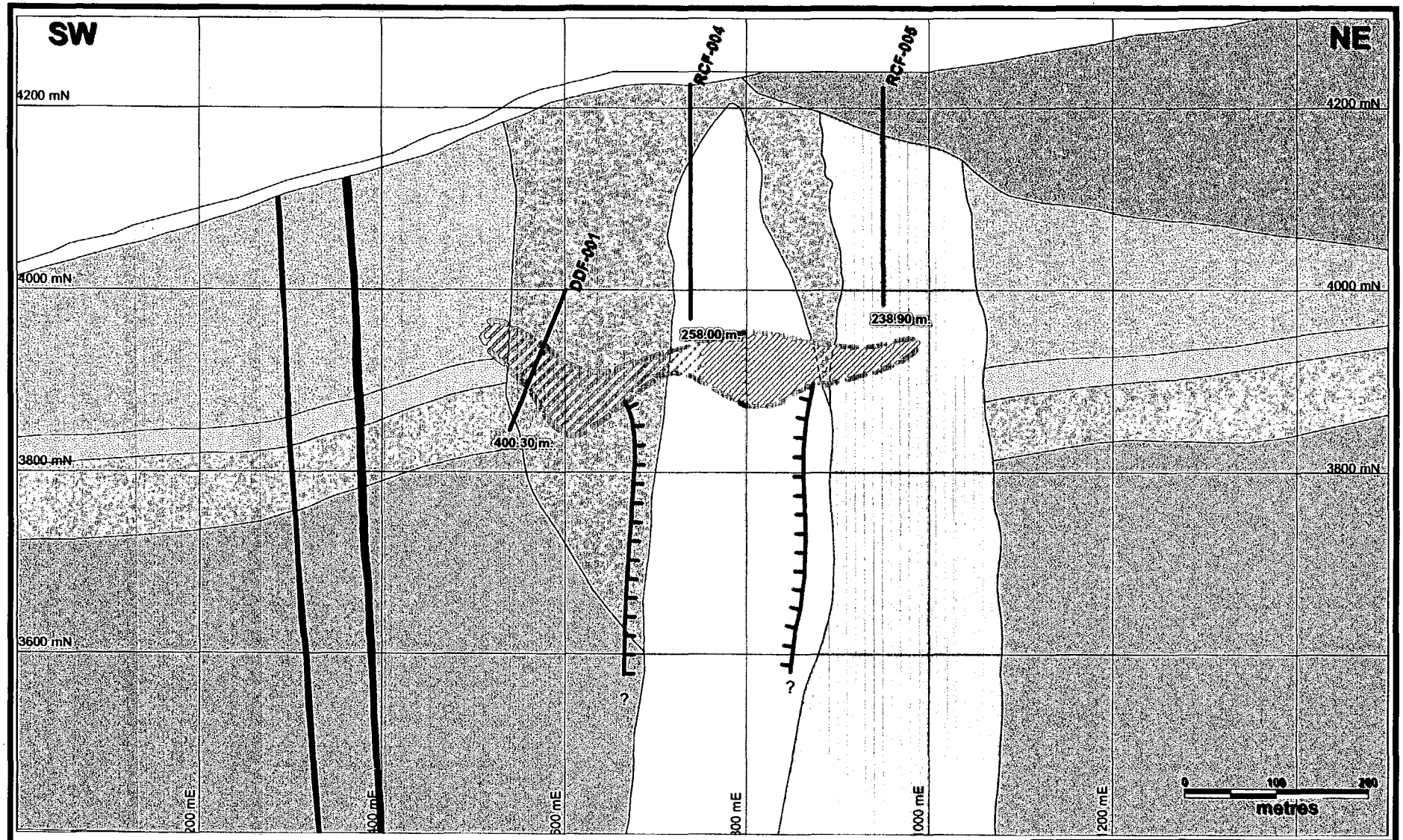
LA FORTUNA AREA
Section 1560 NW

Figure 16

Date:June 2001	
Geologist: Piotr Peleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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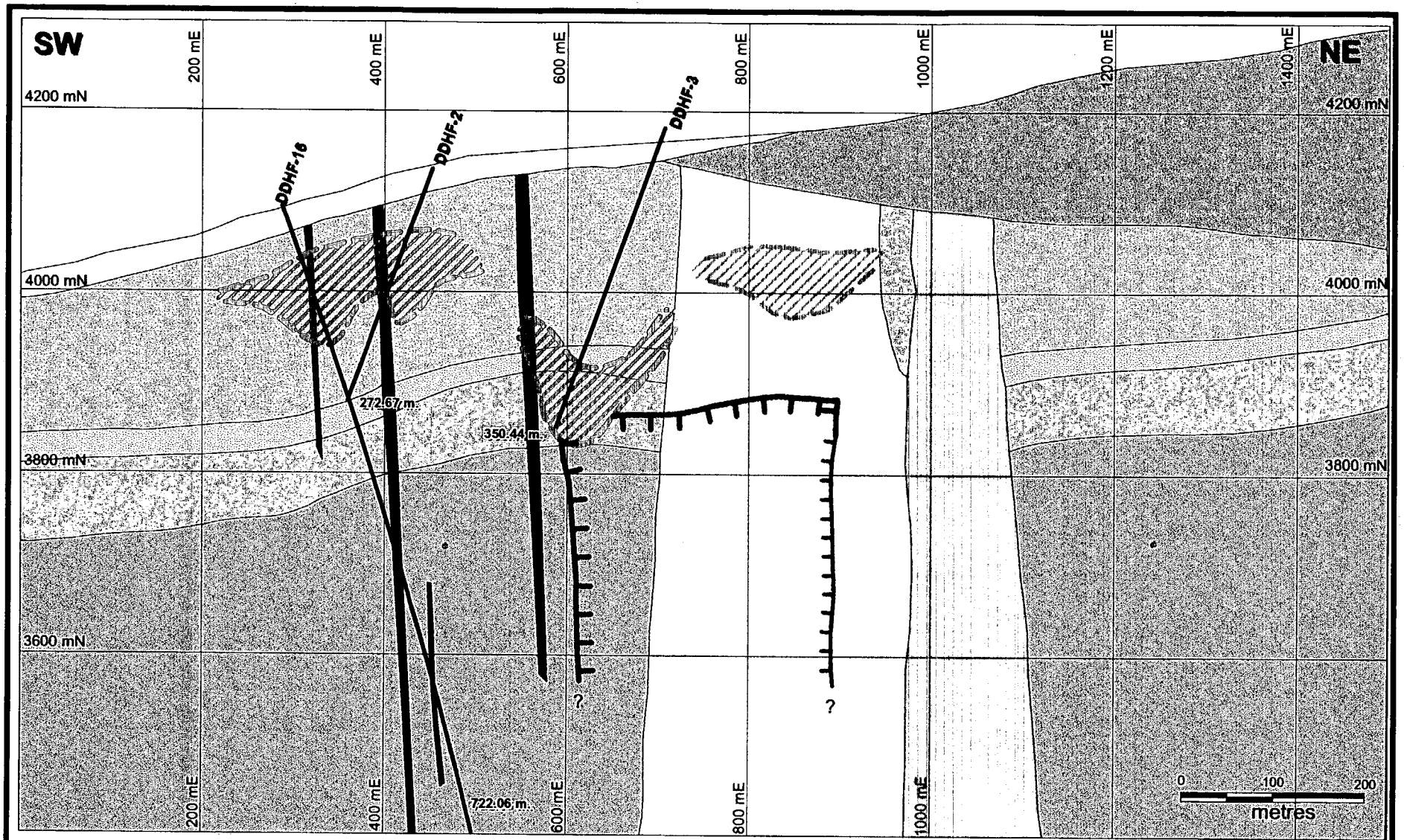
EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 1720 NW

Date: June 2001	
Geologist: Piotr Pateczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	**Figure 17**
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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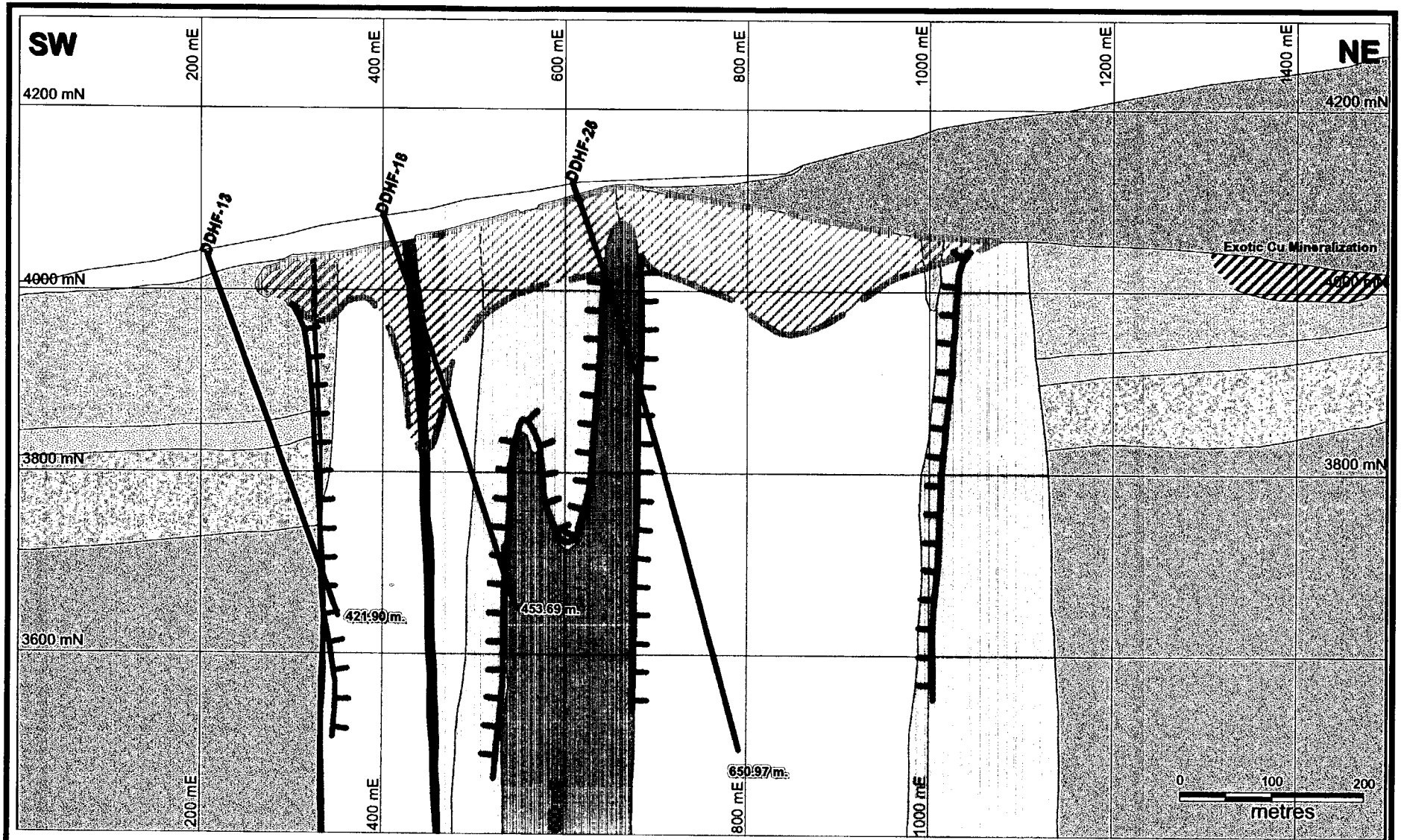
EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 1880 NW

Date:June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	**Figure 18**
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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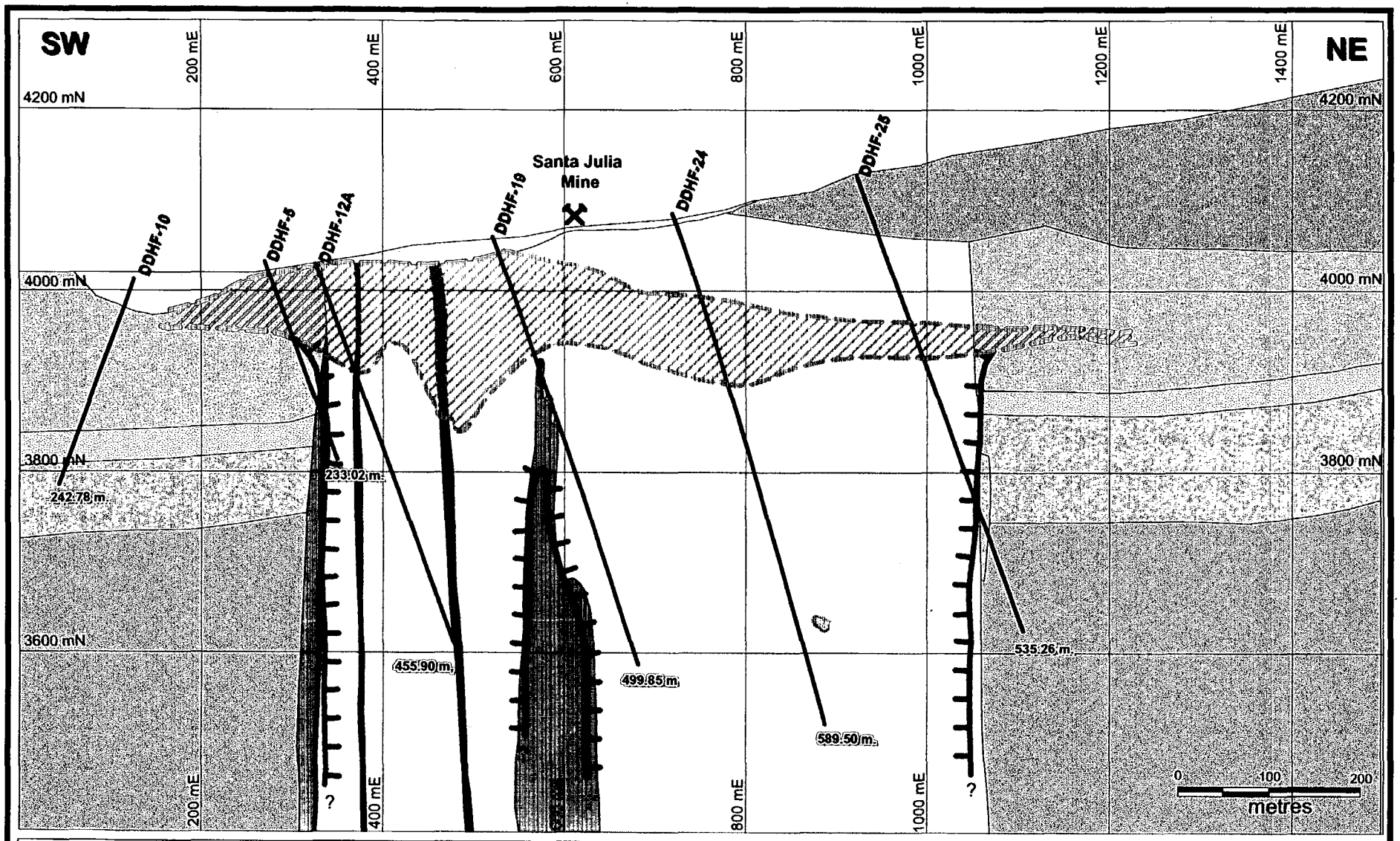
EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 2040 NW

Figure 19

Date:June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

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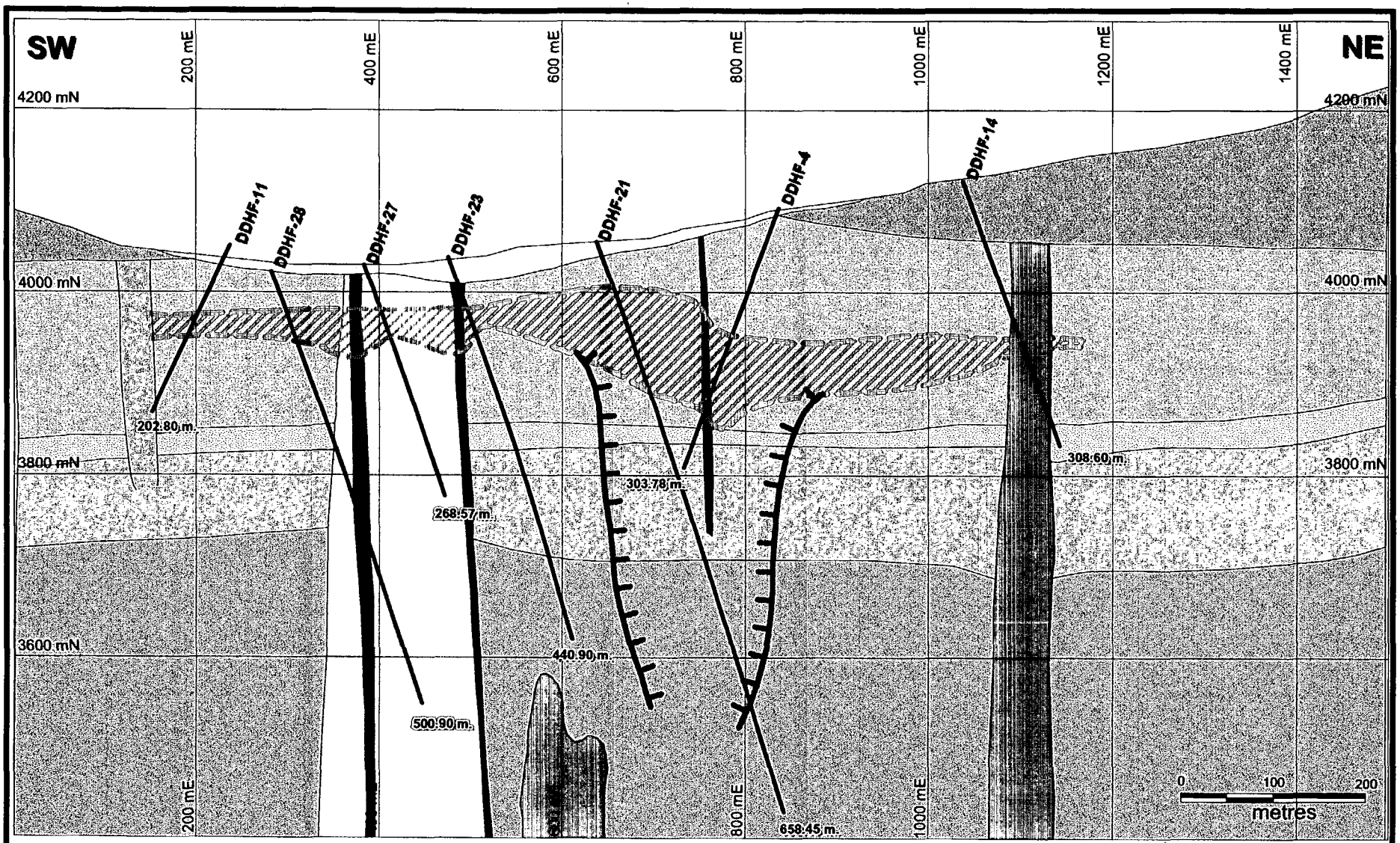
EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 2200 NW

Date:June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	**Figure 20**
Scale: 1:2500	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

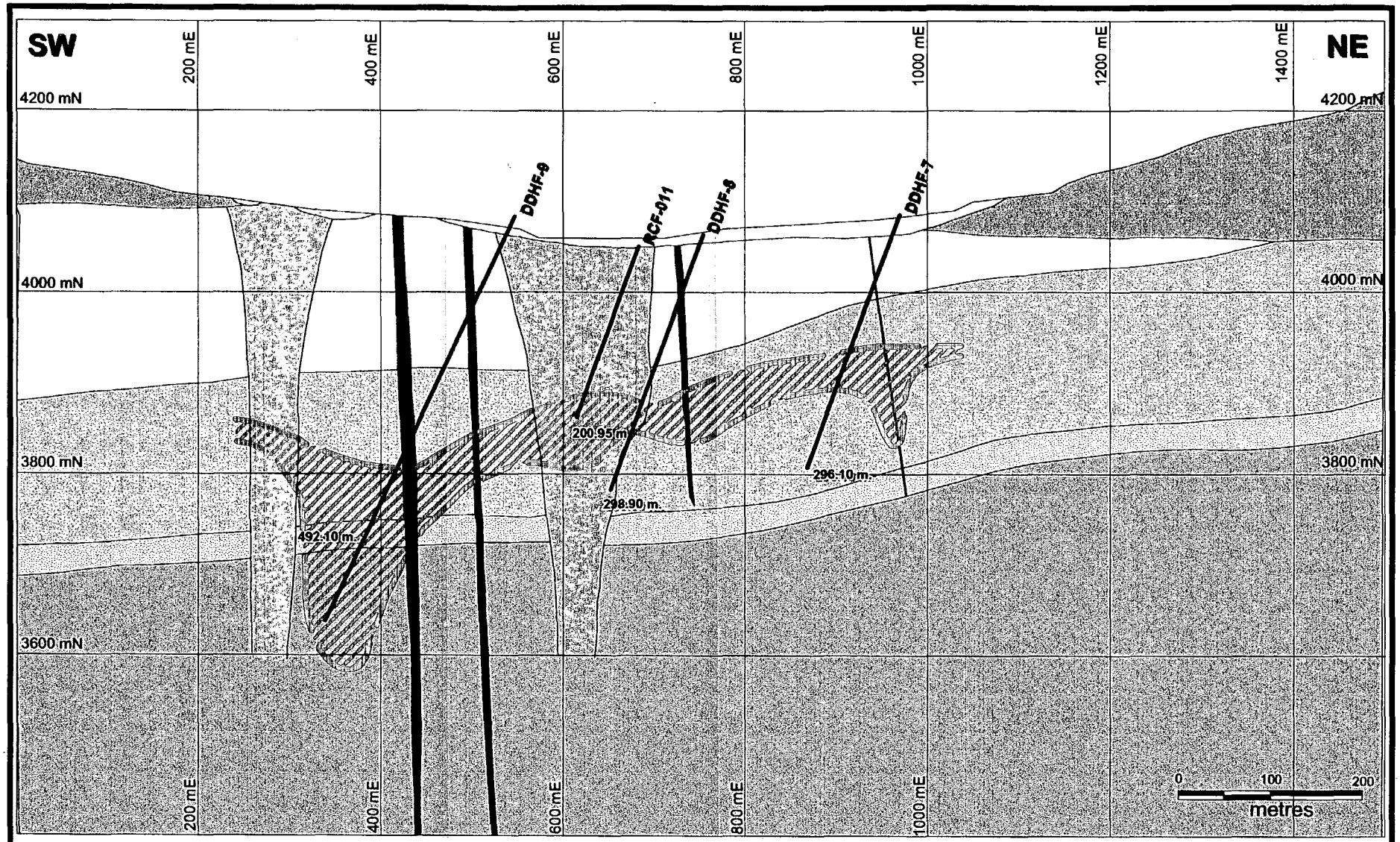
noranda

EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 2360 NW

Figure 21

Date:June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	
Scale:	Projection: Non-Earth (meters)



LEGEND

- Alluvium - Colluvium (Recent)
- Atacama Gravel
- Sandstone
- Andesite Conglomerate Tuff
- Hydrothermal Breccias
- Rhyodacitic Tuff
- Crystal and Lithic Tuff
- Dacite Tuff
- Quartz-Feldspar Porphyry
- Feldspar-Anphibole Porphyry
- Diorite Porphyry
- Enrichment zone
- > 0.3% Cu Isograde

noranda

EL MORRO PROJECT
Noranda Chile Ltda.

LA FORTUNA AREA
Section 2520 NW

Date: June 2001	
Geologist: Piotr Paleczek	
Office: Santiago	
Drawing: J.A.M. W.P.A.	**Figure 22**
Scale:	Projection: Non-Earth (meters)

Item 20: Other Relevant Data and Information

As of the date of this report, the author is of the opinion that the all relevant data and information concerning the El Morro project has been included in this report.

Item 21: Interpretation and Conclusions

21.1 General

Results to date are regarded as very successful. The 2000-2001 exploration campaign had a primary goal of testing the mineralization potential of the La Fortuna area, where preliminary success had been encountered in the 1999-2000 program. The objective was fully accomplished, as it became progressively clear the La Fortuna porphyry was a significant new discovery.

The negotiation with the Cayo family ended with the option to purchase of the 15 hectare Santa Julia property, signed in October 2000. This land constitutes the main body of the presently known mineralization at La Fortuna and is included as part of the El Morro joint venture property.

The Hornitos Court Case moved from Vallenar to Copiapo and finally to Santiago as a result of successive ruling and appeals of the parties in conflict, Metallica and Hornitos. At present the case is in the hands of the supreme court of Chile waiting for a decision. None of the La Fortuna area, where an inferred mineral resource has been calculated, is impacted by the Metallica / Hornitos dispute.

21.2 El Morro

At El Morro, eleven diamond holes with a total of 2,949 meters have been drilled in a copper – gold – molybdenum porphyry type deposit with significant secondary enrichment and primary sulfides. Most of the rocks intersected by drilling are sediments and tuffs affected by strong potassic alteration, leaving open the possibility of a major porphyry body still buried under the local stratigraphy. The mineralogy, alteration assemblages, and grade distribution shows the classic vertical zoning, where an oxidized, leached horizon overlies a zone of enriched copper sulfides, on top of a primary zone. The full lateral extent has not yet been delineated.

21.3 La Fortuna

The La Fortuna mineralized system is the only known occurrence of a late Eocene – Oligocene gold-rich porphyry of this magnitude in Chile. Other occurrences of this type are copper poor and of Miocene age. The La Fortuna area is the most promising of all the areas studied in the district. Here Noranda drilled 25 diamond holes totaling 10,545 meters. Drilling of 200 meter spaced drill holes in a triangular grid, confirmed the existence of an important resource of copper – gold porphyry type mineralization. The 200 meter spaced drilling grid outlined an important granodiorite porphyry body, with copper - gold sulfide mineralization, both secondary and primary. Preliminary calculations show an Inferred Mineral Resource of 410,000,000 tonnes with an average grade of 0.61 percent copper and 0.56 grams per tonne gold at a cutoff of 0.4 percent Copper. The mineralization is open to the north, northwest, and at depth. Additional exploration for both expansion of resources and confirmation of existing mineralization is planned.

21.4 El Negro and Camp Area

At El Negro, seventeen holes have been drilled to test a NNE trending zone defined by small sized porphyry bodies and dykes, intruding a volcano-sedimentary sequence. A halo of strong potassic alteration affects the sequence, where most of the copper-gold-molybdenum mineralization is hosted.

No secondary sulfides are present, and only moderate copper oxides are seen near surface. Results are usually low grade, although local high-grade copper, gold or molybdenum values exist, particularly near intrusive contacts.

The Camp zone is located 1800 meters west of the La Fortuna porphyry and is part of the NNE intrusive trend passing through El Negro and Cerro Colorado. Four core holes totaling 1,104 meters have been drilled at the Camp area. The drilling encountered low grade copper-gold-molybdenum values in dacite porphyry and wallrock.

Item 22: Recommendations

The results at El Morro project are considered very positive. Further exploration is warranted in view of the widespread evidence of mineralization encountered over the entire district, particularly at La Fortuna.

The exploration program proposed by Noranda for the 2001-2002 season includes some 8,500 meters of phased core drilling and 5,000 meters of reverse circulation drilling. To date, Noranda has demonstrated a very aggressive approach to exploration at the El Morro project. From the period of October 1999 to August 2001, Noranda has made total project expenditures of $US 4.3 million on the exploration and development of the El Morro joint venture. A new, winter resistant camp is needed, capable of hosting a minimum of 30 people, including the adequate contracted personnel to carry out all the main activities. Drill contractors would have a separate camp facility. An efficient communication system must be implemented, as well as an improved access road.

With continuing positive results and over the longer term a scoping study and all related data have to be collected, including topography, climate, infrastructure, water, environmental, etc. Regular studies have to be made to characterize the different ore types from metallurgical and geotechnical standpoints. Also an ongoing process must be set up to update geological sections and plans in order to facilitate updated resource calculations.

Specifically at the El Morro area the exploration work proposal is to tighten the drill grid to a 100 meter spacing at the higher grade zone around holes DDHM-1, 5 and 6. The area to the north should be also tested to define mineralization in that direction. Additional possible targets based on anomalous geophysics should also be tested. Geological modeling to target the postulated porphyry stock, where more significant mineralization is expected, should be undertaken.

At the La Fortuna area the future program must increase the drill density to a 100 meter spaced grid, in order to increase the confidence in the resource estimation. The lateral extension of the mineralized body has to be explored, particularly to the north and northwest. Additional dipole-dipole lines and test profiles are recommended to, respectively, fully delineate the La Fortuna area and explore the gravel covered areas.

Additional exploratory drilling is recommended in other anomalous areas, such as the Cerro Colorado and Camp north zones.

The amount and location of the drilling should always be subject to the progressive results and the ongoing analysis and interpretation of the geological information.

Item 23: References

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Certification of Author

I, Fred H. Lightner, P.E. am a Registered Professional Engineer and the Senior Vice President and Chief Operating Officer of Metallica Resources Inc. of Suite 100 - 3979 E. Arapahoe Road, Littleton, CO 80122 USA.. I graduated from the Colorado School of Mines with a degree of Metallurgical Engineer (Professional Engineer Degree) in 1968. I have practiced my profession continuously for 33 years since 1968.

I am:

A Registered Professional Engineer in the State of Colorado, PE 20008
A Registered Professional Engineer in the State of Arizona, PE 11106
A member of the Colorado Section of the Society of Mining Engineers
A member of the Mining and Metallurgical Society of America
A member of the Northwest Mining Association
A member of the Prospectors and Developers Association of Canada

I have been involved in and/or directed:

Mineral exploration for gold, silver, copper, molybdenum, uranium and industrial minerals in Canada, the USA, Mexico, Brazil, Chile, Venezuela, Bolivia, Australia, Costa Rica, Spain, and Papua New Guinea.

Mineral resource estimates of gold, silver, copper, and molybdenum deposits utilizing graphical and computerized geological modeling techniques for numerous mineral deposits.

Mineral project development for gold, silver, copper, molybdenum, lead, zinc, uranium in the USA, Mexico, Ghana, Canada, Papua New Guinea, and Chile.

Operation of producing mines for gold, silver, copper, molybdenum, lead, zinc, and uranium in the USA, Mexico, Spain, Ghana, and Canada. I have been the Senior Operating Executive of three separate companies with producing mines and President of two companies involved in mineral exploration and development.

I have also been retained as an expert witness on mineral property valuation issues.

The source of all geological information for this report is the geological database available at Noranda Chile, Santiago, Chile. The information provided by Noranda Chile, is to the best of my knowledge and experience, correct. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. Although I am not independent of Metallica Resources Inc. exemption from independence has been given since Noranda, our joint venture partner at the El Morro project, is a producing issuer.

I have visited the El Morro project and have reviewed all diamond drill data and other geological data available from Noranda Chile. I have read National Instrument 43-101, Companion Policy 43-101CP, Form 43-101FI. This mineral resource estimation section of this report has been prepared in compliance with NI 43-101, Companion Policy 43-101CP, Form 43-101FI and CIM mineral resource definitions (August 20, 2000).

Dated at Littleton, Colorado, this 14 day of November, 2001.

Fred H. Lightner

Exhibit G

Knight Piésold
CONSULTING

Metallica Resources Inc.
El Morro Copper-Gold Project
Chile, Region III
Order-of-Magnitude Study
(Preliminary Assessment)
Technical Report - Third Party Review

December 26, 2001

Prepared for

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Telephone: (303) 796-0229

Prepared by

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a Registered Professional Engineer and a Principal of
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Project 8009A

Metallica Resources Inc.
El Morro Copper-Gold Project
Chile, Region III
Order-of-Magnitude Study
(Preliminary Assessment)
Technical Report - Third Party Review

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The report Items 6 to 14, and 17 to 19, inclusive, as required by the National Instrument 43-101, are omitted from this report. These items were previously reported in:

Metallica Resources Inc., El Morro Copper – Gold Project, Chile, Region III, Technical Report, by Fred H. Lightner, November 14, 2001

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Metallica Resources Inc.
El Morro Copper-Gold Project
Chile, Region III
Order-of-Magnitude Study
(Preliminary Assessment)
Technical Report - Third Party Review

Item 3: Summary

The El Morro copper-gold project, a joint venture between Metallica Resources Inc. (Metallica) and Noranda Inc. (Noranda), is located in northcentral Chile, Region III, about 80 kilometers east of the City of Vallenar. At the El Morro property, three separate zones of copper-gold porphyry style mineralization referred to as La Fortuna, El Morro, and El Negro have been identified. Total drilling on the property is 28,326 meters in 110 drill holes. Reverse-circulation drilling totals 6,785 meters in 45 holes, and diamond drill core totals 21,541 meters in 65 holes. In addition to the drilling and geological mapping, geophysical, geochemical, and metallurgical studies have been carried out in the exploration program.

The La Fortuna area has given the best results to date in the district. La Fortuna is a classic copper-gold porphyry-type deposit. Mineralization is related to intrusions of granodioritic to dioritic composition, emplaced in a sequence of andesitic conglomerate, tuffs, and sediments. Mineralization consists of primary and secondary copper sulfides with associated gold. The sulfides are found in stockwork or as fine dissemination, mainly in the porphyry units.

The inferred mineral resource in La Fortuna, as defined by Noranda, has been determined to be 410,000,000 tonnes at a grade of 0.61 percent copper and 0.56 grams per tonne gold at a cutoff grade of 0.40 percent copper. At a cutoff grade of 0.30 percent copper, the inferred mineral resource has been determined to be 540,000,000 tonnes at a grade of 0.55 percent copper and 0.51 grams per tonne gold. Molybdenum is associated with this deposit and, while grades are low, it is of some economic interest. The lateral extent of the mineralized body, particularly to the north and northwest, remains open. The limit of the mineralization at depth has also yet to be determined. Further drilling is needed at La Fortuna to upgrade the resource from the inferred category to that of an indicated resource, to better define the mineralization, and to verify the

continuity (vertical and horizontal) of the deposit. Presently, the development of the El Morro and El Negro areas has not advanced far enough to be included in this discussion.

A technical team of professionals from Knight Piésold Consulting (Knight Piésold) have reviewed the data for the El Morro Project and have developed an Order-of-Magnitude Study (Study) or preliminary assessment of the potential economics of the La Fortuna deposit. The Study was based on an annual ore processing rate of 25 million tonnes, or 75,000 tonnes per day (tpd), and a 15-year operating life treating material that contained 0.60 percent copper and 0.55 grams per tonne gold. At an optimistic $1.00 per pound copper price and a $300.00 per ounce gold price, the cash flow indicated an internal rate of return of 19.6 percent on an $801 million investment and a Net Present Value (NPV) of more than $345 million at a 10 percent discount rate. The potential economics indicated that the time to achieve payback was approximately four years.

Knight Piésold's site reconnaissance identified no fatal flaws at this early stage of the project although an Environmental Impact Assessment (EIA) has not yet been completed. The cash flow analysis indicates a reasonable rate of return on investment. It is concluded that there is a reasonable likelihood that the development of the La Fortuna deposit is technically feasible and economically attractive at the higher copper and gold prices used in this study.

There is justification to continue to advance the El Morro Project with continuing exploration and preliminary development activities. Based on successful results, project activity should move through the stages of Pre-Feasibility and Feasibility Studies on to development and operation. It should be noted though that this Study is preliminary in nature and includes inferred mineral resources at La Fortuna. At this time, they are too speculative geologically to have detailed economic considerations applied to them, and at this time they cannot be categorized as mineral reserves. There is no certainty that the preliminary assessment will be realized. Further drilling is needed at La Fortuna to upgrade the resource from the inferred category.

Item 4: Introduction and Terms of Reference

The majority of the exploration work at the El Morro property has been conducted under the supervision and direction of Noranda. Based on Noranda's work, a technical report entitled "Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report" by Fred H. Lightner, dated November 14, 2001, was prepared. The data and information supplied in the Technical Report comprise an integral part of the technical information for the El Morro Project presented herein. The report Items 7 to 14, and 17 to 19, inclusive, as required by the National Instrument 43-101, are omitted from this report. These items were previously reported in the above mentioned report and no change or additional information is evident. Knight Piésold has independently reviewed this document, and the findings and conclusions presented herein are consistent with the data contained in the document.

We concur with Mr. Lightner's opinion that the work conducted by Noranda and the results obtained have been done in a professional manner, which meets or exceeds acceptable industry standards. To the best of our knowledge and belief, all data generated by Noranda are true and accurate.

The El Morro Project consists of three separate zones of copper-gold porphyry style mineralization and has been identified by drilling. This Study is a preliminary assessment of only the La Fortuna area of the El Morro Project. The purpose of the Study is twofold:

- To examine the potential technical and economic viability of the La Fortuna deposit
- To comply with National Instrument 43-101 by providing additional scientific and technical information for the El Morro property

The Study considers 100 percent of the project.

It is assumed that La Fortuna would be operated as a large open-pit mine with a 75,000-tpd processing plant. The plant would include crushing, semi-autogenous grinding (SAG), rougher flotation, scavenger flotation, regrinding of rougher concentrates, two stages of cleaner flotation, concentrate dewatering, and tailings disposal. Both copper and gold values would be recovered in a single final copper-gold concentrate. Concentrate would be transported by truck to a Chilean smelter located in Antofagasta.

Metallica selected Knight Piésold to review the El Morro Project and develop this document. The contributing individuals and their individual responsibilities are presented below:

1. Ms. Barbara A. Filas, P.E., Principal-In-Charge, Mining Engineer, University of Arizona, Qualified Person as defined in the National Instrument 43-101.

2. Ms. Roxana Romero, Mining Engineer, Universidad de Santiago de Chile, Qualified Person as defined in the National Instrument 43-101, Mine Operations, Environmental Characterization, and Site Reconnaissance.

3. Mr. Jaye Pickarts, Senior Project Manager/Metallurgist, Mineral Processing Engineer, Montana College of Mineral Science and Technology, Process Operations/Capital and Operating Cost Estimation, Report Editor.

4. Mr. R. Llee Chapman, CPA and Chief Financial Officer, B.S., Accounting, Idaho State University, Financial Analysis.

5. Mr. Fred H. Lightner, P.E., Senior Vice President and Chief Operating Officer of Metallica; provided assistance in all areas of the report preparation in conjunction with the Knight Piésold team.

The term "Metallica" found in this report can refer to either Metallica Resources Inc. or Minera Metallica Ltda, the wholly owned Chilean subsidiary of Metallica Resources Inc. Similarly, the term "Noranda" can refer to either Noranda Inc. or Noranda Chile Ltda, the wholly owned Chilean subsidiary of Noranda Inc.

Item 5: Disclaimer

This report, "Order-of Magnitude Study (Preliminary Assessment) Technical Report – Third Party Review" of the El Morro Copper-Gold Project dated December 28, 2001, was prepared exclusively for Metallica Resources Inc. The report is based in part upon information supplied by Metallica and in part upon information not within the control of either Metallica or Knight Piésold. While it is believed that the information, conclusions, and recommendations will be reliable under the conditions and subject to the limitations set forth herein, neither Metallica nor Knight Piésold can guarantee their accuracy. No third party shall be entitled to use or rely on this report without the written consent of Knight Piésold and Metallica. The use of this report and the information contained herein shall be the user's sole risk, regardless of any fault or negligence of Metallica or Knight Piésold.

Item 6: Property Description and Location

Item 6 of the technical report entitled "Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report" by Fred H. Lightner, dated November 14, 2001 consists of a detailed property description, land ownership discussions, legal and surface issues, and environmental permitting requirements. Knight Piésold has independently reviewed this section, parts of which have been included in this document.

This Study, prepared by Knight Piesold, considers 100 percent of the project, without regard to ownership. Knight Piésold's site reconnaissance identified no fatal flaws at this early stage of the project although an EIA has not yet been completed.

The findings and conclusions presented are consistent with the data and we concur with Mr. Lightner's opinion that the work conducted by Noranda and the results obtained have been done in a professional manner, which meets or exceeds acceptable industry standards. To the best of our knowledge and belief all data generated by Noranda are true and accurate.

Item 15: Sample Preparation, Analysis, and Security

Item 15 of the technical report entitled "Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report" by Fred H. Lightner, dated November 14, 2001 consists of the methodology employed in the preparation of sample for assay, the assay procedures, and the security applied by Noranda to ensure quality control.

Knight Piésold has independently reviewed this section and the findings and conclusions presented are consistent with the data and we concur with Mr. Lightner's opinion that the work conducted by Noranda and the results obtained have been done in a professional manner, which meets or exceeds acceptable industry standards. To the best of our knowledge and belief, all data generated by Noranda are true and accurate.

Item 16: Data Verification

Item 16 of the technical report entitled "Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report" by Fred H. Lightner, dated November 14, 2001 consists of a description of the Quality Assurance and Quality Control procedures implemented by Noranda for the El Morro Project.

Knight Piésold did not independently verify the data. However, Knight Piésold has reviewed this section of the document. The findings and conclusions presented are consistent with the data and we concur with Mr. Lightner's opinion that the work conducted by Noranda and the results obtained have been done in a professional manner, which meets or exceeds acceptable industry standards. To the best of our knowledge and belief, all data generated by Noranda are true and accurate.

Item 20: Other Relevant Data and Information

As of the date of this report, December 28, 2001, and to the best of Knight Piésold's knowledge, the author is of the opinion that this report contains all relevant data and information concerning the El Morro Project that was either provided directly by Metallica, contained in the previously filed report entitled "El Morro Copper-Gold Project, Chile, Region III, Technical Report" by Fred H. Lightner, Metallica Resources Inc. dated November 14, 2001, or obtained from Knight Piésold's site reconnaissance on November 5-7, 2001.

Item 21: Interpretation and Conclusions

The La Fortuna mineralized system is the occurrence of late Eocene-Oligocene gold-rich porphyry. Other occurrences of this type are typically copper-poor and of the Miocene age. The La Fortuna area is the most promising of the areas studied in the district. Here, Noranda drilled 25 diamond holes totaling 10,545 meters. According to Noranda, the drilling of 200-meter-spaced drill holes in a triangular grid confirmed the existence of a resource of copper-gold porphyry-type mineralization. The 200-meter-spaced drilling grid outlined a granodiorite porphyry body with both primary and secondary copper-gold sulfide mineralization. Preliminary calculations show an Inferred Mineral Resource of 410,000,000 tonnes with an average grade of 0.61 percent copper and 0.56 grams per tonne of gold at a cutoff of 0.40 percent copper. At a cutoff of 0.30 percent copper, the Inferred Mineral Resources are 540,000,000 tonnes with an average grade of 0.55 percent copper and 0.51 grams per tonne gold. The mineralization is open to the north, northwest, and at depth. Additional exploration to expand the current resources and confirm the existing mineralization is planned.

Knight Piésold has developed a Study of the potential economics of the La Fortuna deposit. At an optimistic metal price of $1.00 per pound copper and a $300.00 per ounce gold, the cash flow indicated an internal rate of return of 19.6 percent on an $801 million investment and a Net Present Value (NPV) of more than $345 million at a 10 percent discount rate.

Knight Piésold's site reconnaissance identified no fatal flaws at this early stage of the project although an EIA has not yet been completed. It was concluded that there is a reasonable likelihood that the development of the La Fortuna deposit is technically feasible and economically attractive at the higher copper and gold prices used in this study.

Item 22: Recommendations

The results at the El Morro Project are considered favorable and, in our opinion, warrant further exploration in view of the evidences of mineralization encountered in the district and particularly at La Fortuna.

Specifically, at the El Morro area, additional exploration work is needed to increase the drill density. The area to the north should also be tested to define mineralization in that direction. According to Noranda, additional possible targets based on anomalous geophysics should be tested. In addition, geological modeling to target the postulated porphyry stock, where more significant mineralization is expected, should be undertaken.

Noranda's future exploration program at La Fortuna is designed to increase the drill density and improve confidence in the resource estimation. The lateral extension of the mineralized body has to be explored, particularly to the north and northwest. Additional dipole-dipole lines are recommended by Noranda to delineate the La Fortuna area and test profiles to explore the gravel covered areas. Information and data required to support a pre-feasibility study will have to be collected. In order to generate this information, the following actions are recommended:

- Update geological plans and sections to reflect newly acquired data
- Revise resource calculations when justified by new data
- Install a meteorological station
- Collect environmental baseline data to improve early design considerations (based on environmental management and operability objectives) and verify the absence of fatal flaws to support permitting
- Initiate mine planning activities when justified by resource results
- Compile geotechnical data and select sites for major facilities
- Undertake a complete metallurgical testing program to support flowsheet design
- Investigate infrastructure requirements for the project such as power, access, and water
- Study the economic and social impacts of the project from both local and regional perspectives

Additional exploratory drilling is recommended in other anomalous areas. The amount and location of the drilling should always be subject to the progressive results and the ongoing analysis and interpretation of the geological information.

Item 23: References

Piotr, P., C. Caceres, G. Valenzuela, and M Savell, 2001, "Noranda Chile Ltda, 2001, El Morro Project Report for Seasons 1999-2000 and 2000-2001," August.

Knight Piésold S.A. 2001, "Noranda Chile Ltda, El Morro Exploration Project, Environmental Strategy," July.

Lakefield Research, 2001, "The Recovery of Copper and Gold from Two Samples, El Morro," August 14.

Lightner, F.H., 2001, "El Morro Copper-Gold Project, Chile, Region III, Technical Report, Metallica Resources Inc.," November 14.

Item 24: Date

The effective date of this report is December 26, 2001.

Item 25: Additional Requirements for Technical Reports on Development Properties and Production Properties

25.1 Background

In the previous report, "Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report," by Fred H. Lightner dated November 14, 2001; the following inferred mineral resources were reported:

Cutoff (% copper)	Tonnes (000s)	Copper (% copper)	Gold (grams per tonne)
0.4	410,000	0.61	0.56
0.3	540,000	0.55	0.51

An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes.

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration.

25.2 Project Description

25.2.1 Mining Operations

The development of the La Fortuna deposit is envisioned as a large open-pit mine. An average ore to waste ratio of one tonne of ore to every 1.25 tonnes of waste has been estimated by Metallica based on a preliminary examination of cross-sections. Further confirmation of the ore to waste ratio is needed as well as the development of a preliminary pit model. The total annual production will be 25 million tonnes of ore and 31.25 million tonnes of waste for a total of 56.25 million tonnes of material. The consistency and length of mineralized zones will enable the operation to mine 20-meter benches and use large loading and hauling equipment. A preliminary determination of the equipment required to operate and support an open pit mine of the above scale has been made and is presented in Table 1, Mining Equipment.

Hydraulic shovels were chosen as primary loading units to reduce loading costs and increase productivity. The use of hydraulic shovels versus electric shovels will minimize the capital cost and power line network required for the mine site and will provide operating flexibility. Haul trucks were selected as the largest unit available and compatible with the loading units. A truck shop complex that includes a multiple bay shop, a fuel/wash facility, maintenance offices, and warehouse will support the mine equipment fleet.

Mine waste repositories are considered for this evaluation to be located proximate to the pit in order to minimize haulage costs. Similar sized trucks as those used for mineral haulage will be used for mine waste, and it is likely that the waste embankments will be sloped at an angle of repose. Appropriate diversion systems will be developed in the event that these repositories are located in perennial streams or in areas with surface runoff.

25.2.2 Processing Plant

The proposed 75,000-tpd concentrator will use large equipment to attain lower capital and operating costs. The design will be conventional with the use of proven equipment and process operations. The processing flowsheet will include primary crushing and semi-autogenous grinding, followed by conventional ball milling and flotation stages to produce a single copper-gold concentrate. The concentrate will be dewatered and shipped by truck to a smelter. Figure 2, Simplified Project Flowsheet, and Table 2, Major Process Equipment, present the basic flow diagram and preliminary selection of the major equipment, respectively. Based on the general lithology and petrographic work concerning mineral grain size, an assumed Bond Work Index of 12 was used to size the communution equipment.

An additional investigation will be required to properly evaluate the potential for by-product molybdenum production. The molybdenum content may be sufficient to justify the recovery of a separate concentrate.

The tailings dam will use the downstream method of construction in which a clay core provides an upstream seal while the coarse tailings sands are used to construct the downstream mass of the dam. The slimes will be deposited upstream of the dam, and cyclone deposit methods may be employed. A siting study will need to be completed in order to confirm the final location of any tailings storage facility and any potential impacts.

25.2.3 Recoverability

In 2001, Lakefield Research of Toronto conducted preliminary metallurgical testing on two composites of drill core from La Fortuna. The samples were composited to represent primary (Hypogene) and secondary (Supergene) enriched copper mineralization. Head assays for the composites were 0.60 percent copper and 0.58 gram per tonne gold for the primary sample and 1.22 percent copper and 0.30 gram per tonne gold for the secondary enriched sample. The use of potassium amyl xanthate as a collector, a primary grind of approximately 150 mesh, and a flotation pH of ~10 gave copper rougher recoveries above 90 percent for both samples. At this copper rougher recovery, gold recoveries ranged from 55 to 78 percent and 65 to 78 percent for the primary and secondary-enriched samples, respectively.

Preliminary cleaning tests indicated that final copper concentrate grades above 30 percent could be achieved for both samples with a regrind of approximately 400 mesh and a pH of ~11. Flotation conditions were not optimized, and no locked cycle tests have been completed to accurately predict overall grades and recoveries. The final concentrates from both the primary- and the secondary-enriched samples were assayed for arsenic, antimony, and bismuth. The secondary-enriched concentrate contained 0.84 percent arsenic, 0.23 percent antimony, and 0.008 percent bismuth. The primary sample had generally lower values of these elements and contained 0.46 percent arsenic, 0.016 percent antimony, and 0.008 percent bismuth.

Based on the testing done to date, the estimated metallurgical results are presented in Table 3, Overall Metallurgical Balance. In operating years 1 to 5, a final concentrate grade of 35 percent copper has been predicted. During these years, more secondary-enriched copper mineralization containing a majority of chalcocite will be processed. In operating years 6 to 15, a concentrate grade of 30 percent copper is used. During this period, more primary mineralization containing a majority of chalcopyrite will be processed. Additional work is required to confirm these predicted metallurgical results.

25.2.4 Infrastructure and Support Facilities

In order to efficiently operate the mine and concentrator, considerable infrastructure and support facilities will be required. The major items include adequate and properly maintained access roads; maintenance facilities for both mining and processing; warehouse and parts storage; fuel storage; reagent mixing and handling; administration offices; powder magazine and explosives storage; complete camp facilities; reliable communications at the local, national, and

international levels; and an adequate power and water supply. Figure 3, Conceptual Layout of Facilities, presents a preliminary location of the project site.

25.3 Markets

The El Morro Project is expected to be a producing copper mine with significant gold byproducts. Throughout the 1990s, the copper market was in a constant growth. The average growth rate was 3.8 percent per annum. Demand outstripped supply on all accounts. From 1993 through 1997, global copper consumption went from 13,713 tonnes to 16,310 tonnes. The U.S.A. is the world's largest copper market. The copper price is very sensitive to inventory supplies on hand and worldwide consumption.

During the last couple of years, the copper market has suffered with copper falling from well over $1.00 per pound to its current levels of around $0.65 per pound. Mine production has fallen also as the price has drifted downward during this time. Analysts anticipate that the copper inventories and production are now relatively in balance with world consumption. The economic and growth opportunities that will be initiated shortly will drive the price of copper up during the next few years. Historical growth rates of 2.8 to 3.8 percent are expected in the near term as technology will rebound and continue to drive the copper rates up.

While the El Morro Project is primarily a copper mine, the Project will receive a significant value from recovered gold ounces of approximately 300,000 ounces per year. The gold market has been at historic levels in the $260.00 to $300.00 range for the last six to seven years. Mine production has fallen over the last six to seven years, but only slightly. Many of the operations have moved to South America or Africa where lower production costs and higher ore grades make it attractive to invest large sums of capital. Gold is not affected like copper or other industrial metals. There is a supply of gold bullion being stored in central banks around the world, and as monetary policy changes in these countries, gold is either purchased or sold on the open market with the goal of balancing these inventories. Gold futures traders are currently shorting the market as well, which means that more traders think that the price of gold will trend downward in the short term. Interest rates and currency valuations also affect the price of gold as the metal is seen as an inflation hedge or a safe harbor in some areas and as currency in others.

Our conclusion is that the price of gold will trade in a narrow range for the short term (one to two years), more or less at its current rates. Following this time period, it is expected that the price

will begin a slow rise into the $300.00 to $325.00 range. The conclusions reached by the Study suggest that the trading range for the gold byproduct credit will be from $275.00 to $325.00, which we feel is a conservative assumption. The El Morro Project is four to five years away from commercial production. The price assumptions as stated in the Study represent conservative estimates. It is our general feeling that the copper prices will trend upward at a 3 percent average rate based on technology and economic growth in developing countries over the life of the El Morro Project. The short-term outlook for gold is in about the same trading range as last year with modest growth after that.

25.4 Contracts

At this early stage of the Project, no discussion or investigation of any contracts has been conducted. One of the more important contracts for a potential mine operation at El Morro will be the smelter contract for the purchase of concentrates. Noranda owns and operates a smelter located in Antofagasta, Chile. For the purposes of this study, it is assumed that Noranda will be the purchaser of the concentrates on the basis of an independently negotiated, arm's length contract. Contracts for other services and supplies are assumed to be available on a competitive basis due to the established size and number of copper mines operated in northern Chile.

25.5 Environmental Considerations

A site visit was undertaken from November 5-7, 2001, by Knight Piésold S.A., incorporating the access road and the El Morro, El Negro, and La Fortuna exploration areas. The following general characterization is based on information obtained during this visit.

The current access road connects the Chanchoquin town with Vallenar via Route C-495. The initial part of this road is located along a hill slope adjacent to the Embalse Santa Juana irrigation dam and follows the ridge through many sharp curves for many kilometers. From Chanchoquin, the access road follows another public road (C-487 Route) for 30 kilometers, through the La Totora and Seca Valleys. Hereon, a private road is taken to La Fortuna which has many areas of steep inclination and which accumulates much snow during winter due to its topographical and climatic characteristics. The development of the El Morro Project will likely require the siting of a new access road that would facilitate the optimization of transport conditions, road maintenance, and safety.

Current site characteristics indicate a history of mine related activity. Exploration roads exist as well as evidence of small-scale mining activity (pirquenes) at La Fortuna and El Morro. Much of the small-scale mining in the area has been for gold recovery although the La Fortuna area has a shaft and small pit known as Santa Julia where gold and copper were mined from 1932 through the 1950s.

The exploration area is generally characterized as hilly terrain at an average altitude of approximately 4,000 meters above sea level (masl) within the high Andes, rising to the east over 5,000 masl toward the border with Argentina. The headwaters of the tributaries of the Huasco River are located in this area, the latter being used for farm irrigation in the province. The Huasco River is a "closed drainage" as the water rights have been fully allocated, and no further rights can be granted by the agencies.

No electrical distribution lines are located in the area, nor are there meteorological stations. Agriculture forms an important component of land use in the El Huasco Province, and both cattle and agricultural activities (export grapes) are located within the vicinity of the exploration area.

Vegetation is scarce, in general, within the exploration footprint areas and particularly on the hill slopes and is located predominately in each of the valley floors.

25.5.1 Background and Current Status

The General Environmental Law 19.300 of March 1994 defines the Chilean environmental regulations. The Environmental Impact Evaluation System (SEIA) was established in April of 1997 to govern the environmental evaluation process in accordance with Law 19.300. The National Environmental Committee (CONAMA) and Regional Environmental Committees (COREMAs) are the agencies established by Law 19.300 that are responsible for environmental management in Chile.

For a project or activity to be environmentally evaluated, it must be submitted into SEIA, and the CONAMA is responsible for administrating the environmental impact evaluation procedures. Both exploration and mine development projects are included. The type of assessment required for each project can be either (1) an Environmental Impact Assessment (EIA), or (2) an Environmental Impact Declaration (DIA).

In broad terms, an EIA in Chile is comparable with generally accepted international practice for an EIA and is required if there is sufficient reason for speculating that the project may produce certain specified environmental impacts. A DIA is a document that establishes that the project will comply with current norms and environmental standards. A DIA for the El Morro Project was filed in Copiapo before the CONAMA – III Region on October 5, 2001. The scope of the permit was for an advanced evaluation stage by the use of drilling for a period of three years. The evaluation is in progress, and approval is expected in early 2002.

25.5.2 The EIA Process

To obtain approval for actual mine development, an EIA will have to be submitted, and the following steps of the review process will proceed:

- Submission of the EIA into SEIA
- Review by the environmental authorities
- Public consultation
- Report of suggestions and inquiries provided by CONAMA to the project owner
- Addendum provided by the project owner in response to the inquiries
- Review of the addendum by the agency and the submittal of further inquiries, if necessary
- Technical report by the agency summarizing the review process

At the end of the process, an Environmental Qualification Resolution (RCA) will be issued. A favorable resolution or approval can be conditional upon compliance with a list of environmental management requirements mutually developed between the project owner and the agency. An unfavorable RCA will result in a rejection of the application. In terms of time periods, the law establishes that the environmental authority has a period of 120 working days, extendible for an additional 60 working days, to provide an RCA for the project via their review of the EIA.

The Law 19.300 defines the environmental aspects to be presented in a baseline study to support an EIA. These include:

- The physical environment
- The biotic environment
- The socioeconomic environment
- The man-made environment
- Use of environmental elements (land use)
- Heritage

- Landscape
- Areas of "natural risk"

International criteria, such as that of the World Bank, do not provide specific details concerning the depth or methodologies required for obtaining baseline information. However, baseline studies should be sufficient to identify all potential issues; determine the significance of critical, site-specific issues; and contain an adequate monitoring period to allow for seasonal and, in some cases, annual variations.

In preparation for an EIA for possible mine development, initial baseline studies are being initiated. An early baseline study with a moderate level of effort over a longer time period may give greater credibility to the environmental assessments than an intense baseline study conducted over a shorter period. The objective would be to provide sufficient information for identifying potential effects that might occur during exploration activities and for identifying issues associated with project development that need to be considered in project planning and EIA preparation. The level of detail would systematically increase as areas of importance are identified and as commitments to project development evolve. An initial community relations program is also being developed and implemented.

25.6 Taxes

Corporations in Chile are subject to a First Category Tax on accrued taxable income (whether distributed or not) of 15 percent. If distributions to nonresident shareholders are made, they are subject to a 35 percent Additional Tax payable upon distribution. If the income was subject to the First Category Tax, a credit against such Additional Tax is given equal to the First Category Tax. Consequently, a dividend distributed to a nonresident shareholder will be subject to a 35 percent total tax burden. An 18 percent Value Added Tax (VAT) on all equipment and services applies, but mining operations may apply for a full refund of VAT. Import duties of 11 percent apply to foreign equipment, but these duties can be eliminated if the equipment is used in the production of goods to be exported.

Depreciation on fixed assets, except for land, is tax deductible by the straight-line method based on useful life. The taxpayer may opt for accelerated depreciation provided the normal useful life is over five years. For accelerated depreciation, the assets will be assigned useful lives equivalent to one-third of normal. Taxpayers may discontinue the use of the accelerated method at any time but may not later return to it. The Chilean Internal Revenue Service has issued

general guidelines on the useful lives of fixed assets for mining. However, the Regional Tax Director may, at the request of the taxpayer, modify the applicable depreciation if deemed advisable.

The following major assumptions concerning taxation have been included for the El Morro economic model:

- The First Category Income Tax of 15 percent is applied to taxable income.
- The Additional Withholding Tax of 35 percent is not applicable since profits are reinvested in Chile. Overall effective tax rate is therefore 15 percent. How the profits will be reinvested or converted into a non-taxed export have yet to be determined. This information is not expected at this level of study, but will be examined as the project proceeds into the next phase of development.
- An accelerated straight-line depreciation over three years is used for rolling stock, and five years is used for milling equipment.
- Straight-line depreciation over six years is used for Exploration, Development, and Feasibility costs.
- Straight-line depreciation over ten years is used for fixed assets and sustaining capital.
- The 18 percent VAT receives full refund and is not included.
- The 11 percent import duties are eliminated by the production of goods for export.
- Minor tax credits and geographic tax exemptions may exist but have been disregarded as inconsequential.
- Losses may be carried forward indefinitely.

25.7 Capital and Operating Cost Estimates

25.7.1 Mine Capital Costs

Capital costs were developed for the major mine and support equipment. In addition to the initial mine capital costs, sustaining capital for major equipment rebuilds and the replacement of light vehicles and support equipment have also been considered. Allowances for smaller general maintenance items are contained in the operating costs. Table 4, Mine Capital Costs, summarizes the total capital cost for mining by year.

25.7.2 Process Capital Costs

Process capital costs are mainly factored and include the concentrator, general support facilities, and tailings disposal areas. The main infrastructure items of access road, permanent power supply, water supply, and camp facilities have not been included in the process capital and are estimated separately in the next paragraph. At the 25,000,000 tonnes of ore per year treatment rate, the daily capacity of the concentrator will be approximately 75,000 tonnes per day. The capital cost was factored at $7,333 per tonne day of production capacity resulting in the process capital amounting to $550,000,000 million dollars.

25.7.3 Infrastructure and Development Capital Costs

In addition to the mine and process capital, additional capital will be required for continued exploration and feasibility evaluation. To support the mine operation, an adequate mine access road, an installed permanent power supply, a reliable supply of water, an engineered tailings storage facility, and a man camp will all be required. Table 5, Infrastructure and Development Capital Costs, presents an estimate of these capital costs.

25.7.4 Capital Cost Summary

Table 6, Capital Cost Summary, presents a consolidated summary of all project capital costs by year. An allowance for miscellaneous sustaining capital over and above the major mine maintenance capital is also included. No contingencies are specifically identified, but the estimates for each area are believed to be adequate for this order-of-magnitude study.

25.7.5 Mine Operating Costs

Mine operating costs are based on experience and researching costs at similar Chilean operations. The estimate of the operating costs for the mining operation, inclusive of wages and benefits, is summarized by area in Table 7, Mine Operating Costs.

25.7.6 Process Operating Costs

Process operating costs are based on experience and researching costs at similar Chilean operations. The estimate of the operating costs for the process operation, inclusive of wages and benefits, is summarized by area in Table 8, Process Operating Costs.

25.7.7 General and Administration Operating Costs

General and Administrative costs are based on a fixed dollar amount of $11 million per year or $0.45 per tonne of ore. Included in these costs are site administrative services, camp facilities, infrastructure services and maintenance, safety, and health.

25.7.8 Operating Cost Summary

Table 9, Operating Cost Summary, presents a consolidated summary of all project operating costs by year. The mine operating costs escalate by 10 percent in operating year 6 and operating year 11 to allow for a deeper mine and longer hauls for ore. No contingencies have been specifically identified.

25.8 Economic Model and Analysis

25.8.1 Assumptions and Methodology

Several assumptions used to develop the economic model, such as capital costs, operating costs, and taxes, have already been discussed. Other assumptions that have been used that are critical to the economic models presented include:

- A Net Smelter Royalty of 1 percent has been applied to all production.
- 100 percent equity basis; no debt has been included.
- Constant December 2001 U.S. dollars; no price or cost escalation included or currency fluctuations.
- Mine operations start after an optimistic four years of exploration, development, and construction.

The annual depreciation used is presented in Table 10, Annual Depreciation Summary, and is determined by the criteria discussed under Section 25.6, Taxes.

In order to calculate the smelter return, typical smelter terms were assumed to be:

- Treatment Charge: $90.00 per dry metric tonne of concentrate
- Refining Charge: $0.0925 per pound of payable copper
- Copper Payment: Deduct the greater of 1.1 units or 3.25 percent
- Gold Payment: Deduct 3 percent for concentrates > 10 grams per tonne
- Gold Refining: $5.00 per ounce of payable gold

- Arsenic Penalty: $2.00 per 0.1 percent over 0.2 percent
- Inland Freight: $30.00 per tonne of concentrate

Moisture deductions have not been included in this schedule but should be considered in future evaluations.

25.8.2 Results

At a copper price of $1.00 per pound and a gold price of $300.00 per ounce, the Project returned 19.6 percent after tax on a capital investment of $801 million. The related NPV at a 10 percent discount rate was $345 million.

The base case economic model is presented in four separate tables:

- Table 11, Annual Production Summary
- Table 12, Base Case – Annual Net Smelter Returns
- Table 13, Base Case – Cash Flow Statement
- Table 14, Base Case – Economic Results

At La Fortuna, there is potential to increase the resources at depth and laterally and thereby enhance the project economics. Increased resources may support a larger mine operation that could benefit from greater economies-of-scale.

25.8.3 Payback

Payback was determined from the first year of actual production. The payback of the Project at the metal prices of $1.00 copper and $300.00 gold was determined to be four years. At the lower prices of $0.75 copper and $275.00 gold, the payback is lengthened to 6.7 years. Conversely, at the higher prices of $1.25 copper and $325.00, the payback is reduced to 2.9 years.

25.8.4 Mine Life

The mine life for all cases was optimistically assumed at four years for pre-production exploration, including development and construction, followed by 15 years of active mine operations. No considerations were identified in the technical data for closure, post mining activities, or salvage value.

25.8.5 Sensitivities

Sensitivities to metal prices, capital costs, and operating costs were examined. Results are summarized in Table 15, Summary of Economic Sensitivities; in Figure 4, Plot of Metal Prices vs. Net Present Value; in Figure 5, Plot of Metal Prices vs. Internal Rate of Return; and in Figure 6, Plot of Sensitivity Variance vs. Internal Rate of Return. The economic models of each of the sensitivity cases are a repeat of the base case tables with four separate tables of each case:

Table 16	Low Prices – Annual Net Smelter Returns
Table 17	Low Prices – Cash Flow Statement
Table 18	Low Prices – Economic Results
Table 19	High Prices – Annual Net Smelter Returns
Table 20	High Prices – Cash Flow Statement
Table 21	High Prices – Economic Results
Table 22	Capital Costs + 20% – Annual Net Smelter Returns
Table 23	Capital Costs + 20% – Cash Flow Statement
Table 24	Capital Costs + 20% – Economic Results
Table 25	Capital Costs - 20% – Annual Net Smelter Returns
Table 26	Capital Costs - 20% – Cash Flow Statement
Table 27	Capital Costs - 20% – Economic Results
Table 28	Operating Costs + 20% – Annual Net Smelter Returns
Table 29	Operating Costs + 20% – Cash Flow Statement
Table 30	Operating Costs + 20% – Economic Results
Table 31	Operating Costs - 20% – Annual Net Smelter Returns
Table 32	Operating Costs - 20% – Cash Flow Statement
Table 33	Operating Costs - 20% – Economic Results

Item 26: Illustrations

Illustrations are included as figures in the specific items of this report.

Certification of Qualified Person

I, Roxana Romero, am a Professional Engineer and a Project Engineer for Knight Piésold S.A. Marchant Pereira 221, Piso 7, Santiago, Chile. I am a graduate of the Universidad de Santiago de Chile with a degree in Mining Engineering. I have practiced my profession continuously for 10 years since 1991.

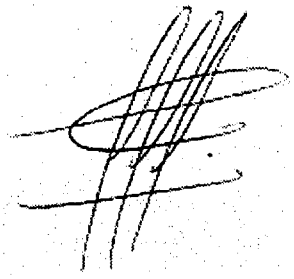
I am also completing a Masters degree, titled: *Magister en Gestión del Medio Ambiente y los Recursos Naturales. Universidad Politécnica de Madrid (en curso).*

As a mining engineer, I have over 10 years of experience in environmental and engineering studies and permit acquisition for mining projects. I have participated in Environmental Impact Studies and Impact Declarations for mining projects and in the preparation of permit acquisition reports for waste dumps, tailings facilities, leach pads, and process plant construction. I have also participated in the development of closure plan reports for submittal to the regulatory agencies. My experience includes projects in Chile, Argentina and Brazil.

The source of the geological and financial information for this report was provided by Metallica Resources Inc. The information provided by Metallica is, to the best of my knowledge and experience, reasonable for a mining project at this stage of development. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report. The calculations used in the financial reports were verified by Knight Piésold accounting personnel.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. I have visited the El Morro project site on November 5 – 7, 2001, and I have reviewed the data contained in the report entitled "Technical Report" submitted by Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report, Fred H. Lightner, November 14, 2001. I have read the National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101FI.

Dated at Santiago Chile, this 26 day of December, 2001.



Roxana Romero
Mining Engineer No. 57.023

Certification of Author

I, Barbara A. Filas, P.E., am a Registered Professional Engineer and a Principal of Knight Piésold and Co., 1050 Seventeenth Street, Suite 500, Denver, Colorado 80265-0500 U.S.A. I am a graduate of the University of Arizona with a degree in Mining Engineering. I have practiced my profession continuously for 23 years since 1978.

I am:

A Registered Professional Engineer in the State of Colorado, PE25261
A Registered Professional Engineer in the State of Nevada, PE7717
A Registered Professional Engineer in the State of Oregon, PE15315
A Registered Professional Engineer in the State of South Carolina, PE15777
A Certified Environmental Manager in the State of Nevada
A member of the Society for Mining, Metallurgy and Exploration Inc.
A member of the Mining and Metallurgical Society of America
A member of the National Society of Professional Engineers
A member of the Professional Engineers of Colorado
A member of the Canadian Institute of Mining

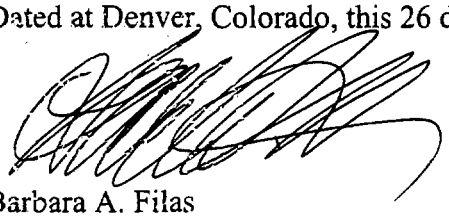
As a mining engineer, I have more than 20 years of experience in surface and underground mine operations, engineering, and regulatory support for coal, metals, and industrial mineral mining projects. These efforts include mine development plans, mine and processing operations, waste containment facility designs, reclamation plans and surety estimates, project permitting, comprehensive environmental site and compliance audits, multidisciplinary evaluations, and storm water and sedimentation control designs. In addition, I have participated in numerous laws and rule making processes in the United States and internationally and have developed many designs and permitting documents which have successfully passed the scrutiny of the regulatory community and the international lending institutions. I am responsible for Knight Piésold's global activities in the mining and environmental business sectors. Prior to joining the firm, I have held responsible engineering and environmental positions with Atlas Minerals, Summit Minerals, U.S. Steel Corporation, and Monterey Coal Company.

The source of the geological and financial information for this report was provided by Metallica Resources Inc. The information provided by Metallica is, to the best of my knowledge and experience, reasonable for a mining project at this stage of development. I am not aware of any material fact or material change with respect to the subject matter of this technical report that is

not reflected in this report. The calculations used in the financial reports were verified by Knight Piésold accounting personnel.

By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. Under my direction, a Qualified Person from Knight Piésold have visited the El Morro project site, and I have reviewed the data contained in the report entitled "Technical Report" submitted by Metallica Resources Inc., El Morro Copper-Gold Project, Chile, Region III, Technical Report, Fred H. Lightner, November 14, 2001. I have read, and this report has been prepared in accordance with, the National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101FI.

Dated at Denver, Colorado, this 26 day of December, 2001.



Barbara A. Filas
State of Colorado P.E. 25261

Tables

Tables

Abreviations Used in Tables
(All Currency is US $ Unless Specified Otherwise)

mm	=	millimeters
cu m	=	cubic meters
t	=	tonnes
l	=	liters
m	=	meters
hp	=	horsepower
tpd	=	tonnes per day
000's t	=	thousands of tonnes
%	=	percent
g/t	=	grams per tonne
$000's	=	thousands of dollars
$/t ore	=	dollars per tonne of ore
kt	=	thousands of tonnes
koz	=	thousands of ounces
g	=	grams
kg	=	kilograms
$/t conc	=	dollars per tonne of concentrate
$M	=	millions of dollars
Mt	=	millions of tonnes
Mlbs	=	million of pounds
c/lb Cu	=	cents per pound of copper
$/lb	=	dollars per pound
$/oz	=	dollars per ounce
$/lb Cu	=	dollars per pound of copper
$/t	=	dollars per tonne

Table 1
Major Mining Equipment

Mine Equipment	Size or Model	Number of Units
Blast Hole Drills	560 mm	2
Hydraulic Shovels	35 cu m	3
Haul Trucks	330 t	12
Water Trucks	75,000 l	2
Track Dozer	Cat D10	2
Track Dozer	Cat D9	2
Tire Dozer	Cat 844	1
Motor Grader	Cat 24H	2
Motor Grader	Cat 16H	1

Support Equipment	Number of Units
Slurry Truck	1
Crane	1
Fuel/Lube Truck	2
Flatbed Truck	1
Tractor Truck	1
Low-Boy Trailer	1
Tire Truck	1
Tire Machine	1
Backhoe	1
Loader	1
Forklift	1
Light Plants	10
Pick-up Trucks	15

Table 2
Major Process Equipment

Process Equipment	Type or Model	Size	Number of Units
Primary Crusher	1524 mm x 2794 mm Gyratory	1000 hp	1
SAG Mill	10.98 m diameter x 6.10 m long	15,000 hp	1
Primary Ball Mills	8.53 m diameter x 9.76 m long	15,000 hp	2
Rougher Flotation Cells	Column Flotation Cells	1000 cu m	TBD
Scavenger Flotation Cells	Mechanical Flotation Cells	500 cu m	TBD
Tailings Thickener	High Capacity	75000 tpd	1
Middlings Thickener	High Capacity	10000 tpd	1
Regrind Ball Mills	3.81 m diameter x 4.57 m long	1200 hp	2
Cleaner Flotation Cells	Column Flotation Cells	150 cu m	TBD
Recleaner Flotation Cells	Column Flotation Cells	100 cu m	TBD
Concentrate Thickener	High Capacity	1500 tpd	1
Concentrate Filter	Belt or High Pressure	1500 tpd	1
Concentrate Dryer	Rotary	1500 tpd	1

Table 3
Overall Metallurgical Balance

Years 1 to 5

Product	Weight Distribution			Assays			Distribution		
	Annual	Daily	Percent	Copper	Gold	Arsenic	Copper	Gold	Arsenic
	(000's t)	(t)	(%)	(%)	(g/t)	(%)	(%)	(%)	(%)
Plant Feed	25,000	75,000	100.00	0.60	0.55	0.011	100.0	100.0	100.0
Final Concentrate	385.7	1,157.1	1.54	35.00	26.74	0.650	90.0	75.0	90.0
Final Tailings	24,614.3	73,842.9	98.46	0.06	0.14	0.001	10.0	25.0	10.0

Years 6 to 15

Product	Weight Distribution			Assays			Distribution		
	Annual	Daily	Percent	Copper	Gold	Arsenic	Copper	Gold	Arsenic
	(000's t)	(t)	(%)	(%)	(g/t)	(%)	(%)	(%)	(%)
Plant Feed	25,000	75,000	100.00	0.60	0.55	0.011	100.0	100.0	100.0
Final Concentrate	450.0	1,350.0	1.80	30.00	22.92	0.556	90.0	75.0	90.0
Final Tailings	24,550.0	73,650.0	98.20	0.06	0.14	0.001	10.0	25.0	10.0

Table 4
Mine Capital Costs
(All Currency is US $ Unless Specified Otherwise)

					Replacement and Major Rebuilds							
	Life	Number	Unit Cost	Initial Capital	Year 4	Year 6	Year 7	Year 9	Year 10	Year 11	Year 13	Total
	(years)		($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)
Major Mine Equipment												
Blast Hole Drills	10	2	2,800	5,600						2,800		**8,400**
Hydraulic Shovels	15	3	4,750	14,250				7,125				**21,375**
Haul Trucks	8	12	3,500	42,000				21,000				**63,000**
Water Trucks	10	2	750	1,500						1,500		**3,000**
Track Dozer	5	2	750	1,500		1,500				1,500		**4,500**
Track Dozer	5	2	600	1,200		1,200				600		**3,000**
Tire Dozer	5	1	900	900		900				900		**2,700**
Motor Grader	5	2	1,000	2,000		2,000				1,000		**5,000**
Motor Grader	5	1	500	500		500				500		**1,500**
Support Equipment												
Slurry Truck	5	1	150	150		150				150		**450**
Crane	8	1	750	750				750				**1,500**
Fuel/Lube Truck	5	2	125	250		250				250		**750**
Flatbed Truck	5	1	50	50		50				50		**150**
Tractor Truck	8	1	100	100				100				**200**
Low-Boy Trailer	8	1	75	75				75				**150**
Tire Truck	5	1	125	125		125				125		**375**
Tire Machine	5	1	90	90		90				90		**270**
Backhoe	5	1	90	90		90				90		**270**
Loader	5	1	90	90		90				90		**270**
Forklift	5	1	60	60		60				60		**180**
Light Plants	5	10	15	150		150				150		**450**
Pick-up Trucks	3	15	25	375	375	375	375		375	375	375	**2,625**
Spare Parts		1 lot	2,000	2,000								**2,000**
Truck Shop			2,195	2,195								**2,195**
Total				**76,000**	**375**	**7,530**	**375**	**29,050**	**375**	**10,230**	**375**	**124,310**

Table 5
Infrastructure and Development Capital Costs
(All Currency is US $ Unless Specified Otherwise)

Item	Capital Cost ($000's)	Basis
Exploration / Feasibility	10,000	$3 million per year for 3 years and $1 million for 1 year
Access Roads	30,000	100 kilometers @ $300,000 per kilometer
Power Supply	20,000	100 kilometers @ $200,000 per kilometer
Water Supply	6,000	allowance of $6 million
Camp Facilities	8,000	800 man camp @ $10,000 per man
Tailing Storage Facility	25,000	assume starter dam w/ two year capacity, drainage diversion and siting study

Table 6
Capital Cost Summary
(All Currency is US $ Unless Specified Otherwise)

Initial Mine Development

	Year -4 ($000's)	Year -3 ($000's)	Year -2 ($000's)	Year -1 ($000's)	Total ($000's)
Explore/Feasibility	3,000	3,000	3,000	1,000	**10,000**
Mine				76,000	**76,000**
Process			375,000	175,000	**550,000**
Access Roads			30,000		**30,000**
Power Supply			6,666	13,334	**20,000**
Water Supply			6,000		**6,000**
Camp Facilities			5,000	3,000	**8,000**
Tailing Storage Facility			25,000		**25,000**
Total Initial Capital	**3,000**	**3,000**	**450,666**	**268,334**	**725,000**

Sustaining Capital

	Year 1 ($000's)	Year 2 ($000's)	Year 3 ($000's)	Year 4 ($000's)	Year 5 ($000's)	Year 6 ($000's)	Year 7 ($000's)	Year 8 ($000's)	Year 9 ($000's)	Year 10 ($000's)	Year 11 ($000's)	Year 12 ($000's)	Year 13 ($000's)	Year 14 ($000's)	Year 15 ($000's)	Total ($000's)
Mine				375		7,530	375		29,050	375	10,230		375			**48,310**
Process	500	500	500	500	3,000	500	500	500	500	3,000	500	500	500	500	500	**12,500**
G & A	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**15,000**
Total Sustaining Capital	**1,500**	**1,500**	**1,500**	**1,875**	**4,000**	**9,030**	**1,875**	**1,500**	**30,550**	**4,375**	**11,730**	**1,500**	**1,875**	**1,500**	**1,500**	**75,810**

Table 7
Mine Operating Costs
(All Currency is US $ Unless Specified Otherwise)

	Dollars		
	per tonne material	per tonne ore	per year
Drilling	0.050	0.113	2,812,500
Blasting	0.090	0.203	5,062,500
Loading	0.080	0.180	4,500,000
Hauling	0.155	0.349	8,718,750
Roads & Dumps	0.050	0.113	2,812,500
General Mine	0.040	0.090	2,250,000
Maintenance	0.035	0.079	1,968,750
Supervision & Technical Services	0.050	0.113	2,812,500
Total	**0.550**	**1.238**	**30,937,500**

Table 8
Process Operating Costs
(All Currency is US $ Unless Specified Otherwise)

	per tonne ore	per year
Crushing	0.050	1,250,000
Grinding	1.000	25,000,000
Flotation	0.800	20,000,000
Concentrate Handling	0.080	2,000,000
Tailings Disposal	0.250	6,250,000
Mill Services	0.200	5,000,000
Mill Administration	0.150	3,750,000
Total	**2.530**	**63,250,000**

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Table 9
Operating Cost Summary by Year
(All Currency is US $ Unless Specified Otherwise)

Per Tonne of Ore		Year 1 ($/t ore)	Year 2 ($/t ore)	Year 3 ($/t ore)	Year 4 ($/t ore)	Year 5 ($/t ore)	Year 6 ($/t ore)	Year 7 ($/t ore)	Year 8 ($/t ore)	Year 9 ($/t ore)	Year 10 ($/t ore)	Year 11 ($/t ore)	Year 12 ($/t ore)	Year 13 ($/t ore)	Year 14 ($/t ore)	Year 15 ($/t ore)	Total ($/t ore)
Mine		1.238	1.238	1.238	1.238	1.238	1.361	1.361	1.361	1.361	1.361	1.497	1.497	1.497	1.497	1.497	**1.361**
Process		2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	2.530	**2.530**
G & A		0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	**0.400**
	Total	**4.218**	**4.218**	**4.218**	**4.218**	**4.218**	**4.341**	**4.341**	**4.341**	**4.341**	**4.341**	**4.477**	**4.477**	**4.477**	**4.477**	**4.477**	**4.291**
$ Per Year		($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)	($000's)
Mine		30,938	30,938	30,938	30,938	30,938	34,031	34,031	34,031	34,031	34,031	37,434	37,434	37,434	37,434	37,434	**512,016**
Process		63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	63,250	**948,750**
G & A		11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	**168,750**
	Total	**105,438**	**105,438**	**105,438**	**105,438**	**105,438**	**108,531**	**108,531**	**108,531**	**108,531**	**108,531**	**111,934**	**111,934**	**111,934**	**111,934**	**111,934**	**1,629,516**

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Table 10
Annual Depreciation Summary
(All Currency is US $ Unless Specified Otherwise)

	Initial ($000's)	Year 1 ($000's)	Year 2 ($000's)	Year 3 ($000's)	Year 4 ($000's)	Year 5 ($000's)	Year 6 ($000's)	Year 7 ($000's)	Year 8 ($000's)	Year 9 ($000's)	Year 10 ($000's)	Year 11 ($000's)	Year 12 ($000's)	Year 13 ($000's)	Year 14 ($000's)	Year 15 ($000's)	Total ($000's)
3 Year Depreciation																	
Mine Equipment	71,805																
Depreciation		23,935	23,935	23,935													**71,805**
Add Year 4	375																
Depreciation					125	125	125										**375**
Add Year 6	7,530																
Depreciation							2,510	2,510	2,510								**7,530**
Add Year 7	375																
Depreciation								125	125	125							**375**
Add Year 9	29,050																
Depreciation										9,683	9,683	9,683					**29,050**
Add Year 10	375																
Depreciation											125	125	125				**375**
Add Year 11	10,230																
Depreciation												3,410	3,410	3,410			**10,230**
Add Year 13	375																
Depreciation														125	125	125	**375**
Process Equipment	220,000	**															
Depreciation		44,000	44,000	44,000	44,000	44,000											**220,000**
6 Year Depreciation																	
Explore/Feasibility	15,000	****															
Depreciation		2,500	2,500	2,500	2,500	2,500	2,500										**15,000**
10 Year Depreciation																	
Initial Basis	374,885																
Depreciation		37,489	37,489	37,489	37,489	37,489	37,489	37,489	37,489	37,489	37,489						**374,885**
Yearly Add			150	300	450	600	750	900	1,050	1,200	1,350	1,500	1,500	1,500	1,500	1,500	**14,250**
Total Depreciation		**107,924**	**108,074**	**108,224**	**84,564**	**84,714**	**43,374**	**41,024**	**41,174**	**48,497**	**48,647**	**14,718**	**5,035**	**5,035**	**1,625**	**1,625**	**744,250**

** assumes 40 % of mill capital is equipment
**** includes $5 million of costs to date

Table 11
Annual Production Summary
(Identical for All Economic Cases and Sensitivities)

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Mine Production																	
Ore Mined	(kt)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	**375,000**
Waste Mined	(kt)	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	31,250	**468,750**
Total Mined	(kt)	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	56,250	**843,750**
Waste:Ore		1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	**1.25**
Mill Grades																	
Copper	(%)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	**0.60**
Gold	(g/t)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	**0.55**
Contained Metal																	
Copper	(kt)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	**2,250**
Gold	(koz)	442	442	442	442	442	442	442	442	442	442	442	442	442	442	442	**6,631**
Mill Recoveries																	
Copper	(%)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**90**
Gold	(%)	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	**75**
Metal Production																	
Copper	(kt)	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	**2,025**
Gold	(koz)	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
Arsenic	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**

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Table 12
Base Case - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $1.00 per pound of copper
Price of Gold = $300 per ounce of gold

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	747	747	747	747	747	637	637	637	637	637	637	637	637	637	637	**10,104**
Au Payments	($/t conc)	250	250	250	250	250	214	214	214	214	214	214	214	214	214	214	**3,395**
Total Payments	($/t conc)	997	997	997	997	997	852	852	852	852	852	852	852	852	852	852	**13,499**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	794	794	794	794	794	662	662	662	662	662	662	662	662	662	662	**10,591**
Annual NSR	($M)	**306**	**306**	**306**	**306**	**306**	**298**	**298**	**298**	**298**	**298**	**298**	**298**	**298**	**298**	**298**	**4,511**

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Table 13
Base Case - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**
NSR Royalty	($M)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Operating Results																					
Mining Cost	($M)					31	31	31	31	31	34	34	34	34	34	37	37	37	37	37	**512**
Milling Cost	($M)					63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	**949**
G & A Cost	($M)					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**169**
Total Costs	($M)					105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Operating Income	($M)					198	198	198	198	198	186	186	186	186	186	183	183	183	183	183	**2,836**
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Taxable Income	($M)					90	90	90	113	113	143	145	145	138	138	168	178	178	181	181	**2,092**
Taxes	($M)					14	13	13	17	17	21	22	22	21	21	25	27	27	27	27	**314**
Income After Tax	($M)					77	76	76	96	96	122	124	123	117	117	143	151	151	154	154	**1,778**
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Cash Flow	($M)					184	184	184	181	181	165	165	165	166	166	158	156	156	156	156	**2,522**
Capital	($M)	3	3	451	268	2	2	2	2	4	9	2	2	31	4	12	2	2	2	2	**801**
Net Cash Flow	($M)	**(3)**	**(3)**	**(451)**	**(268)**	**183**	**183**	**183**	**179**	**177**	**156**	**163**	**163**	**135**	**161**	**146**	**155**	**154**	**154**	**154**	**1,722**
Cum. Cash Flow	($M)	**(3)**	**(6)**	**(457)**	**(725)**	**(542)**	**(359)**	**(176)**	**3**	**180**	**336**	**498**	**661**	**797**	**958**	**1,104**	**1,259**	**1,413**	**1,567**	**1,722**	

Table 14
Base Case - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**
IRR	=	**19.6%**	
NPV @ 0 %	=	**$1,722**	**million**
NPV @ 5 %	=	**$798**	**million**
NPV @ 10 %	=	**$345**	**million**
Payback	=	**4.0**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	($M)	105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Total Smelting Costs	($M)	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	($M)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Total Costs	($M)	187	187	187	187	187	197	197	197	197	197	200	200	200	200	200	**2,918**
Production																	
Total Ore Processed	(Mt)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	(Mlbs)	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	(koz)	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	($M)	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	**1,447**
Costs Per Tonne Ore																	
Site Cost	($/t ore)	4.22	4.22	4.22	4.22	4.22	4.34	4.34	4.34	4.34	4.34	4.48	4.48	4.48	4.48	4.48	**4.35**
Smelting Cost	($/t ore)	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	($/t ore)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	**0.12**
Total Cost	($/t ore)	7.46	7.46	7.46	7.46	7.46	7.87	7.87	7.87	7.87	7.87	8.01	8.01	8.01	8.01	8.01	**7.78**
Gold Credit	($/t ore)	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	**3.86**
Net Cost	($/t ore)	3.60	3.60	3.60	3.60	3.60	4.01	4.01	4.01	4.01	4.01	4.15	4.15	4.15	4.15	4.15	**3.92**
Cost Per Pound Cu																	
Site Cost	(c/lb Cu)	0.354	0.354	0.354	0.354	0.354	0.365	0.365	0.365	0.365	0.365	0.376	0.376	0.376	0.376	0.376	**0.365**
Smelting Cost	(c/lb Cu)	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	(c/lb Cu)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	**0.010**
Total Cost	(c/lb Cu)	0.627	0.627	0.627	0.627	0.627	0.662	0.662	0.662	0.662	0.662	0.673	0.673	0.673	0.673	0.673	**0.654**
Gold Credit	(c/lb Cu)	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	**0.324**
Net Cost	(c/lb Cu)	0.303	0.303	0.303	0.303	0.303	0.337	0.337	0.337	0.337	0.337	0.349	0.349	0.349	0.349	0.349	**0.330**

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Table 15
Summary of Economic Sensitivities
(All Currency is US $ Unless Specified Otherwise)

	Metal Prices		Costs			Net Present Values			Cash Production Costs			
Case	Copper	Gold	Capital	Operating	IRR	@ 0 %	@ 5 %	@ 10 %	Total	Au Credit	Net Costs	Payback
	($/lb)	($/oz)	($M)	($/t ore)	(%)	($M)	($M)	($M)	($/lb Cu)	($/lb Cu)	($/lb Cu)	(years)
Base Case	1.00	300	801	4.35	19.6%	1,722	798	345	0.654	0.324	0.330	4.0
Low Prices	0.75	275	801	4.35	9.9%	714	224	(4)	0.651	0.297	0.354	6.7
High Prices	1.25	325	801	4.35	27.6%	2,729	1,372	694	0.656	0.351	0.305	2.9
Capital + 20 %	1.00	300	961	4.35	16.0%	1,584	681	245	0.654	0.324	0.330	4.7
Capital - 20 %	1.00	300	641	4.35	24.6%	1,859	915	445	0.654	0.324	0.330	3.2
Operating +20 %	1.00	300	801	5.21	17.2%	1,444	641	250	0.727	0.324	0.403	4.4
Operating - 20 %	1.00	300	801	3.48	21.9%	1,999	955	440	0.581	0.324	0.257	3.6

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Table 16
Low Prices - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $0.75 per pound of copper
Price of Gold = $275 per ounce of gold

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	560	560	560	560	560	478	478	478	478	478	478	478	478	478	478	**7,578**
Au Payments	($/t conc)	229	229	229	229	229	197	197	197	197	197	197	197	197	197	197	**3,112**
Total Payments	($/t conc)	789	789	789	789	789	674	674	674	674	674	674	674	674	674	674	**10,690**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	587	587	587	587	587	485	485	485	485	485	485	485	485	485	485	**7,782**
Annual NSR	($M)	226	226	226	226	226	218	218	218	218	218	218	218	218	218	218	**3,313**

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Table 17
Low Prices - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$0.75**	**per pound of copper**
Price of Gold	=	**$275**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					226	226	226	226	226	218	218	218	218	218	218	218	218	218	218	**3,313**
NSR Royalty	($M)					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**33**
Operating Results																					
Mining Cost	($M)					31	31	31	31	31	34	34	34	34	34	37	37	37	37	37	**512**
Milling Cost	($M)					63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	**949**
G & A Cost	($M)					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**169**
Total Costs	($M)					105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Operating Income	($M)					119	119	119	119	119	107	107	107	107	107	104	104	104	104	104	**1,651**
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Taxable Income	($M)					11	11	10	34	34	64	66	66	59	59	89	99	99	102	102	**907**
Taxes	($M)					2	2	2	5	5	10	10	10	9	9	13	15	15	15	15	**136**
Income After Tax	($M)					9	9	9	29	29	54	56	56	50	50	76	84	84	87	87	**771**
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Cash Flow	($M)					117	117	117	114	114	98	97	97	99	99	91	89	89	89	89	**1,515**
Capital	($M)	3	3	451	268	2	2	2	2	4	9	2	2	31	4	12	2	2	2	2	**801**
Net Cash Flow	($M)	**(3)**	**(3)**	**(451)**	**(268)**	**116**	**116**	**116**	**112**	**110**	**89**	**96**	**96**	**68**	**94**	**79**	**88**	**87**	**87**	**87**	**714**
Cum. Cash Flow	($M)	**(3)**	**(6)**	**(457)**	**(725)**	**(609)**	**(494)**	**(378)**	**(266)**	**(157)**	**(68)**	**28**	**124**	**192**	**286**	**365**	**452**	**540**	**627**	**714**	

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Table 18
Low Prices - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$0.75**	**per pound of copper**
Price of Gold	=	**$275**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**
IRR	=	**9.9%**	
NPV @ 0 %	=	**$714**	**million**
NPV @ 5 %	=	**$224**	**million**
NPV @ 10 %	=	**($4)**	**million**
Payback	=	**6.7**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	($M)	105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Total Smelting Costs	($M)	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	($M)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**33**
Total Costs	($M)	186	186	186	186	186	196	196	196	196	196	199	199	199	199	199	**2,906**
Production																	
Total Ore Processed	(Mt)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	(Mlbs)	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	(koz)	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	($M)	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	**1,327**
Costs Per Tonne Ore																	
Site Cost	($/t ore)	4.22	4.22	4.22	4.22	4.22	4.34	4.34	4.34	4.34	4.34	4.48	4.48	4.48	4.48	4.48	**4.35**
Smelting Cost	($/t ore)	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	($/t ore)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	**0.09**
Total Cost	($/t ore)	7.43	7.43	7.43	7.43	7.43	7.84	7.84	7.84	7.84	7.84	7.98	7.98	7.98	7.98	7.98	**7.75**
Gold Credit	($/t ore)	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	**3.54**
Net Cost	($/t ore)	3.89	3.89	3.89	3.89	3.89	4.30	4.30	4.30	4.30	4.30	4.44	4.44	4.44	4.44	4.44	**4.21**
Cost Per Pound Cu																	
Site Cost	(c/lb Cu)	0.354	0.354	0.354	0.354	0.354	0.365	0.365	0.365	0.365	0.365	0.376	0.376	0.376	0.376	0.376	**0.365**
Smelting Cost	(c/lb Cu)	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	(c/lb Cu)	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	**0.007**
Total Cost	(c/lb Cu)	0.624	0.624	0.624	0.624	0.624	0.659	0.659	0.659	0.659	0.659	0.670	0.670	0.670	0.670	0.670	**0.651**
Gold Credit	(c/lb Cu)	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297	**0.297**
Net Cost	(c/lb Cu)	0.327	0.327	0.327	0.327	0.327	0.362	0.362	0.362	0.362	0.362	0.373	0.373	0.373	0.373	0.373	**0.354**

Table 19
High Prices - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $1.25 *per pound of copper*
Price of Gold = $325 *per ounce of gold*

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	0	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(%)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(g/t)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	933	933	933	933	933	796	796	796	796	796	796	796	796	796	796	**12,630**
Au Payments	($/t conc)	271	271	271	271	271	232	232	232	232	232	232	232	232	232	232	**3,678**
Total Payments	($/t conc)	1,204	1,204	1,204	1,204	1,204	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	**16,308**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	1,002	1,002	1,002	1,002	1,002	839	839	839	839	839	839	839	839	839	839	**13,400**
Annual NSR	($M)	386	386	386	386	386	378	378	378	378	378	378	378	378	378	378	**5,708**

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Table 20
High Prices - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.25**	**per pound of copper**
Price of Gold	=	**$325**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					386	386	386	386	386	378	378	378	378	378	378	378	378	378	378	**5,708**
NSR Royalty	($M)					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
Operating Results																					
Mining Cost	($M)					31	31	31	31	31	34	34	34	34	34	37	37	37	37	37	**512**
Milling Cost	($M)					63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	**949**
G & A Cost	($M)					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**169**
Total Costs	($M)					105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Operating Income	($M)					277	277	277	277	277	265	265	265	265	265	262	262	262	262	262	**4,021**
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Taxable Income	($M)					169	169	169	193	192	222	224	224	217	217	247	257	257	260	260	**3,277**
Taxes	($M)					25	25	25	29	29	33	34	34	33	32	37	39	39	39	39	**492**
Income After Tax	($M)					144	144	144	164	164	189	191	190	184	184	210	218	218	221	221	**2,786**
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Cash Flow	($M)					252	252	252	248	248	232	232	232	233	233	225	223	223	223	223	**3,530**
Capital	($M)	3	3	451	268	2	2	2	2	4	9	2	2	31	4	12	2	2	2	2	**801**
Net Cash Flow	($M)	**(3)**	**(3)**	**(451)**	**(268)**	**250**	**250**	**250**	**246**	**244**	**223**	**230**	**230**	**202**	**228**	**213**	**222**	**221**	**221**	**221**	**2,729**
Cum. Cash Flow	($M)	**(3)**	**(6)**	**(457)**	**(725)**	**(475)**	**(224)**	**26**	**272**	**517**	**740**	**969**	**1,199**	**1,402**	**1,630**	**1,843**	**2,065**	**2,286**	**2,508**	**2,729**	

Table 21
High Prices - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.25**	**per pound of copper**
Price of Gold	=	**$325**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**
IRR	=	**27.6%**	
NPV @ 0 %	=	**$2,729**	**million**
NPV @ 5 %	=	**$1,372**	**million**
NPV @ 10 %	=	**$694**	**million**
Payback	=	**2.9**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	($M)	105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Total Smelting Costs	($M)	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	($M)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
Total Costs	($M)	187	187	187	187	187	198	198	198	198	198	201	201	201	201	201	**2,930**
Production																	
Total Ore Processed	(Mt)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	(Mlbs)	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	(koz)	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	($M)	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	**1,568**
Costs Per Tonne Ore																	
Site Cost	($/t ore)	4.22	4.22	4.22	4.22	4.22	4.34	4.34	4.34	4.34	4.34	4.48	4.48	4.48	4.48	4.48	**4.35**
Smelting Cost	($/t ore)	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	($/t ore)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	**0.15**
Total Cost	($/t ore)	7.49	7.49	7.49	7.49	7.49	7.91	7.91	7.91	7.91	7.91	8.04	8.04	8.04	8.04	8.04	**7.81**
Gold Credit	($/t ore)	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	**4.18**
Net Cost	($/t ore)	3.31	3.31	3.31	3.31	3.31	3.72	3.72	3.72	3.72	3.72	3.86	3.86	3.86	3.86	3.86	**3.63**
Cost Per Pound Cu																	
Site Cost	(c/lb Cu)	0.354	0.354	0.354	0.354	0.354	0.365	0.365	0.365	0.365	0.365	0.376	0.376	0.376	0.376	0.376	**0.365**
Smelting Cost	(c/lb Cu)	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	(c/lb Cu)	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	**0.013**
Total Cost	(c/lb Cu)	0.630	0.630	0.630	0.630	0.630	0.664	0.664	0.664	0.664	0.664	0.676	0.676	0.676	0.676	0.676	**0.656**
Gold Credit	(c/lb Cu)	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	**0.351**
Net Cost	(c/lb Cu)	0.278	0.278	0.278	0.278	0.278	0.313	0.313	0.313	0.313	0.313	0.324	0.324	0.324	0.324	0.324	**0.305**

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Table 22
Capital Costs + 20 % - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = **$1.00** **per pound of copper**
Price of Gold = **$300** **per ounce of gold**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	747	747	747	747	747	637	637	637	637	637	637	637	637	637	637	**10,104**
Au Payments	($/t conc)	250	250	250	250	250	214	214	214	214	214	214	214	214	214	214	**3,395**
Total Payments	($/t conc)	997	997	997	997	997	852	852	852	852	852	852	852	852	852	852	**13,499**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	794	794	794	794	794	662	662	662	662	662	662	662	662	662	662	**10,591**
Annual NSR	($M)	306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**

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Table 23
Capital Costs + 20 % - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$961**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	4,511
NSR Royalty	($M)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	45
Operating Results																					
Mining Cost	($M)					31	31	31	31	31	34	34	34	34	34	37	37	37	37	37	512
Milling Cost	($M)					63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	949
G & A Cost	($M)					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	169
Total Costs	($M)					105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	1,630
Operating Income	($M)					198	198	198	198	198	186	186	186	186	186	183	183	183	183	183	2,836
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					130	130	130	101	102	52	49	49	58	58	18	6	6	2	2	893
Taxable Income	($M)					68	68	68	96	96	134	137	137	128	128	165	177	177	181	181	1,943
Taxes	($M)					10	10	10	14	14	20	21	21	19	19	25	27	27	27	27	291
Income After Tax	($M)					58	58	58	82	82	114	117	116	109	109	140	150	150	154	154	1,652
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					130	130	130	101	102	52	49	49	58	58	18	6	6	2	2	893
Cash Flow	($M)					188	188	188	183	183	166	166	166	167	167	158	156	156	156	156	2,545
Capital	($M)	4	4	541	322	2	2	2	2	5	11	2	2	37	5	14	2	2	2	2	961
Net Cash Flow	($M)	(4)	(4)	(541)	(322)	186	186	186	181	179	155	164	164	130	162	144	155	154	154	154	1,584
Cum. Cash Flow	($M)	(4)	(7)	(548)	(870)	(684)	(498)	(312)	(131)	48	203	366	530	661	823	967	1,122	1,276	1,430	1,584	

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Table 24
Capital Costs + 20 % - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$961**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**
IRR	=	**16.0%**	
NPV @ 0 %	=	**$1,584**	**million**
NPV @ 5 %	=	**$681**	**million**
NPV @ 10 %	=	**$245**	**million**
Payback	=	**4.7**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	$m	105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Total Smelting Costs	$m	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	$m	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Total Costs	$m	187	187	187	187	187	197	197	197	197	197	200	200	200	200	200	**2,918**
Production																	
Total Ore Processed	Mt	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	Mlbs	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	koz	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	$m	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	**1,447**
Costs Per Tonne Ore																	
Site Cost	$/t ore	4.22	4.22	4.22	4.22	4.22	4.34	4.34	4.34	4.34	4.34	4.48	4.48	4.48	4.48	4.48	**4.35**
Smelting Cost	$/t ore	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	$/t ore	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	**0.12**
Total Cost	$/t ore	7.46	7.46	7.46	7.46	7.46	7.87	7.87	7.87	7.87	7.87	8.01	8.01	8.01	8.01	8.01	**7.78**
Gold Credit	$/t ore	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	**3.86**
Net Cost	$/t ore	3.60	3.60	3.60	3.60	3.60	4.01	4.01	4.01	4.01	4.01	4.15	4.15	4.15	4.15	4.15	**3.92**
Cost Per Pound Cu																	
Site Cost	c/lb Cu	0.354	0.354	0.354	0.354	0.354	0.365	0.365	0.365	0.365	0.365	0.376	0.376	0.376	0.376	0.376	**0.365**
Smelting Cost	c/lb Cu	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	c/lb Cu	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	**0.010**
Total Cost	c/lb Cu	0.627	0.627	0.627	0.627	0.627	0.662	0.662	0.662	0.662	0.662	0.673	0.673	0.673	0.673	0.673	**0.654**
Gold Credit	c/lb Cu	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	**0.324**
Net Cost	c/lb Cu	0.303	0.303	0.303	0.303	0.303	0.337	0.337	0.337	0.337	0.337	0.349	0.349	0.349	0.349	0.349	**0.330**

Table 25
Capital Costs - 20 % - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $1.00 per pound of copper
Price of Gold = $300 per ounce of gold

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	747	747	747	747	747	637	637	637	637	637	637	637	637	637	637	**10,104**
Au Payments	($/t conc)	250	250	250	250	250	214	214	214	214	214	214	214	214	214	214	**3,395**
Total Payments	($/t conc)	997	997	997	997	997	852	852	852	852	852	852	852	852	852	852	**13,499**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	794	794	794	794	794	662	662	662	662	662	662	662	662	662	662	**10,591**
Annual NSR	($M)	306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**

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Table 26
Capital Costs -20 % - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$641**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**
NSR Royalty	($M)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Operating Results																					
Mining Cost	($M)					31	31	31	31	31	34	34	34	34	34	37	37	37	37	37	**512**
Milling Cost	($M)					63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	**949**
G & A Cost	($M)					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**169**
Total Costs	($M)					105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Operating Income	($M)					198	198	198	198	198	186	186	186	186	186	183	183	183	183	183	**2,836**
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					86	86	87	68	68	35	33	33	39	39	12	4	4	1	1	**595**
Taxable Income	($M)					112	111	111	130	130	152	154	153	148	147	171	179	179	182	182	**2,241**
Taxes	($M)					17	17	17	20	20	23	23	23	22	22	26	27	27	27	27	**336**
Income After Tax	($M)					95	95	95	111	111	129	130	130	125	125	145	152	152	154	154	**1,905**
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					86	86	87	68	68	35	33	33	39	39	12	4	4	1	1	**595**
Cash Flow	($M)					181	181	181	178	178	164	163	163	164	164	157	156	156	156	156	**2,500**
Capital	($M)	2	2	361	215	1	1	1	2	3	7	2	1	24	4	9	1	2	1	1	**641**
Net Cash Flow	($M)	(2)	(2)	(361)	(215)	180	180	180	177	175	156	162	162	140	161	148	155	155	154	154	**1,859**
Cum. Cash Flow	($M)	(2)	(5)	(365)	(580)	(400)	(220)	(40)	137	312	468	630	792	932	1,093	1,241	1,396	1,550	1,705	1,859	

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Table 27
Capital Costs - 20 % - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$641**	**million**
Operating Costs	=	**$4.35**	**per tonne of ore**
IRR	=	**24.6%**	
NPV @ 0 %	=	**$1,859**	**million**
NPV @ 5 %	=	**$915**	**million**
NPV @ 10 %	=	**$445**	**million**
Payback	=	**3.2**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	$m	105	105	105	105	105	109	109	109	109	109	112	112	112	112	112	**1,630**
Total Smelting Costs	$m	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	$m	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Total Costs	$m	187	187	187	187	187	197	197	197	197	197	200	200	200	200	200	**2,918**
Production																	
Total Ore Processed	Mt	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	Mlbs	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	koz	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	$m	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	**1,447**
Costs Per Tonne Ore																	
Site Cost	$/t ore	4.22	4.22	4.22	4.22	4.22	4.34	4.34	4.34	4.34	4.34	4.48	4.48	4.48	4.48	4.48	**4.35**
Smelting Cost	$/t ore	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	$/t ore	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	**0.12**
Total Cost	$/t ore	7.46	7.46	7.46	7.46	7.46	7.87	7.87	7.87	7.87	7.87	8.01	8.01	8.01	8.01	8.01	**7.78**
Gold Credit	$/t ore	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	**3.86**
Net Cost	$/t ore	3.60	3.60	3.60	3.60	3.60	4.01	4.01	4.01	4.01	4.01	4.15	4.15	4.15	4.15	4.15	**3.92**
Cost Per Pound Cu																	
Site Cost	c/lb Cu	0.354	0.354	0.354	0.354	0.354	0.365	0.365	0.365	0.365	0.365	0.376	0.376	0.376	0.376	0.376	**0.365**
Smelting Cost	c/lb Cu	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	c/lb Cu	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	**0.010**
Total Cost	c/lb Cu	0.627	0.627	0.627	0.627	0.627	0.662	0.662	0.662	0.662	0.662	0.673	0.673	0.673	0.673	0.673	**0.654**
Gold Credit	c/lb Cu	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	**0.324**
Net Cost	c/lb Cu	0.303	0.303	0.303	0.303	0.303	0.337	0.337	0.337	0.337	0.337	0.349	0.349	0.349	0.349	0.349	**0.330**

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Table 28
Operating Costs + 20 % - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $1.00 per pound of copper
Price of Gold = $300 per ounce of gold

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	747	747	747	747	747	637	637	637	637	637	637	637	637	637	637	**10,104**
Au Payments	($/t conc)	250	250	250	250	250	214	214	214	214	214	214	214	214	214	214	**3,395**
Total Payments	($/t conc)	997	997	997	997	997	852	852	852	852	852	852	852	852	852	852	**13,499**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	794	794	794	794	794	662	662	662	662	662	662	662	662	662	662	**10,591**
Annual NSR	($M)	306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**

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Table 29
Operating Costs + 20 % - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$5.21**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**
NSR Royalty	($M)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Operating Results																					
Mining Cost	($M)					37	37	37	37	37	41	41	41	41	41	45	45	45	45	45	**614**
Milling Cost	($M)					76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	**1,139**
G & A Cost	($M)					14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	**203**
Total Costs	($M)					127	127	127	127	127	130	130	130	130	130	134	134	134	134	134	**1,955**
Operating Income	($M)					177	177	177	177	177	165	165	165	165	165	161	161	161	161	161	**2,510**
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Taxable Income	($M)					69	69	69	92	92	121	124	123	116	116	146	156	156	159	159	**1,766**
Taxes	($M)					10	10	10	14	14	18	19	19	17	17	22	23	23	24	24	**265**
Income After Tax	($M)					59	58	58	78	78	103	105	105	99	99	124	132	132	135	135	**1,501**
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	**744**
Cash Flow	($M)					167	167	167	163	163	146	146	146	147	147	139	137	137	137	137	**2,245**
Capital	($M)	3	3	451	268	2	2	2	2	4	9	2	2	31	4	12	2	2	2	2	**801**
Net Cash Flow	($M)	**(3)**	**(3)**	**(451)**	**(268)**	**165**	**165**	**165**	**161**	**159**	**137**	**144**	**145**	**117**	**143**	**127**	**136**	**135**	**135**	**135**	**1,444**
Cum. Cash Flow	($M)	**(3)**	**(6)**	**(457)**	**(725)**	**(560)**	**(395)**	**(230)**	**(69)**	**90**	**228**	**372**	**516**	**633**	**776**	**903**	**1,039**	**1,174**	**1,309**	**1,444**	

Table 30
Operating Costs + 20 % - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$5.21**	**per tonne of ore**
IRR	=	**17.2%**	
NPV @ 0 %	=	**$1,444**	**million**
NPV @ 5 %	=	**$641**	**million**
NPV @ 10 %	=	**$250**	**million**
Payback	=	**4.4**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	$m	127	127	127	127	127	130	130	130	130	130	134	134	134	134	134	**1,955**
Total Smelting Costs	$m	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	$m	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Total Costs	$m	208	208	208	208	208	219	219	219	219	219	223	223	223	223	223	**3,244**
Production																	
Total Ore Processed	Mt	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	Mlbs	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	koz	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	$m	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	**1,447**
Costs Per Tonne Ore																	
Site Cost	$/t ore	5.06	5.06	5.06	5.06	5.06	5.21	5.21	5.21	5.21	5.21	5.37	5.37	5.37	5.37	5.37	**5.21**
Smelting Cost	$/t ore	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	$/t ore	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	**0.12**
Total Cost	$/t ore	8.30	8.30	8.30	8.30	8.30	8.74	8.74	8.74	8.74	8.74	8.91	8.91	8.91	8.91	8.91	**8.65**
Gold Credit	$/t ore	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	**3.86**
Net Cost	$/t ore	4.44	4.44	4.44	4.44	4.44	4.88	4.88	4.88	4.88	4.88	5.05	5.05	5.05	5.05	5.05	**4.79**
Cost Per Pound Cu																	
Site Cost	c/lb Cu	0.425	0.425	0.425	0.425	0.425	0.438	0.438	0.438	0.438	0.438	0.451	0.451	0.451	0.451	0.451	**0.438**
Smelting Cost	c/lb Cu	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	c/lb Cu	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	**0.010**
Total Cost	c/lb Cu	0.698	0.698	0.698	0.698	0.698	0.735	0.735	0.735	0.735	0.735	0.748	0.748	0.748	0.748	0.748	**0.727**
Gold Credit	c/lb Cu	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	**0.324**
Net Cost	c/lb Cu	0.373	0.373	0.373	0.373	0.373	0.410	0.410	0.410	0.410	0.410	0.424	0.424	0.424	0.424	0.424	**0.403**

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Table 31
Operating Costs - 20 % - Annual Net Smelter Return
(All Currency is US $ Unless Specified Otherwise)

Price of Copper = $1.00 per pound of copper
Price of Gold = $300 per ounce of gold

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Concentrate Assays																	
Copper	(%)	35.0	35.0	35.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**31.7**
Gold	(g/t)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**24.2**
As	(%)	0.65	0.65	0.65	0.65	0.65	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	**0.59**
Copper-Gold Concentrate Production																	
Concentrate	(kt)	386	386	386	386	386	450	450	450	450	450	450	450	450	450	450	**6,429**
Per Tonne of Concentrate																	
Contained Copper	(kg)	350	350	350	350	350	300	300	300	300	300	300	300	300	300	300	**4,750**
Cu Unit Deduction	(kg)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**165**
Cu % Deduction	(kg)	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	**154**
Cu Paid	(kg)	339	339	339	339	339	289	289	289	289	289	289	289	289	289	289	**4,583**
Contained Au	(g)	26.7	26.7	26.7	26.7	26.7	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	**363**
Au % Deduction	(g)	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**11**
Au Paid	(g)	25.9	25.9	25.9	25.9	25.9	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	**352**
Treatment Charge	($/t conc)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	**1,350**
Freight	($/t conc)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**450**
Cu Refining Cost	($/t conc)	69	69	69	69	69	59	59	59	59	59	59	59	59	59	59	**935**
Au Refining Cost	($/t conc)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**57**
As Penalty	($/t conc)	9	9	9	9	9	7	7	7	7	7	7	7	7	7	7	**116**
Total Charges	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Cu Payment	($/t conc)	747	747	747	747	747	637	637	637	637	637	637	637	637	637	637	**10,104**
Au Payments	($/t conc)	250	250	250	250	250	214	214	214	214	214	214	214	214	214	214	**3,395**
Total Payments	($/t conc)	997	997	997	997	997	852	852	852	852	852	852	852	852	852	852	**13,499**
Total Deductions	($/t conc)	202	202	202	202	202	190	190	190	190	190	190	190	190	190	190	**2,907**
Net Payment	($/t conc)	794	794	794	794	794	662	662	662	662	662	662	662	662	662	662	**10,591**
Annual NSR	($M)	306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	**4,511**

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Table 32
Operating Costs - 20 % - Cash Flow Statement
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$3.48**	**per tonne of ore**

	Units	Year -4	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue																					
Smelter Return	($M)					306	306	306	306	306	298	298	298	298	298	298	298	298	298	298	4,511
NSR Royalty	($M)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	45
Operating Results																					
Mining Cost	($M)					25	25	25	25	25	27	27	27	27	27	30	30	30	30	30	410
Milling Cost	($M)					51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	759
G & A Cost	($M)					9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	135
Total Costs	($M)					84	84	84	84	84	87	87	87	87	87	90	90	90	90	90	1,304
Operating Income	($M)					219	219	219	219	219	208	208	208	208	208	205	205	205	205	205	3,162
Income Taxes																					
Loss Carryforward							0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	744
Taxable Income	($M)					111	111	111	134	134	165	167	167	160	159	191	200	200	204	204	2,418
Taxes	($M)					17	17	17	20	20	25	25	25	24	24	29	30	30	31	31	363
Income After Tax	($M)					94	94	94	114	114	140	142	142	136	135	162	170	170	173	173	2,055
Loss Carryforward	($M)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flows																					
DD&A	($M)					108	108	108	85	85	43	41	41	48	49	15	5	5	2	2	744
Cash Flow	($M)					202	202	202	199	199	183	183	183	184	184	177	175	175	175	175	2,799
Capital	($M)	3	3	451	268	2	2	2	2	4	9	2	2	31	4	12	2	2	2	2	801
Net Cash Flow	($M)	(3)	(3)	(451)	(268)	201	201	201	197	195	174	181	182	154	180	165	174	173	173	173	1,999
Cum. Cash Flow	($M)	(3)	(6)	(457)	(725)	(524)	(323)	(122)	75	269	444	625	806	960	1,140	1,305	1,479	1,652	1,825	1,999	

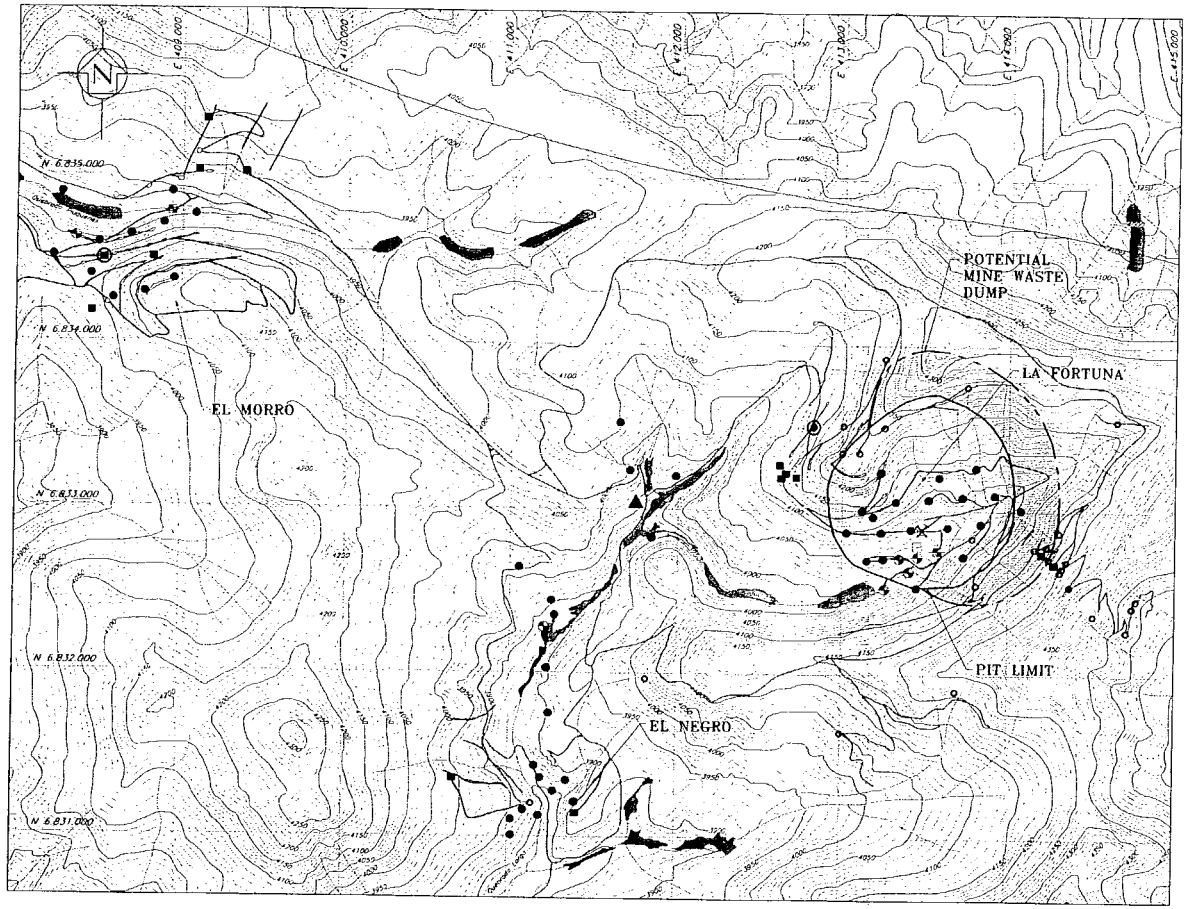
Table 33
Operating Costs - 20 % - Economic Results
(All Currency is US $ Unless Specified Otherwise)

Price of Copper	=	**$1.00**	**per pound of copper**
Price of Gold	=	**$300**	**per ounce of gold**
Total Capital Costs	=	**$801**	**million**
Operating Costs	=	**$3.48**	**per tonne of ore**
IRR	=	**21.9%**	
NPV @ 0 %	=	**$1,999**	**million**
NPV @ 5 %	=	**$955**	**million**
NPV @ 10 %	=	**$440**	**million**
Payback	=	**3.6**	**years**

	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Operating Costs																	
Total Site Costs	$m	84	84	84	84	84	87	87	87	87	87	90	90	90	90	90	**1,304**
Total Smelting Costs	$m	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	**1,243**
Total Royalty	$m	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**45**
Total Costs	$m	165	165	165	165	165	175	175	175	175	175	178	178	178	178	178	**2,592**
Production																	
Total Ore Processed	Mt	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	**375.0**
Total Cu Produced	Mlbs	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	**4,463**
Total Au Produced	koz	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	**4,973**
Gold Credit	$m	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	**1,447**
Costs Per Tonne Ore																	
Site Cost	$/t ore	3.37	3.37	3.37	3.37	3.37	3.47	3.47	3.47	3.47	3.47	3.58	3.58	3.58	3.58	3.58	**3.48**
Smelting Cost	$/t ore	3.12	3.12	3.12	3.12	3.12	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	**3.32**
Royalty Cost	$/t ore	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	**0.12**
Total Cost	$/t ore	6.62	6.62	6.62	6.62	6.62	7.01	7.01	7.01	7.01	7.01	7.11	7.11	7.11	7.11	7.11	**6.91**
Gold Credit	$/t ore	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	**3.86**
Net Cost	$/t ore	2.76	2.76	2.76	2.76	2.76	3.15	3.15	3.15	3.15	3.15	3.25	3.25	3.25	3.25	3.25	**3.05**
Cost Per Pound Cu																	
Site Cost	c/lb Cu	0.283	0.283	0.283	0.283	0.283	0.292	0.292	0.292	0.292	0.292	0.301	0.301	0.301	0.301	0.301	**0.292**
Smelting Cost	c/lb Cu	0.262	0.262	0.262	0.262	0.262	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	**0.279**
Royalty Cost	c/lb Cu	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	**0.010**
Total Cost	c/lb Cu	0.556	0.556	0.556	0.556	0.556	0.589	0.589	0.589	0.589	0.589	0.598	0.598	0.598	0.598	0.598	**0.581**
Gold Credit	c/lb Cu	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.324	**0.324**
Net Cost	c/lb Cu	0.232	0.232	0.232	0.232	0.232	0.264	0.264	0.264	0.264	0.264	0.273	0.273	0.273	0.273	0.273	**0.257**

Figures

Figures



LEGEND / SIMBOLOGIA:

- COMMUNITY LIMITS / LIMITE COMUNAL
- AGRICULTURAL USE LIMITS / LIMITE COMUNIDAD AGRICOLA LOS HUASCOALTINOS. LOS HUASCOALTINOS RANCH / ESTANCIA DE LOS HUASCOALTINOS
- EXISTING GROUND CONTOUR / CURVAS DE NIVEL
- EXISTING DRAINAGE / QUEBRADAS
- LOW VEGETATION / VEGAS
- HISTORICAL LOCATION / SITIO HISTORICO
- SANTA JULIA MINE / MINA SANTA JULIA
- EXPLORATION MANCAMP / CAMPAMENTO DE EXPLORACION

TEST LOCATIONS AND ACCESS ROADS / SONDAJES REALIZADOS Y CAMINOS DE ACCESO

- NORANDA (2000-2001)
- CONSTRUCTION ACCESS ROADS FOR NORANDA / CAMINOS CONSTRUIDOS POR NORANDA (2000-2001)
- BHP (1993-1994)
- CONSTRUCTION ACCESS ROADS FOR BHP / CAMINOS CONTRUIDOS POR BHP (1997-1999)
- METALLICA (1999)
- CONSTRUCTION ACCESS ROADS FOR METALLICA / CAMINOS CONSTRUIDOS POR METALLICA (1993-1994)
- BORING WITH GROUNDWATER / SONDAJES CON NIVEL DE AGUA SUBTERRANEA (NORANDA 2000-2001)
- TEST WELL WITH GROUND WATER / CALICATAS CON NIVEL DE AGUA SUBTERRANEA

Esc. 125 0 250 500 750 1000 1250 m.

CLIENT	METALLICA RESOURCES INC
PROJECT	EL MORRO PROJECT
TITLE	CONCEPTUAL LAYOUT OF FACILITIES

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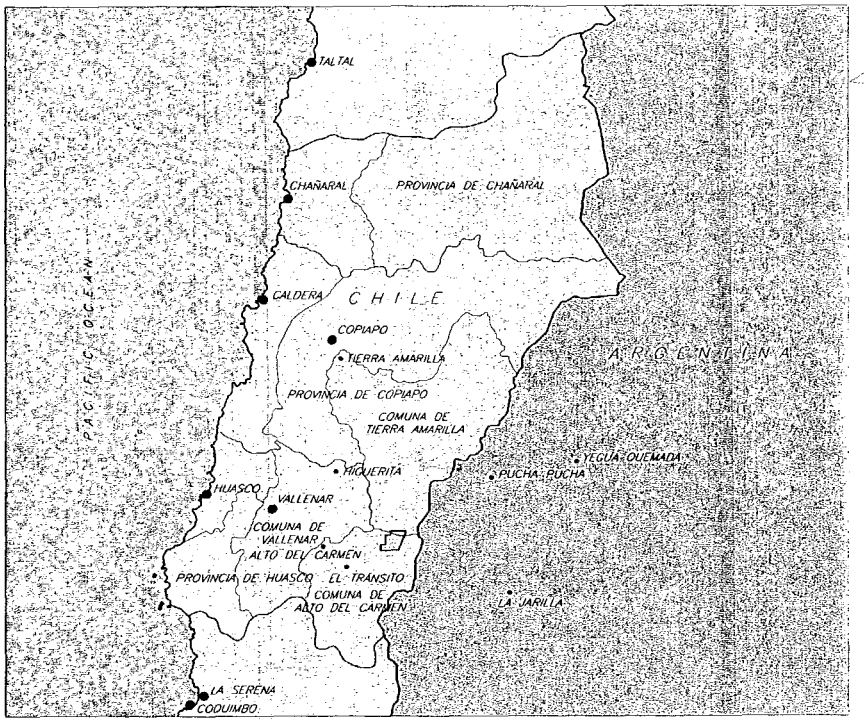
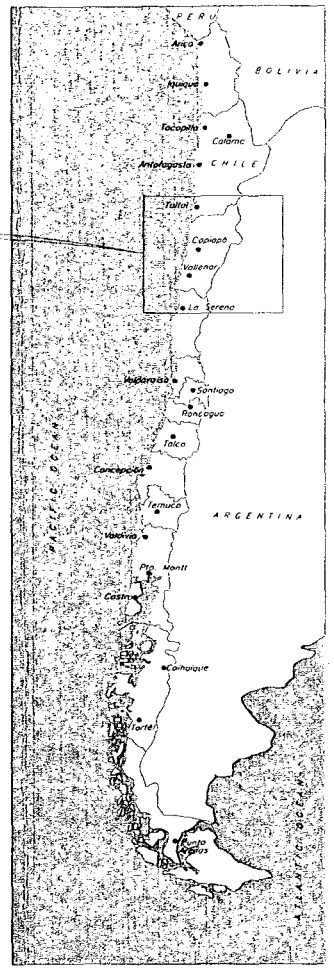
DESIGNED BY		CHECKED BY		DATE	DRAWING No.	FIGURE No.	REV.
DRAWN BY	WA	APPROVED BY		12/26/01	8009F02A	3.	A

PLOT SCALE: 1:2 | REF: NONE



AREA OF CONCERN



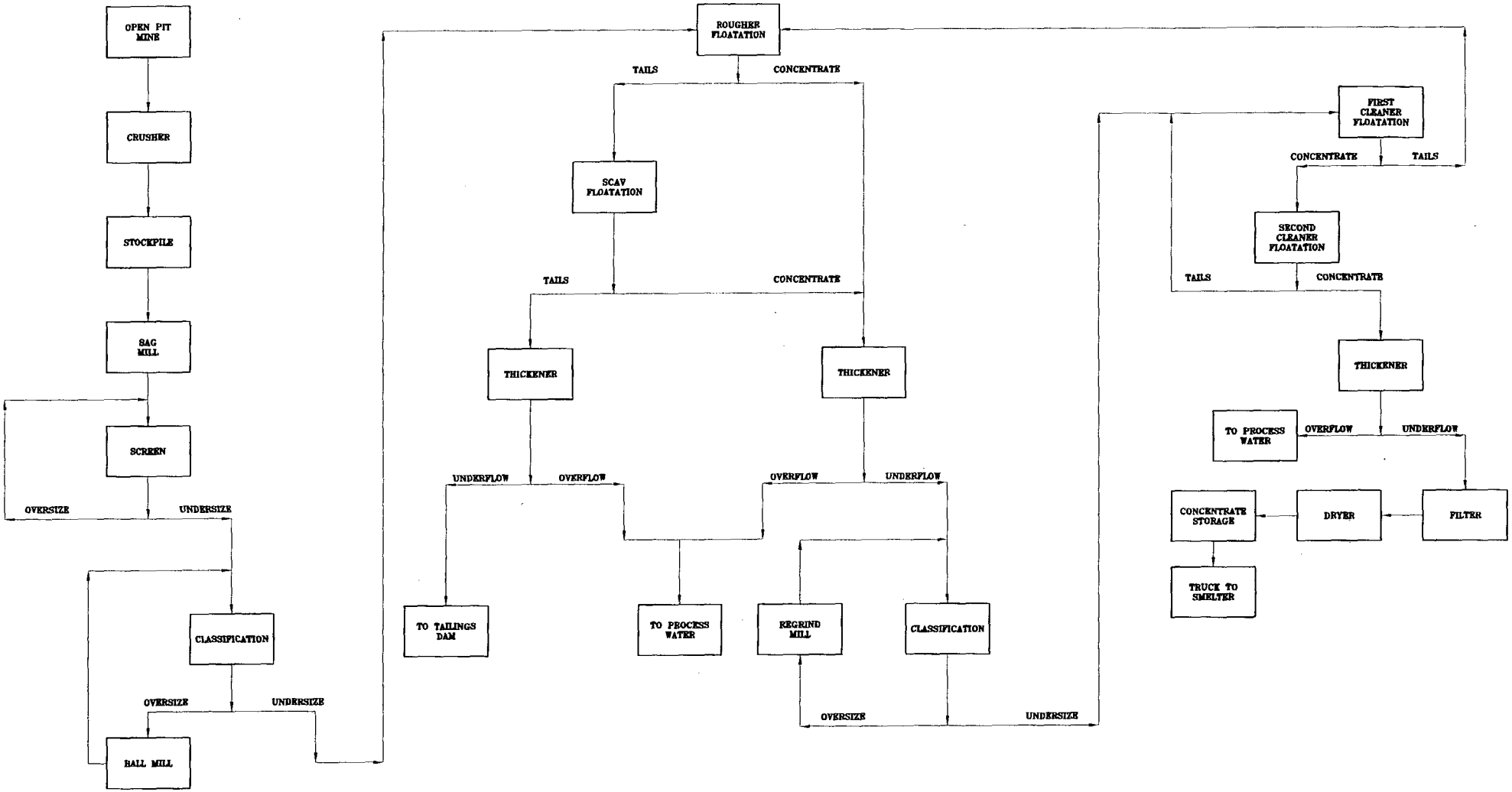
LEGEND

- INTERNATIONAL BOUNDARY
- REGIONAL BOUNDARY
- PROVINCIAL BOUNDARY
- LOCAL COMMUNITY BOUNDARY
- EL MORRO PROJECT AREA

CLIENT	METALLICA RESOURCES INC
PROJECT	EL MORRO PROJECT
TITLE	GENERAL PROJECT LOCATION

Knight Piésold CONSULTING

DESIGNED BY		CHECKED BY		DATE	DRAWING No.	FIGURE No.	REV.
DRAWN BY	WA	APPROVED BY		12/26/01	8009F01A	1	A



CLIENT	METALLICA RESOURCES INC
PROJECT	EL MORRO PROJECT
TITLE	SIMPLIFIED PROCESS FLOWSHEET

Knight Piésold CONSULTING

DESIGNED BY		CHECKED BY		DATE	DRAWING No.	FIGURE No.	REV.
DRAWN BY	WA	APPROVED BY		12/28/01	8009F05A	2	A

Figure 4
Plot of Metal Prices vs. Net Present Value

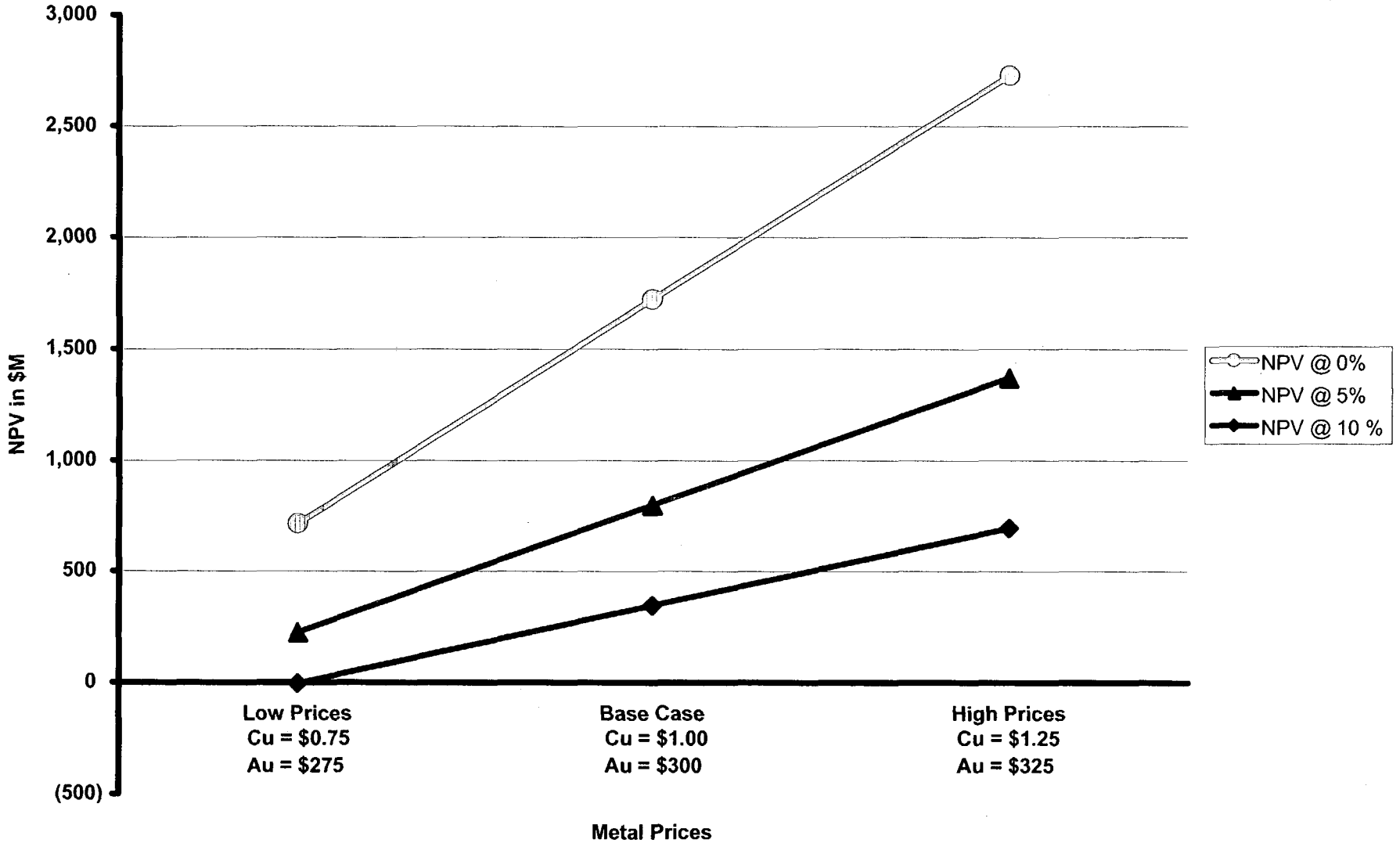


Figure 5
Plot of Metal Prices vs. Internal Rate of Return

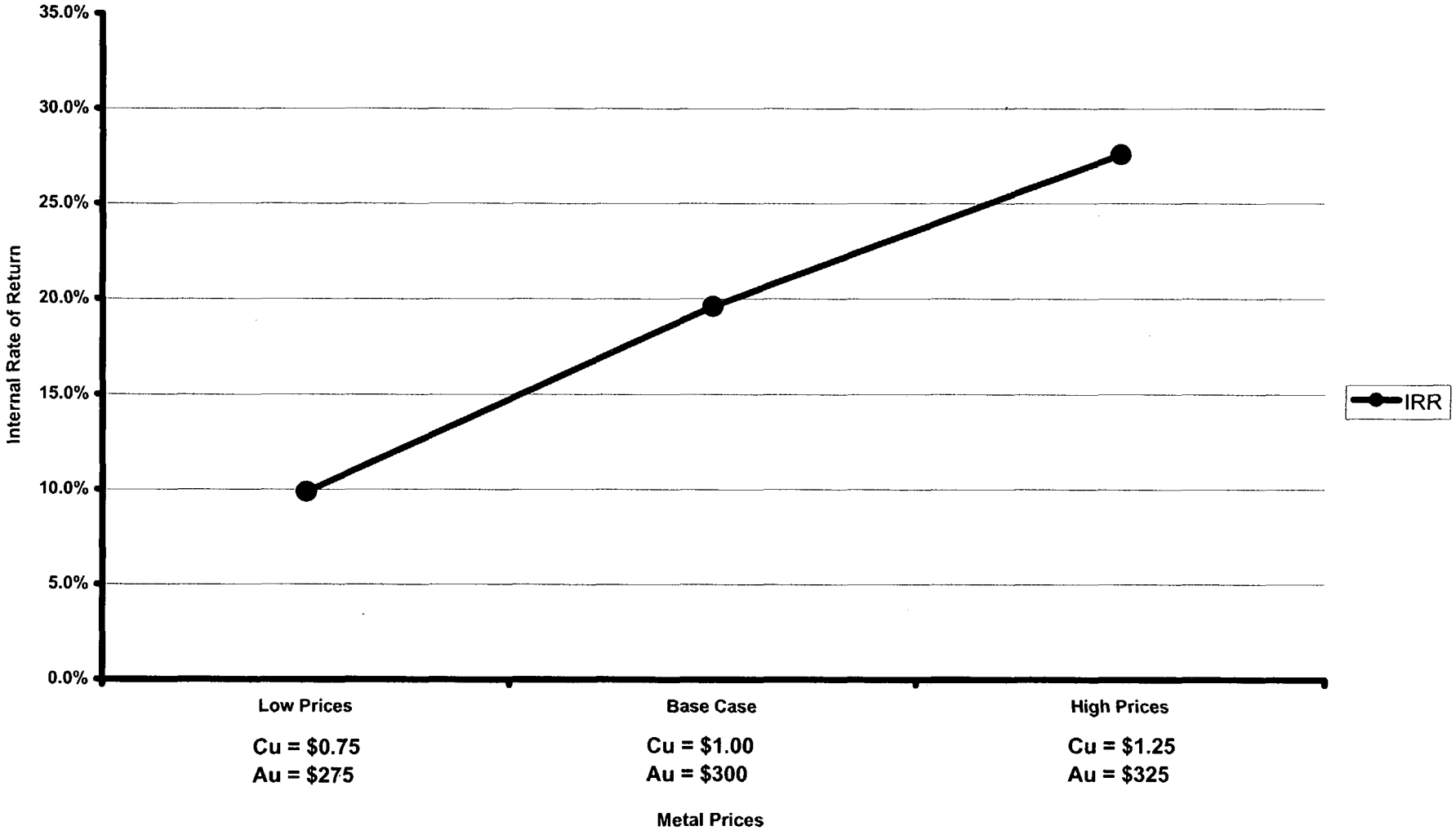


Figure 6
Plot of Sensitivity Variance vs. Internal Rate of Return